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SWEET'S CATALOG FILE

A File of Manufacturers' Catalogs designed for the use of Architects, Engineers, Contractors and others whose practice it is to select, specify or purchase building materials, equipment and allied services.

SWEET'S CATALOG SERVICE
DIVISION OF F. W. DODGE CORPORATION
119 WEST FORTIETH STREET, NEW YORK

SEE SECTION 1

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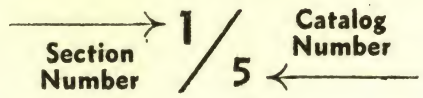
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ALUMINUM COMPANY OF AMERICA

Member of The Producers' Council, Inc.

Manufacturers of Alcoa Albron Paste and Powder for Aluminum Paint

1844 Gulf Building
PITTSBURGH, PA.

For Sales Offices, see Metals Section
For Other Pages on Alcoa Aluminum, Its Alloys and Uses, see File Index

ALCOA ALUMINUM ALBRON

PRODUCTS

ALCOA ALBRON PASTE and ALCOA ALBRON POWDER for use as pigment in aluminum paint.

WHERE TO BUY ALUMINUM PAINT

Most reputable paint manufacturers, their jobbers and dealers supply aluminum paint made with pure Alcoa Albron Paste or Powder and carefully compounded vehicles. When specifying or purchasing aluminum paint, be sure the pigment portion is Alcoa Albron and the vehicle is of the best quality suited for the surface to be painted.

SPECIFICATIONS

Complete specifications for aluminum paint (A.I.A. File No. 25-B-252) made with Alcoa Albron Paste or Powder may be obtained from ALUMINUM COMPANY OF AMERICA. These specifications are designed especially for architects' and specifications writers' use. They include both vehicle and pigment specifications, as well as instructions for mixing and applying aluminum paint on various types of surfaces.

Also request the Aluminum Paint Manual which gives in great detail the instructions for applying aluminum paint to different surfaces.

QUALITIES

(1) Durability
(2) High resistance to moisture penetration
(3) Good reflectivity
(4) Opaqueness
(5) Resistance to corrosion by industrial atmospheres
(6) Ease of application
(7) Economy



For bridges and other outdoor structures aluminum paint offers maximum protection and attractiveness



Interiors painted with aluminum paint have increased light and brilliance

USES

Industrial

There are many uses for Aluminum Paint about the plant; inside for reflectivity and resistance against smoke and fume; outside for corrosion-resistance and for wood priming or top coats on company houses.

Large users who have facilities for making tests have discovered two important facts about Aluminum Paint—Best results are obtained when genuine Alcoa Albron Paste or Powder with a quality vehicle suitable for each surface and purpose is used. Then efficient "leafing" of the millions of tiny Aluminum flakes is obtained, and high reflectivity and an enduring coat of metal protection are assured.

General

On houses for priming, on store exteriors, in basement and workrooms as well as in the most attractive shops, studios and restaurants, Aluminum Paint is widely spreading its metal coat of beauty and durability.

On any and all of these surfaces, this distinctive action takes place—when you brush on Aluminum Paint, millions of tiny flakes, by "leafing" form a continuous coat of metal protection; rapid moisture changes in wood are resisted; corrosion of metal surfaces is retarded; a long life of protection is assured; and in interior decoration, bright silvery Aluminum Paint harmonizes beautifully with other colors.

ALCOA ALUMINUM ALBRON



Aluminum paint for priming increases the life of the finish coat and the lumber

ESTABLISHED 1900

ARNESTO PAINT COMPANY, INC.

Manufacturers of Paint, Varnish, Enamel and Waterproofing

TELEPHONE
CIrcle 6-7272

546-50 West 46th Street
NEW YORK, N. Y.

DISTRIBUTORS IN PRINCIPAL CITIES

A Complete Line of Paint Products including: Lead and Zinc House Paint, Satin Flat Washable Paint, Primo Gloss White, Gloss Stippling Paint, Enamel Undercoat, Quick Drying Enamel, Arnesto Primer and Sealer, Porch and Deck Enamel, Concrete Floor Paint, Varnish Stain,

ARNESTO
Paint Products

Penetrating Oil Stain, Shingle Stain, Traffic Paint, Floating Silver Aluminum Paint, Barn and Roof Paint, Permanent Greens, Imperial Paste Paint, Semi-gloss Paint, Tinting Colors in Oil, Varnishes, Red Lead Paint, Integral Waterproofings, Roof Coatings, Caulking Compound, and Putties.



Apartment



Hotel



Commercial

Type and Structures in Which Arnesto Paint Products Are Used

IMPERIAL PASTE WHITE

"The Whitest Outside Paint"

For generations each painter has prepared his lead and oil paint according to his own formula. Arnesto has reduced this uncertain procedure to the simple necessity of the painter adding only linseed oil and driers. "Imperial Paste White" is scientifically compounded of high grade materials—*white lead* for age, *zinc* for hardness and *titanium* for coverage—with the formula on every can. These ingredients combine to produce a product that the architect can specify in safety.

Imperial Paste White—*"The Whitest Outside Paint*—is a perfectly balanced formula and is guaranteed, when applied according to instruction, not to chip, crack, peel or mildew. One gallon makes from two to two and one-half gallons of the finest outside white paint obtainable. For a safe, economical, high grade paint job *specify* "Imperial Paste White" as manufactured by the ARNESTO PAINT CO., INC., New York, N. Y.

SUPERFINE INTERIOR ENAMEL

Superfine Interior Enamel is a high grade white enamel made from a titanium base. The remarkable covering qualities of Superfine Interior Enamel is exceeded only by its high gloss. It brushes freely with no pull and will not sag. This enamel will remain white and maintain its gloss after washing. Recommended for walls, woodwork and ceilings, and metal surfaces.

"PRIMO"

"Primo" is a quality *interior* paint and can be used for sealing, priming, or finishing. It is a heavy body gloss white paint made from a titanium pigment base and tung oil vehicle. Extremely easy brushing. A perfect coating for plastered walls, ceilings, woodwork, and metal surfaces. Primo can be tinted to any shade desired, and will retain its whiteness when used uncolored.

CONCRETE FLOOR PAINT

Arnesto Concrete Paint is a waterproof, alkaliproof, quick drying, scientifically prepared paint especially adapted to all concrete surfaces. Can be used outside or inside. It dries with a high gloss and has a flintlike finish. It can be washed with boiling water and still retain its sheen. It is made in eleven durable colors.

SATIN FLAT PAINT

Satin Flat Paint is a time tested, guaranteed washable interior paint. It is a titanium pigment product possessing extremely high covering qualities. Satin Flat brushes freely and levels out leaving no brush marks. It dries to a hard satin finish and is made in white and 16 pastel shades.



Madison Square Garden Swimming Pool Protected with Arnesto Concrete Paint

Arnesto Paint Products are Approved by "The Investigating Committee of Architects and Engineers"

ARTSTONE ROCOR CORPORATION

TELEPHONE
STerling 8-2468

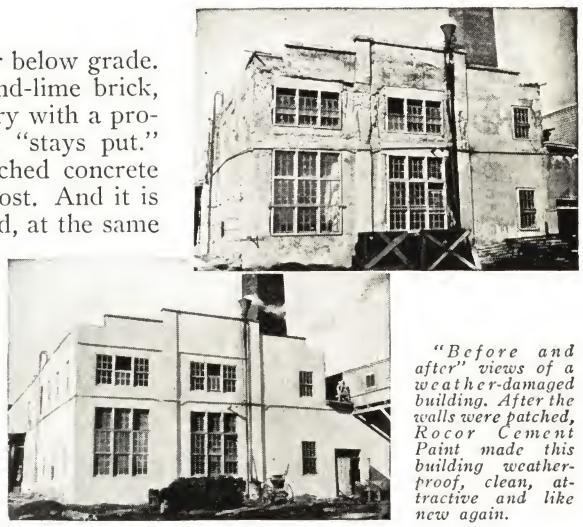
45th Street and First Avenue, Bush Terminal
BROOKLYN, N. Y.

For other Artstone products, see File Index

ROCOR CEMENT PAINT

For all exterior and interior porous masonry surfaces, above or below grade. Concrete, stucco, brick, cement block, cinder concrete block, sand-lime brick, hollow tile and stone become bright, fresh, dampproof and sanitary with a protective coating that hardens like concrete, bonds perfectly and "stays put."

Rocor Cement Paint is the ideal paint for old unsightly patched concrete structures, giving them the appearance of new buildings at low cost. And it is ideal, too, for light wells and courts, increasing light reflection and, at the same time, effectively dampproofing spalled and leaky brick.



"Before and after" views of a weather-damaged building. After the walls were patched, Rocor Cement Paint made this building weatherproof, clean, attractive and like new again.

Rocor Cement Paint Gives Spalled, Repaired Concrete Structures the Appearance of New Buildings

Character of Rocor Cement Paint

Rocor Cement Paint is an inorganic paint with a colloidally treated portland cement base. It bonds to and becomes an inseparable part of the surface. It is amazingly easy to use. Packaged as a dry powder, it is mixed with ordinary tap water to produce a paint that looks, acts, and works very much like a good flat paint. But there the similarity stops, for Rocor Cement Paint contains no oils, glues or any organic substance whatever. Rocor does not settle out. Mixed with water, it stays mixed, the consistency and "body" remaining true.

Rocor Cement Paint is fireproof, does not peel or crack off, or decay. It is sanitary. It has no odor when applied and does not develop one later. It is, therefore, ideal as a decorative and dampproof paint for damp or musty basements, cellars, tunnels and subways. Rocor Cement Paint may be washed with soap and water.

Rocor Cement Paint is not hurt by salt air, steam, vapor, or condensation. Rocor Cement Paint is, in fact, used for swimming pools, wading pools and fountains, and indoors in industrial plants, factories, warehouses, breweries, laundries, shower and steam rooms, and wherever moisture would quickly destroy most paints.

Sixteen Colors

A standard range of 16 attractive colors, including snow white, is available. Color card and descriptive leaflet will be sent upon request. Special colors manufactured include such colors as Brownstone, Black, Turquoise Blue, etc.

Coverage

Rocor Cement Paint is economical. One pound covers from 20 to 36 square feet in one coat. Two coats are recommended. It is handily packaged in 10 pound metal pails and 50 pound steel drums, and for large jobs, in 350 pound steel drums. All containers are moistureproof and air tight. Full directions are enclosed in each container.

Rocor Cement Paint Specifications—Short Form

"All surfaces (exterior/interior—indicate) shall be painted with two coats of Rocor Cement Paint as made by Artstone Rocor Corporation, Building 65, Bush Terminal, Brooklyn, N. Y., in color to be selected by the architect.

Material shall be delivered to the job in unopened, sealed containers. Nothing but clean, drinkable water shall be added and the paint shall be mixed and applied over properly prepared, clean surfaces and cured with water, all in accordance with printed directions which the manufacturer will furnish to the contractor upon request."

Note: Indicate whether brush or spray application is desired. On old buildings, Rocor Cement Paint should be specified for pointing joints and filling cracks prior to application of material as paint.

ROCORLITE—One-Coat Does the Job!

Rocorlite is an interior flat paint in concentrated paste form, easy to mix and use. Rocorlite decorated walls and ceilings are completely finished one hour after application. There is no tedious preparation work, no unpleasant paint odor and one coat usually does the job. Rocorlite is unaffected by high temperatures and is used with satisfaction on radiators, boilers, furnaces, steam pipes and similar metal surfaces and is excellent, too, for machinery foundations and supports of steel, brick or concrete.

The following checking points will briefly summarize the many advantages of this unusual paint product:

√ Dries within one hour.
√ Double hiding power—one coat does the work of two.
√ No disagreeable paint odor.
√ Washes readily with soap and water after the paint has set.
√ Non-yellowing. Colors remain bright, fresh and attractive.
√ Unusually high light reflection for white. No hard glare or sheen.
√ Economical. One gallon of Rocorlite in concentrated paste form, mixed with water, makes 1½ gallons of paint.
√ No costly thinners, oils or turpentine required. Only ordinary tap water is needed.
√ Free-flowing, easy-spreading, with brush or spray.
√ Non-inflammable and non-explosive. Safe to use.
√ Will not peel, crack, flake, or rub off.

And Rocorlite makes an excellent primer or first coater for other types of paint. It can be used on practically any interior surface, with no tedious or costly preparation.

Rocorlite comes in 12 attractive colors, including white and black. It is conveniently packaged in quart and gallon cans and in 5 gallon drums. All containers have large, removable covers and can be used for mixing.

Rocorlite Specifications—Short Form

"All interior surfaces, not otherwise specified, (or indicate) shall be painted with Rocorlite Interior Paint as made by Artstone Rocor Corporation, Building 65, Bush Terminal, Brooklyn, N. Y., in color selected by the architect.

Material shall be delivered to the job in unopened, sealed containers and nothing but clean, drinkable water shall be added to the material. It shall be mixed and applied over clean, dust-free surfaces, all in accordance with the printed directions which the manufacturer will furnish to the contractor upon request."

Rocorlite has been widely used and praised for its value and economy. It is an ideal maintenance paint, easy to use, low in cost. Leaflet describing Rocorlite Interior Paint, showing colors available, will be sent upon request.

ARTSTONE PRODUCTS
TRADE MARK

ESTABLISHED 1858

BERRY BROTHERS, INC.

Varnishes—Enamels—Lacquers—Paints

FACTORY AND MAIN OFFICE
DETROIT, MICHIGAN
CANADIAN FACTORY: WALKERVILLE, ONTARIO

BRANCHES

JERSEY CITY, N. J., 629 Grove St.—Delaware 8-2642
BOSTON, MASS., 21 Power House St.—South Boston 3668
CHICAGO, ILL., 300 W. Hubbard St.—Superior 6760
CINCINNATI, OHIO, 130 W. Court St.—Cherry 7113
ST. LOUIS, MO., 3721 Washington Ave.—Jefferson 9072
WINNIPEG, MAN., 58 Victoria St.—92-644
MONTREAL, QUE., 1091 Wellington St.—Elwood 7286
TORONTO, ONT., 218 Front St. E.—Randolph 1904

THE COMPANY

Berry Brothers, Inc. was founded in Detroit in 1858 and through the 80 years that have followed has established a reputation for quality architectural finishes. From the very beginning high standards were set and have since been rigidly maintained. A large technical staff tests all raw materials and also controls every step in the production of our finishes.

Our Architectural Department is ready to furnish finished panels of our standard products and to assist you with special finishing problems that may arise.

BERRY BROTHERS' BERRYCRAFT HOUSE PAINT

Berrycraft House Paint is composed of those pigments which insure the ultimate in durability, hiding and color retention. The vehicle is composed of Premium Linseed Oil and Lionoil. It is finely ground, the colors are clear and it dries with a good full gloss. The addition of Lionoil to Berrycraft House Paint produces a hard, glossy surface and one that will retain that gloss for a much longer time than is usually expected of the best exterior paints.

BERRY BROTHERS' LIONOIL FLOOR ENAMEL

The base of this product is Lionoil Clear, thus adding sealing and waterproofing properties to Lionoil Floor Enamel not found in ordinary floor paints. This enamel is recommended for floors wherever a tough, waterproof finish is desired. It dries with a full gloss and will level out without showing brush marks. Under ordinary conditions it will dry in 4 hours, hard overnight.

BERRY BROTHERS' LIONOIL METAL TRIM ENAMEL

A Lionoil processed enamel that is well known among architects and one that has been used on many of the country's finest office buildings, hotels and industrial buildings.

It dries harder than lead and oil—shows no brush marks—in fact, it closely resembles a baked enamel finish. Dries to a rich satin luster.

We manufacture Lionoil Metal Trim Enamel for both exterior and interior use. While it was originally made for finishing metal trim and steel sash, it is now frequently specified for steel stairs, ornamental iron and various other metal surfaces.

BERRY BROTHERS' LIQUID GRANITE VARNISH

Liquid Granite Varnish is, we believe, the best known varnish made today. It is tough, elastic and can be used with equal success on floors or standing trim. Because of its very long life, Liquid Granite is an economical varnish to use. Architects appreciate the value of having one varnish on a job which can be used with excellent results on all wood surfaces. Liquid Granite is particularly recommended for window stools and frames.

BERRY BROTHERS' BERRYSPAR

A varnish that has every good quality of the old slow drying spar varnishes. Berryspar dries dust free in 2 hours and hard in 8 hours under ordinary conditions. It is absolutely waterproof and alcoholproof.

It is the perfect varnish for exterior doors and other woodwork exposed to the weather.

BERRY BROTHERS' FERROCHROME PRIMER

More as a habit than for any substantial reason, Red Lead has for years been the standard primer for structural steel. Only recently have paint manufacturers been able to produce a material that will do a far better job of priming than Red Lead can do, and will have none of its faults.

Berry Brothers' Ferrochrome Primer produces a film not as heavy as Red Lead and, consequently, the entire painted surface is always well covered. This primer dries to a tough, hard surface in 4 hours which enables the fabricators to ship steel in much better condition, as a surface painted with Berry Brothers' Ferrochrome Primer will not show the usual abrasions caused by the rough handling of cranes and heavy chains used in transporting steel to the job.

The phenomenal results obtained from the use of Ferrochrome Primer are due to two things:

(1) The vehicle of Ferrochrome Primer is composed of rust inhibiting products.

(2) The pigment is zinc chromate blended with ferric oxide—both rust inhibiting pigments which on actual test have proven to be the best pigments for preventing the formation and spread of rust.

BERRY BROTHERS' GRANITE FLOOR SEAL

Granite Floor Seal is a penetrating, wear-resisting, waterproof finish for wood, concrete, terrazzo and composition floors. It is very light in color and does not discolor light woods. Granite Floor Seal is particularly recommended for use on gymnasium and dance floors for the reason that it is marproof and will not heel-burn. The finish produced by Granite Floor Seal is non-porous and leaves no place for germs to penetrate, thus eliminating the danger of spreading foot infection commonly encountered in gymnasiums. This product may be used as a final finish, an undercoat for gloss or dull varnishes or it is an ideal surface for wax. Granite Floor Seal is economical, covering 550 sq. ft. per gal., one coat. It dries fast and may be recoated the same day. Ask for panels showing this finish.

PAINTING SPECIFICATIONS

The following specifications are brief but serve as an accurate guide to good painting practices. Specifications in complete detail are given in our Architectural Catalogue which will be mailed to any architect on request.

Structural Steel Priming Structural Steel (Field Coat)	1 brush coat Berry Brothers' Ferrochrome Primer. 2 brush coats Berry Brothers' Lionoil (specify color)
Exterior Steel Sash (Ornamental Iron and all other exterior metal surfaces)	2 brush coats Berry Brothers' Lionoil Exterior Metal Trim Enamel of standard color selected.
Interior Steel Sash (Metal Trim, metal clad doors and all other interior metal surfaces)	2 brush coats Berry Brothers' Lionoil Interior Metal Trim Enamel of standard color selected.
Exterior Wood Work	(Painted) New Work 3 coats Berry Brothers' House Paint applied according to directions of manufacturer.
Exterior Wood Shutters and Blinds	2 coats Berry Brothers' Trim & Trellis Green or Berry Brothers' House Paint.
Exterior Concrete, Stucco and Brick surfaces	1 coat Berry Brothers' Lionoil Clear straight or mixed with Berry Brothers' House Paint of the shade desired. 2 coats Berry Brothers' House Paint.
Exterior Wood Doors or other Wood surfaces	(Varnished) Open Grained Woods 1 coat Berry Brothers' Paste Wood Filler of color selected. 2 coats Berry Brothers' Berryspar Varnish. Close Grained Woods 1 coat Berry Brothers' Penetrating Oil Stain. 2 coats Berry Brothers' Berryspar Varnish. *Note: Do not use Shellac on any wood surface exposed to dampness.*
Wood Floors	(Varnished) Open Grained Woods 1 coat Berry Brothers' Paste Wood Filler. 3 coats Berry Brothers' Liquid Granite Varnish. (Liquid Granite Varnish may be obtained in Gloss, Dull or Satin Finish.) Where Dull or Satin Finish is desired, use Gloss on first 2 coats, final coat either Dull or Satin Finish.
Wood Floors	(Varnished) Close Grained Woods 1 coat Berry Brothers' Penetrating Oil Stain. 3 coats Berry Brothers' Liquid Granite Varnish. (Liquid Granite Varnish may be obtained in Gloss, Dull or Satin Finish.) Where Dull or Satin Finish is desired, use Gloss on first 2 coats, final coat either Dull or Satin Finish.
Concrete Floors	1 coat Berry Brothers' Lionoil Clear either straight or mixed with Floor Enamel of shade selected for final coat. 2 coats Berry Brothers' Floor Enamel. *Note: A coat of Berry Brothers' Liquid Granite Varnish or Berrywax over the above finish will greatly add to the life of the Floor Enamel.*
Gymnasium Floors	(Varnished) Close Grained Woods 2 coats Berry Brothers' Granite Floor Seal or two coats Berry Brothers' Lionoil Clear.
Interior Wood Work	(Enamel Finish) 1 coat Berry Brothers' Enamel Undercoat. 2 coats Berry Brothers' Enamel Undercoat and Luxeberry Enamel mixed half and half. 1 coat Berry Brothers' Luxeberry Enamel Gloss. *(Specify if rubbed finish is desired.)* For an Eggshell finish, specify the last coat Luxeberry Enamel Eggshell Gloss.
Interior Wood Work	(Varnished) Open Grained Woods 1 coat Berry Brothers' Penetrating Oil Stain. 1 coat Berry Brothers' Paste Wood Filler. 1 coat Berry Brothers' SDC White Shellac. 2 coats Berry Brothers' Luxeberry Wood Finish or Liquid Granite. *(Specify if rubbed finish is desired.)*
Interior Wood Work	(Varnished) Close Grained Woods 1 coat Berry Brothers' Penetrating Oil Stain. 1 coat Berry Brothers' SDC White Shellac 2 coats Berry Brothers' Luxeberry Wood Finish or Liquid Granite. ***Important Note:*** *The commonly used open-grained woods are oak, walnut, chestnut and mahogany. The close grained woods ordinarily used are pine, gumwood, birch, maple and poplar.*
Plaster Wall	(Flat Finish) 1 coat Berry Brothers' Primer and Sealer. 2 coats Berry Brothers' Flat Wall Finish. (Stippled Finish) 1 coat Berry Brothers' Primer and Sealer. 2 coats Berry Brothers' Heavy Body Stipple Flat Wall Finish. (Last coat to be stippled with brush or sponge.)
Plaster Wall	(Gloss Finish) 1 coat Berry Brothers' Primer and Sealer. 2 coats Berry Brothers' Interior Finish.
Plaster Wall	(Eggshell Finish) 1 coat Berry Brothers' Primer and Sealer. 2 coats Berry Brothers' Lusterlo.
Industrial Wall Finishes	1 coat Berry Brothers' Primer and Sealer. 2 coats Berry Brothers' Mill White. (Mill White is produced in Flat, Eggshell and Gloss.)
Dado	1 coat Berry Brothers' Primer and Sealer. 2 coats Berry Brothers' Lionoil Floor Enamel or Dado Enamel.
Bakery, Brewery or Distillery Wall Finish	(Fume Proof) 1 coat Berry Brothers' Primer and Sealer. 1 coat Berry Brothers' Flat Wall Finish. 1 coat Berry Brothers' Fume Proof Enamel.
Stadium Seating	1 coat Berry Brothers' Enamel Undercoat. 2 coats Berry Brothers' Quick Drying Enamel.
Wall Board	1 coat Berry Brothers' Lionoil Wall Board Primer Sealer. 1 or 2 coats Berry Brothers' Wall Finish Flat, Semi-Gloss or Gloss as directed.

BOSTON VARNISH COMPANY

Everett Station
BOSTON, MASS.

Kyanize Self-Smoothing

PAINTS VARNISHES ENAMELS

Kyanize Super Service Paint

A paint of outstanding qualities for the outside of houses or buildings of all kinds where extreme durability, long wear, and economy in application are desired.

KYANIZE Super Service Paint is a pure paint, the vehicle content being composed of 92% refined Linseed Oil and 8% Turpentine and Turpentine Japan, the pigment content being composed of pure Carbonate of Lead, pure Oxide of Zinc and Titanox in the White and tinting materials in the colors in variable quantities, depending on the depth of shade produced, producing a paint that has most excellent coverage and hiding properties with extreme durability.

Made in twenty-seven modern non-fading colors in addition to White and Black. Coverage—350 to 400 sq. ft.—two coats, or 250 to 300 sq. ft.—three coats.

Specification—All wood surfaces to be painted shall be thoroughly dry and free from dampness during the entire painting operation. No paint shall be applied immediately after a rain or during frosty or wet weather.

New Wood Outside—First Coat: On new soft wood or old weathered lumber, KYANIZE Super Service Paint should be thinned with 1 pt. of raw Linseed Oil and 1 qt. of Turpentine to the gallon of paint. For woods containing resinous content, such as Cypress or Yellow Pine, add 2 qts. of Turpentine and 1 pt. of raw Linseed Oil to each gallon of paint. After the priming coat has been permitted to dry, all nail holes and cracks shall be filled with a good grade of putty.

Second Coat: To each gallon of KYANIZE Super Service Paint, add 1 pt. of Turpentine.

Third Coat: Apply the paint as it comes from the can. If thinning is necessary, thin slightly with pure raw Linseed Oil.

Repainting Work Outside—Same as above, except omitting the first or priming coat.

Kyanize Preservative Shingle Stains

Composed of refined Creosote and Linseed Oil in combination with strong pigment colors giving permanency and outstanding durability; deep penetration in the wood is especially characteristic, preventing dry rot in shingles and wooden surfaces wherever used.

Red, Brown, Greens and Grays are the regular colors. Special colors furnished.

Specification—***Painting Wood Shingles—New Work***—First Coat: All wooden shingles shall receive one dip coat of KYANIZE Preservative Shingle Stain without reduction but as furnished by the manufacturer and in the color selected by the architect. The shingles shall be dipped two-thirds their length and thrown in loose piles to dry.

Second Coat: After shingles are laid, one brush coat of KYANIZE Preservative Shingle Stain of the same color shall be applied as it comes from the can.

Kygrön, the New Green

A most durable green for store fronts, trim and exterior work; and interiors not requiring varnish or enamel.

New pigments plus Linseed Oil and scientifically treated oils give KYGRÖN Green its permanency. Dries dust free in 3 to 4 hours, and hard overnight. Will not soften or "tack" in humid weather. Flows freely. Leaves no brush marks. Retains gloss longer than ordinary greens and resists mildew. Covers densely in one coat.

Specification—***New Work***—First Coat: Apply KYGRÖN thinned with 1 qt. of pure Turpentine to 1 gal. of KYGRÖN.

Second Coat: Apply KYGRÖN as it comes from the can. If required, thin with 1 pt. Turpentine to 1 gal. of KYGRÖN. *Do not thin with Linseed Oil.*

Kybrun, the New Brown

The new pigments plus Linseed Oil and scientifically treated oils make KYBRUN Brown quick drying and permanent. Dries dust free in 3 to 4 hours, and hard overnight. Will not soften or "tack" in humid weather. Flows freely and leaves no brush marks. Covers densely in one coat. Retains gloss longer than ordinary browns and resists mildew.

KYBRUN is a durable brown for store fronts, trim and exterior work, or interiors not requiring varnish or enamel.

Specification—***New Work***—First Coat: Apply KYBRUN thinned with 1 pt. of pure Turpentine to 1 gal. of KYBRUN.

Second Coat: Apply KYBRUN as it comes from the can. If required, thin with ½ pt. Turpentine to 1 gal. of KYBRUN. *Do not thin with Linseed Oil.*

Kyanize White Enamel "Blue Label"

Time alone has proven the extreme durability of this enamel. Surfaces finished two decades ago are today in perfect condition. No shrinking of the finish, permanency of whiteness, retention of lustre, and full bodied, are its characteristics. Its long oil composition assures free flowing and easy working properties, leaving a surface free from brush marks, streaks or laps.

Specification—***New Interior Woodwork***—Any open grain wood shall first be filled with KYANIZE Paste Filler well rubbed in. Allow time to set, then rub off with burlap across the grain. In 24 hours, sand the surface smoothly with fine sandpaper. Close grain woods shall be sanded thoroughly with fine sandpaper and all knots and sappy places given a coat of White Shellac.

First Coat: KYANIZE Enamel Undercoat. Reduce with 1 pt. of pure Turpentine to a gallon of Undercoat.

Second Coat: KYANIZE Enamel Undercoat as it comes from the can.

Third Coat: One-half KYANIZE Enamel Undercoat and half KYANIZE White Enamel.

Fourth Coat: KYANIZE White Enamel in the body supplied by the manufacturer, sanding lightly with fine sandpaper between coats. Each coat to dry thoroughly before applying the next, the last coat to be left in the gloss.

Refinishing Old Surfaces—Remove all dirt and grease and if the surface is in the high gloss, sand with fine sandpaper to remove the gloss and proceed as outlined above, omitting the first or priming coat.

Kyanize Celoid Finish

A washable, waterproof, medium gloss enamel with remarkable hiding qualities for both walls and woodwork. The ideal finish to use where a high gloss is objectionable and especially adaptable in finishing public buildings where surfaces are easily soiled and repeated washings are necessary. Made in fourteen pastel colors in addition to White, which can be easily tinted to special shades.

Specification—***New Wall and Ceiling Work***—Walls and celings of plaster shall be thoroughly dry and evidences of "hot spots" shall be treated with a wash coat of Zinc Sulphate solution in the proportion of 1½ lbs. of Zinc Sulphate to 1 gal. of water. Allow to dry.

First Coat: Apply KYANIZE Seal Rite Surfacer as a sealing coat as it comes from the can.

Second Coat: Apply KYANIZE Celoid Finish in the color selected by the architect.

Third Coat: Apply KYANIZE Celoid Finish of the same shade as second coat, full bodied, as it comes from the can well flowed on.

Repainting Old Work—Wash surface thoroughly, removing all dirt, grease and loose surfaces. Fill up all patches or cracks with Plaster of Paris or Crack Filler. Touch up bare spots and patches with Seal Rite Surfacer.

First Coat: Apply KYANIZE Celoid Finish as it comes from the can.

By ROYAL BARRY WILLS
Write Department 801 for Measured Drawings of Cape Cod Cottage Details

Second Coat: Apply KYANIZE Celoid Finish as taken from the can well flowed on.

New Interior Trim, etc.—Any open grain wood shall first be filled with a good paste filler well rubbed in. When dry, and hard, sandpaper thoroughly. Close grain woods shall be sanded thoroughly with fine sandpaper and all knots and sappy places given a coat of White Shellac.

First Coat: Apply KYANIZE Seal Rite Surfacer thinned with 1 pt. of Turpentine to a gallon of Seal Rite Surfacer.

Second Coat: Apply KYANIZE Celoid Finish as taken from the can.

Third Coat: Apply KYANIZE Celoid Finish as taken from the can well flowed on. Allow 36 hours to dry between second and third coats, and sand lightly with fine sandpaper the first coat of Seal Rite Surfacer after it has been allowed to dry 24 hours.

Kyanize Super Flow Flat White

A flat white of the highest quality and durability. Its outstanding qualifications are: *easy working—free flowing*—and *exceptional hiding properties.* It will not show laps or edges in coating large surfaces. The hard film produced permits of repeated washings without injury to the surface. It will not check, crack or chalk, retains its whiteness indefinitely, and is impervious to fumes that discolor ordinary flat whites.

Super Flow Flat White is made in white only but can be easily tinted to any desired shade as it takes tinting materials perfectly. However, where color is desired, eight pastel shades are found in KYANIZE Flat Wall Finish in which the same free flowing and easy working properties are found as in KYANIZE Super Flow Flat.

Specification—*New Unpainted Plastered Walls, Concrete, Wall Board, etc.*—After they are thoroughly dry shall first be primed with one coat of KYANIZE Seal Rite Surfacer. Second and third coats apply KYANIZE Super Flow White as it comes from the can. If there are evidences of "hot spots" on the walls, they shall first be treated with a solution of Zinc Sulphate in the proportion of 1½ to 2 lbs. of Zinc Sulphate to a gallon of water, and after this is dry, proceed as above.

Old Painted Surfaces—Wash thoroughly to remove any grease, dirt or grime, and especially Cold Water Paint if it has been used previously. Loose and scaling paint on walls shall be removed and crevices filled and evened up with Plaster of Paris. Touch up all bare spots with Seal Rite Surfacer and apply two coats of KYANIZE Super Flow Flat White as it is taken from the can.

High Gloss Surfaces—Shall be sandpapered to partially remove the gloss to provide a proper foundation and to give adhesion.

New Interior Woodwork—See Specification for KYANIZE Celoid Finish, substituting Super Flow Flat White for second and third coats.

Kyanize Enamel Undercoat

Especially made for use as the priming coats under high grade enamels. Works easily under the brush and dries with a non-porous surface that is readily sanded, providing a smooth, ridgeless foundation for the finishing coats of enamel. Should be used where an especially high grade enamel finish is desired.

Kyanize Floor Finish

A long-wearing, durable, waterproof floor varnish. Made to withstand rough usage on floors. Flows freely under the brush, and dries without the slightest trace of brush marks in 4 hours, leaving a clear, high lustre, transparent finish that will not scratch or mar white. KYANIZE Floor Finish, clear or natural, is pale in color and does not discolor the lightest floorings; also in colors such as American Walnut, Light, Golden and Dark Oaks, etc.

Specification—*Open Grain Woods: Oak, Ash, Walnut, Mahogany, etc.*—Surfaces of all floors must be sanded down to an even smoothness, filling the grain of the wood with KYANIZE Paste Filler colored to match the wood. Allow time to set, then rub off with burlap across the grain. In 24 hours, sand the surface with fine sandpaper.

Follow with three coats KYANIZE Floor Finish Natural, allowing 12 hours drying time between coats. The first coat may be thinned slightly with pure Turpentine in the proportion of ½ pt. to the gallon, the varnish to be applied in full flowing coats.

Close Grain Woods: Birch, Maple, Yellow Pine, etc.—Dispense with the application of the paste filler and proceed as above.

Kyanize Dull Floor Finish

A real waterproof and durable floor varnish with a rich soft velvety finish, more beautiful than wax, without its disadvantages, as KYANIZE Dull Floor Varnish is not a wax material; therefore free from slipperiness and does not spot white with water. Builds as well as KYANIZE Floor Finish. In fact, it is the same varnish only so made as to give it its rich characteristic sheen.

Specification—Refer to Specification for KYANIZE Floor Finish, substituting KYANIZE Dull Floor Varnish for last coat to be well flowed on.

Kyanize Floor Enamel

The ideal coating for floors where the solid color effect is desired. Especially good for cement floors as it forms a bond with the cement and gives a coating that is extremely durable for wear and waterproofness. Repeated washings do not injure its gloss.

Floors of basements, hospitals, dormitories, etc., are kept more sanitary and clean through its use. Also excellent for use for dadoes in public buildings. Made in twelve clear toned colors.

Specification—*Cement and Concrete Floors*—Shall be thoroughly dry, and newly laid cement or concrete shall first be treated with a solution of Zinc Sulphate in the proportion of 2 lbs. of Zinc Sulphate to 1 gal. of water to neutralize any alkali that may be present, and which is always in evidence on newly laid concrete. Allow it to dry thoroughly.

First Coat: Apply KYANIZE Seal Rite Surfacer full body as furnished by the manufacturer.

Second Coat: Apply KYANIZE Floor Enamel of the shade selected by the architect.

Third Coat: Same as above, allowing 24 hours to dry between coats.

Old Wood Floors—Shall be thoroughly cleaned with soap and water, well rinsed with clear water and allowed to thoroughly dry before painting. If wax has been applied previously, the wax shall be thoroughly removed by washing the floors with pure Turpentine to remove all trace of wax. Apply two coats of KYANIZE Floor Enamel of the shade selected by the architect, allowing 24 hours drying time between coats.

Seal Rite Surfacer

A primer and sealer for new plaster or cement surfaces: it prevents absorption and acts as a perfect primer for succeeding coats of flats, enamels, etc. On wood surfaces, including floors, it is an excellent sealer and first coater. Light in color, works freely under the brush, dries hard overnight and produces a tough, very durable and binding film.

Kyanize Interior Finish

A pale colored, free flowing, hard drying, high lustre varnish that will not scratch white. Dries dust free in 4 to 6 hours. Is extremely tough and elastic and will not crack or check. A most excellent varnish for hand rubbing or can be left in the gloss. One of the old time Kauri gum varnishes that has stood the test of years for high grade varnish finishing.

Specification—*For All Interior Trim*—Open Grain Woods: Sand the surface to an even smoothness, fill nail holes with putty, colored to match the wood. Fill the grain with KYANIZE Paste Filler, also colored to match the wood. Allow time to set, then rub off with burlap across the grain. In 24 hours sand the surface smoothly with fine sandpaper. Follow with three coats of KYANIZE Interior Finish, the first coat to be thinned with pure Turpentine in the proportion of ½ pt. to the gallon; second and third coats to be applied just as the varnish comes from the can. Allow a drying period of at least 24 hours between coats.

Close Grain Woods: Dispense with the application of Paste Filler and proceed as above.

Kyanize Quick Drying Spar

A Bakelite Varnish, the gum content being composed of 100% Bakelite gum—a truly phenomenal varnish for its waterproof qualities, and outstanding results are obtained through its use on exterior surfaces where a varnish finish is desired. Pale in color, free flowing, dries dust free in 3 hours and hard in 6 to 8 hours. Can be used for all interior work on which a high gloss finish is desired.

Specification—Refer to Specification for KYANIZE Floor Finish, substituting KYANIZE Quick Drying Spar Finish for the varnish coating.

Kyanize Aluminum Finish

An aluminum paint composed of pure aluminum metal in paste form and the highest grade of waterproof vehicle whose characteristics permit of maximum leafing of the metal and brightness of finish. Packed in double compartment cans to facilitate easy mixing on the job as all aluminum paint, if mixed for a long time before application, loses its brightness as well as some of its leafing properties.

By ROYAL BARRY WILLS

Write Department 801 for Measured Drawings of Cape Cod Cottage Details

SAMUEL CABOT, INC.

Manufacturing Chemists

141 Milk Street, BOSTON, MASS.

NEW YORK, N. Y., 101 Park Avenue
PHILADELPHIA, PA., 1419 Real Estate Trust Building
CHICAGO, ILL., 5000 Bloomingdale Avenue
MINNEAPOLIS, MINN., 827 South Second Avenue

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Creosote Shingle Stains.
Heavy Bodied Shingle Stains.
Creosote Bleaching Oil.
Interior Stains.
Stucco & Brick Stains.
Conservo Wood Preservative.
Flexiblac Protective Paint.
Collopake Combiner.
Casein Coating.

Samuel Cabot Inc

Cabot's Stains and Collopakes

Gloss Collopakes.
Double-White.
Old Virginia White.
Pastel Collopakes.
Deck & Floor Collopakes.
Roofing Collopakes.
White Collopake Enamel.
Aluminum Coating.

For Waterproofings, Stained Shingles, and Insulating "Quilt," see File Index.

CABOT'S CREOSOTE SHINGLE STAINS

For roof and side shingles, clapboards, siding, rough or smooth boarding, fences, and all outside woodwork and dressed lumber.

These celebrated stains, first made in 1882, revolutionized the art of exterior decoration. They have now been proved by over 50 years of continuous use in every climate. They are made with the strongest and purest mineral colors reduced to a microscopic fineness by the patented Cabot Collopaking Process.

The method employed breaks the colors up into much smaller particles than is possible with grinding alone. Colors are then colloidally dispersed in genuine especially refined creosote.

Beautiful Artistic Effects—These stains give soft, velvety colors to wood without hiding its texture. There is no gloss or shine and colors are guaranteed fast. As there are no two pieces of wood exactly alike, stains bring out the beautiful effects of grain and surface instead of masking them with a painty film.



House in Franklin, N. H.
Edward Sears Reed, Architect, Boston, Mass.
Roof and wall shingles stained and preserved with Cabot's Creosote Shingle Stains

Preserve the Wood—"Creosote is the best wood preservative known"—*Trautwein.* The 60% of especially refined, genuine creosote used in Cabot's Stains, usually doubles the life of the wood, protecting it from decay and ravages of insects.

Wholesome and Sanitary—Creosote has marked antiseptic and sanitary qualities. Cabot's Stains used inside and outside of stables and poultry houses, sheds, etc., will preserve the wood, destroy insects, parasites and disease germs, and make the premises sanitary and wholesome.

Specifications—Roof [wall shingles] [siding] [trim] shall be stained two [three] coats with Cabot's Creosote Shingle Stains, color to be selected by the architect. Woodwork shall be dry and clean before application. Stir stains thoroughly and keep well stirred while using. If more than one package is required, mix all together in one large container. Do not thin out. Apply with a broad, flat brush, like paint (or with a spray machine). (Shingles shall be dipped before laying.) Allow 24 hours between coats.

Covering Capacity—On shingles and rough wood: one brush coat, 150 sq. ft. per gal. Two brush coats, 100 sq. ft. per gal. Hand dipping and one brush coat, 2½ to 3½ gals. of stain per square of 16 or 18-in. shingles, 2 to 3 gals. per square of 24-in. shingles.

On smooth wood, 1 gal. covers from 200 to 350 sq. ft., two coats.

Stains Over Paint—Any of the darker, heavier colors go well over old paint but the "stain effect" is not possible over new solid coats of paint.

Paint Over Stain—Paint can be applied over Cabot's Creosote Stains, which make splendid priming coats because of their preservative action and prevention of mildew.

Please write us for Color Cards and Samples

Cabot's Heavy Bodied Shingle Stains

These stains differ from Cabot's Creosote Shingle Stains in that they produce more solid color effects. They are especially suitable for use on weathered and porous surfaces because of their great hiding power. They are made of pure pigments reduced to sub-microscopic fineness and colloidally dissolved in fixative oils (not creosote). The colors dry flat and do not have the "painty" look of ordinary oil stains.

Cabot's Creosote Bleaching Oil

For exterior shingles, siding and trim this produces exactly the same result as nature and gives shingles and woodwork the beautiful silver gray tone which results from many years of exposure to salt air at the seashore.

It produces this effect in from six to twelve months. A small amount of gray pigment gives a delicate gray tone from the first and as this wears off it is followed by the bleaching of the wood itself. It does this either on the coast or inland. The effect grows constantly better with age and no further treatment is necessary. The creosote preserves the wood from decay and also prevents mildew and blackening. Similar effects are obtained by using the Weathering Gray shades of Cabot's Creosote Stains.

Specifications and Covering Capacity—(same as for Creosote Stains.)

Cabot's Interior Stains

For interior woodwork Cabot's Interior Stains are a new type of non-creosote colloidal interior wood stains with a color penetration, making possible for the first time grays and other light shades that preserve the character and grain of the wood. Transparent and non-fading. Free from objectionable odor.

Specifications—Interior woodwork shall be stained with Cabot's Interior Stains, color to be selected by the architect. All woodwork shall be dry, clean and smooth before application. All nailholes and other marks shall be filled. Apply with large brush. Allow at least 24 hours between first and second coat. Finish with varnish [shellac] [wax].

Note: Handsome effects may be secured if left unfinished with or without rubbing down.

Covering Capacity—One gallon covers 300 sq. ft. on smooth wood and about one-half as much on rough wood.

CABOT'S COLLOPAKES—HOW THEY DIFFER FROM OTHER PAINTS

Cabot's Collopakes are made under Cabot's Process Patent No. 1662999 and Product Patent No. 1791119. This process gives them their special advantages over common ground paints of the usual type.

Collopakes are made of the same basic materials as first quality paints; they contain the same high grade pigments, and use for binders linseed and other fixative oils of the grades accepted as standard in the paint trade. They contain no water or other adulterants frequently found in cheap paints.

The Patented Cabot "Collopaking" Process begins by taking the best mineral and earth pigments and disintegrating them, by special treatment, into particles of colloidal size, 100 to 1000 times finer than the pigment particles in ordinary paints. This finely divided pigment is then kneaded into a stiff paste with a specially prepared fixative oil. This gives a very thorough and permanent dispersion. The paste is then blended with the proper proportions of fixatives and solvents.

The resulting Collopakes are not a *mixture,* in the ordinary sense, but a *colloidal solution*—as practically all the pigment is colloidally dispersed in the vehicle. Each pigment particle is surrounded by a strongly adhesive film of specially processed oil which is intimately amalgamated to its surface. As a result, each particle remains in suspension, so pigment and oil cannot separate.

Cabot's Collopakes, because they are truly colloidal and are not mixtures, have the following advantages:

(1) They do not settle hard in the can, and so require little stirring.

(2) They are more adhesive when properly applied to a dry surface. The pigment is pulled into the surface pores with the vehicle, amalgamating closely with the surface. This gives greater durability and resistance to wear.

(3) Collopakes are more waterproof because the minute pigment particles tend to plug the surface pores and keep them plugged.

(4) Because the particle size is so small, Collopakes have greatly increased hiding power, especially in the darker colors.

(5) Because of their colloidal nature, Collopakes have so much body that fillers to add body are entirely unnecessary. Paints using fillers are always subject to fading. The filler, though white when dry, is invisible when wet with oil. But as the oil dries out the filler inevitably shows up white again, causing graying and fading. Collopakes being free from filler do not tend to fade.

(6) The high surface tension automatically smooths off and levels out brush marks.

(7) Collopakes for outside use are made to dry hard less rapidly than most paints (and therefore do not disintegrate as rapidly). This avoids the bad effects of rapid drying and gives Collopakes a tough, flexible film, increasing their durability.

CABOT'S GLOSS COLLOPAKES

For Painting All Surfaces, Including Wood, Stucco, Brick, Cement and Metal

Cabot's Gloss Collopakes *are outside house paints* made by the patented Collopaking process, described above. They are distinguished from other paints by:

(1) Greater hiding power. Two coats of Gloss Collopakes hide as well as three coats of other paints.

(2) Longer lasting gloss. They keep their fresh, new look even under severe exposure.

(3) Smoother surface. They show no brush marks, and level out to produce an enamel-like finish.

(4) Longer life, because of their tough, flexible coating.

(5) Non-fading colors. Only pure pigments are used, so Collopake colors are permanent. This is especially significant in the Greens, Browns, and Blues.

Notes on the Colors

Our Gloss Collopakes are famous for their Greens, which are outstanding because they do not fade. Their fresh, lively colors do not change, and they are especially suitable for use at the seashore, being very resistant to salt air. The good qualities of the Greens are equally characteristic of all the other colors.

We manufacture Gloss Collopakes in a wide range of attractive tints. Standard shades include eight Greens, six Blues, four Browns, five Reds, five Grays, and six Creams, as well as Black and White. They are also offered in Old New England Colors, authentic shades of America's oldest houses, matched on the spot by our Color Research Division. Please write us for color cards showing the standard line of Gloss Collopakes, special cards of Greens, Browns, Reds, or Blues, and samples of the Old New England Colors.

Specifications

Exterior walls and [trim] [sash] [blinds] shall be painted with Cabot's Gloss Collopakes, two [three] coats, colors to be selected by the architect. Apply only to clean, dry surfaces. Stir thoroughly before using to insure complete solution.

No primer is needed. Thin with not over a quart of 50/50 mixture of linseed oil and turpentine per gallon only if necessary for proper brushing consistency.

Note: For cement walks and floors, please specify Cabot's Deck & Floor Collopakes.

Note: The Greens, Blues, Signal Red and bright Yellows must not be applied directly to fresh plaster, magnesite, or cement because of the free lime present.

Covering Power—On smooth surfaces, about 350 sq. ft. per gallon, two coats.

Please write us for Color Cards and Samples



Residence in Beaumont, Tex.
BEN E. IRBY AND HARRY R. WOODSIDE, Architects
Painted with Cabot's DOUBLE-WHITE, blinds with Cabot's Green Gloss Collopakes

Cabot's Old Virginia White

A soft, brilliant white for shingles, siding and other wood work; and for brick, stone and stucco.

It produces the "whitewash white" effect—as bright and clean and cool as new whitewash, as lasting as paint.

Old Virginia White is a Collopake which reproduces faithfully the desirable qualities of whitewash, but it is finer in tone and texture, easy to apply and clean to handle. It has a soft, brilliant tone, is without gloss, weathers well and is easily renewed. It is more transparent than paint; not hiding texture and character of the surface with an opaque coating, as paint does, but covering it like a heavy coat of whitewash.

Durability—From the first, Old Virginia White has had the most enthusiastic approval of architects. Many years' experience has proved not only that it is fully as durable as the best paint, but also that it retains its brilliant white tone with age.

Specifications—Exterior stucco [Brick] [Cement] [Stone] [Plaster] [Wood] [Shingles] shall be painted with Cabot's Old Virginia White, two [three] coats. Stir before using; do not thin. Apply only to clean, dry surfaces. Cement or plaster should be allowed to dry out thoroughly before being painted. Apply with a 4-in. flat brush, using a full brush and a flowing coat.

Shingles are to be dipped in Cabot's No. 1166 White Primer, and brush coated one [two] [three] coats with Cabot's Old Virginia White after laying.

Note: On sawed shingles use two coats. If dark woods are used, three coats may be necessary.

Covering Capacity—One gallon covers about 200 to 250 sq. ft., two coats, on smooth, dense concrete or brick; about 150 sq. ft. on good cement plaster, and 100 sq. ft. on very rough or porous plaster or shingles.

Cabot's Stucco and Brick Stains

For tinting and rainproofing stucco, cement, stone, plaster, brick, prepared roofing, and rough wood; and for renovating and restoring these materials when old and stained.

They do not mask the surface with a "painty" film but preserve the beauty of the original texture. They are made by the patented Cabot Collopaking Process, by which the pigments are reduced to sub-microscopic fineness, and colloidally dissolved in the vehicle. They thus have deeper and richer color values, finer texture and greater durability. They cost only about one-half as much as ordinary paints, flow on the surface more easily, are more quickly applied, and thus greatly reduce the over-all cost of painting. They will not crack, peel or scale, but weather softly and are easily renewed.

Specifications and Covering Capacity—Same as for Old Virginia White.

Cabot's DOUBLE-WHITE

For exterior use on wood, brick, stucco, cement or metal, DOUBLE-WHITE *is a brilliant, velvety, non-gloss white; combining maximum whiteness with great hiding power and wearing qualities.*

It is made by the patented Cabot Collopaking Process.

As compared to white lead and oil, DOUBLE-WHITE is much whiter, and has about 50% more hiding power.

It has a beautiful velvety texture and finish. It bonds with the surface *and does not crack or peel.* It retains its whiteness with age and is not affected by gases or light. Because of the way it is made, DOUBLE-WHITE lasts longer and requires painting less often.

Specifications—Exterior walls and [trim] [brick chimneys] shall be painted with Cabot's DOUBLE-WHITE, two [three] coats. Apply only to clean dry surfaces. Although DOUBLE-WHITE settles but slightly and the pigment never becomes hard, it is well to stir before using, in order to insure complete solution. For the first coat, thin with not over a quart of linseed oil per gallon of DOUBLE-WHITE. For the second coat, thin with linseed oil only if necessary for proper brushing consistency.

Covering Power—One gallon covers about 500 sq. ft., one coat; or about 300 sq. ft., two coats on dressed lumber.



House at Scarsdale, N. Y.
EDWIN M. LOVE, Architect
Painted with Cabot's Old Virginia White

Cabot's Pastel Collopakes

These paints give a truly smooth flat finish, and are meant for use on all interior surfaces, including wood, plaster, and metal.

Our Pastel Collopakes are manufactured by the patented Collopaking process, described on the previous page, which gives them several advantages not found in other interior paints.

Advantages—Show no brush marks. Collect less dirt. Have greater hiding power. Do not settle hard in the can. Have better priming and sizing properties and show less suction. Reflect more light. Are *washable* and *waterproof.*

Cabot's Pastel Collopakes make a very fine undercoat for enamel because of their freedom from brush marks, which makes very little sanding or rubbing down necessary.

Specifications—Interior walls and [ceilings] [woodwork] [ironwork] shall be painted with Cabot's Pastel Collopakes, colors to be selected by the architect. Apply only to clean, dry surfaces. *Do not thin* unless trial with a full brush after stirring vigorously shows thinning is necessary. Then thin slowly and cautiously with turpentine.

New plaster and other porous surfaces should first be treated with a mixture of one part of Cabot's Collopake Combiner with four parts of Pastel Collopakes.

Covering Power—About 500 sq. ft. per gal., one coat, depending on the surface.

Cabot's Collopake Combiner

This material is a transparent, waterproof, limeproof combining oil. Used by itself, it makes an excellent primer and sealer, and forms an ideal foundation for any paint. Mixed with any paint material, it gives a smoother and more durable finish. It should be used for reducing White Lead paste, instead of linseed oil, because it decreases brush marks and makes the paint last longer. It is very flexible, so that it stands up splendidly under severe outdoor exposure.

Please write us for Color Cards and Samples



Residence in Great Neck, L. I., N. Y.
EVANS, MOORE & WOODBRIDGE, Architects
Painted with Cabot's DOUBLE-WHITE, blinds with Cabot's Green Gloss Collopakes

Cabot's Deck and Floor Collopakes

For wood or concrete floors, for decks, porches, piazzas and piazza furniture, and for any surface subject to hard wear.

For these, no better paints can be found than Cabot's Deck and Floor Collopakes. They provide a hard, glossy, elastic enamel finish, which dries in 6 to 10 hours. They are manufactured by the patented Collopaking process, which makes them more durable, prevents fading, and gives them unique self-leveling properties, eliminating brush marks.

Those familiar with our Gloss Collopakes know that these outside paints are remarkable for their fresh, lively, non-fading colors. The same applies to our Deck and Floor Collopakes; despite hard usage, they keep their color, their gloss, and their lively, cheerful appearance. By proper combination of the necessary ingredients, they have been made very resistant to abrasive action and to the weather. They stand up well under harsh treatment.

Specifications—All floors, porches, steps, and stairways shall be painted with Cabot's Deck and Floor Collopakes, two [three] coats, colors to be selected by the architect. Be sure the surface is clean and dry before painting. Thin first coat about 10% to 20% with turpentine. Thin second coat only if necessary for proper brushing consistency. Allow 6 to 10 hours for drying (let the Collopakes dry overnight, if possible).

Covering Capacity—About 350 sq. ft. per gallon, two coats, on smooth wood.

Cabot's Casein Coating

A washable flat paint for use on all interior surfaces, including wood, plaster, stucco, brick, concrete, and metal. This paint has great hiding and covering power, dries rapidly, and gives a clean, bright finish.

Specifications—Interior plaster [wood] [metal] [brick] [concrete] [stucco] shall be painted with Cabot's Casein Coating, one [two] coats, colors to be selected by the architect. Mix one part of water with two parts of the paste in a rust-proof container, adding the water gradually while stirring thoroughly until proper brushing consistency is obtained. Do not use a wooden container, and in cold weather use warm water for best results. Be sure surface is clean and firm, and wash off old kalsomine and water-soluble substances. Use gasoline for removing oil or grease. Apply with a wide brush or spray-gun.

Covering Capacity—On smooth, dense surfaces, about 600 sq. ft. per gal., one coat; on rough, porous surfaces, about 250 sq. ft. per gallon.

Cabot's Roofing Collopakes

Our Roofing Collopakes are paints for every type of roof. They are especially adapted for asphalt shingles, asbestos shingles, slate, tile, and all kinds of prepared roofing.

As far as we know, they are the only paints that will stand up on these materials. Their basic ingredients are Cabot's Gloss Collopakes, the famous non-fading house paints. These are combined with a powerful and adhesive binder, which forms a tough, elastic coating on the surface and prevents bleeding through.

By binding firmly the little stone or slate particles which form the surface of prepared roofings, our Roofing Collopakes increase the life of these materials greatly. With untreated roofing, small particles are continually being scraped off by snow or ice, or breaking loose of their own accord. The firm grip of Roofing Collopakes prevents this, and therefore Collopake-treated roofs wear better.

Roofing Collopakes can also be used on wooden shingles, and they make excellent paints for metal. They require no expensive, troublesome primer, but can be put on right out of the can. They are especially effective on galvanized iron roofs, protecting the roofs against rust and giving them a refreshing touch of color.

Roofing Collopakes are offered in five attractive colors: Light Green, Dark Green, Tile Red, Dark Red, and Smoke Gray.

Specifications—All roofs and parts thereof (no matter what material they are made of), shall be painted with Cabot's Roofing Collopakes, two [three] coats, colors to be selected by the architect. Apply like paint, with a brush or spray gun. Do not thin the Collopakes. They have been carefully prepared to stand up on asphalt- or tar-treated materials, and thinning will weaken them.

Covering Capacity—About 125 to 175 sq. ft. per gallon, two coats, on the usual surfaced roofing; 400 sq. ft. per gallon on metal.



Skating Rink at Whalom Park, Fitchburg, Mass.
Roof painted with Cabot's Tile Red Roofing Collopakes

CABOT'S PRESERVATIVES

Cabot's "Conservo" Wood Preservative

Conservo is a penetrating wood preservative.

It goes deeply into the wood. It sterilizes the bacteria that produce decay and repels ants, borers, termites and all other wood-destroying insects and worms.

Use Conservo On—Roof rafters and sheathing; plank walks and flooring; fence posts, piles and poles; bridge and wharf timbers; conduits, culverts and silos; sluiceways and dams; ship and boat planking; sills, stringers and sleepers, and all heavy lumber exposed to rot.

Specifications—All woodwork (on the above list) shall be treated with Cabot's Conservo Wood Preservative, with brush [mop] [dipping]. Heat the Conservo for greater penetration.

Covering Capacity—One gallon covers 100 to 250 sq. ft. of surface, two coats, depending on character of wood and method of application.

Cabot's Flexiblac Protective Paint

An elastic gloss black protective paint for all kinds of iron and steel and other metal work exposed to rust and corrosion.

It forms a flexible non-scaling film which is proof against electrolysis and the action of nearly all acids and gases.

Specifications—All exposed iron and steel shall be painted with Cabot's Flexiblac, two [three] coats. Have surface dry and clean. Remove rust scales with scratch brush or scraper. Apply Flexiblac without heating or thinning.

Please write us for Color Cards and Samples

FOUNDED 1754

DEVOE & RAYNOLDS CO., INC.

Interior and Exterior Paints, Enamels, Stains, Varnishes, Lacquers
Special Finishes for Industrial and Maintenance Purposes

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DEVOE 2-COAT SYSTEM FOR EXTERIOR PAINTING*



First Coat

Devoe House Paint Undercoat provides *Controlled Penetration* in the first or priming coat. Available in three shades: White to go under white; Buff to go under creams, yellows, browns, reds; Gray to go under grays, blues, greens.

Spread—New or old work—450 sq. ft. per gal.



Finishing Coat

Devoe House Paint Finishing Coat contains specially processed oil for greater film toughness and selected pigments of unusually high hiding power to protect the vehicle from the ultra-violet rays of the sun.

Spread—Over undercoat—700 sq. ft. per gal.

Specifications—New Work

	Thinning Per Gallon	
Undercoat:	*Cool Weather*	*Warm Weather*
Soft wood.	¾ pint turpentine.	½ pint turpentine.
Hard wood.	1 pint turpentine.	¾ pint turpentine.
Finish Coat:	¾ pint turpentine.	½ pint raw linseed oil.

Specifications—Old Work

	Thinning Per Gallon	
Undercoat:	*Cool Weather*	*Warm Weather*
Surfaces in poor condition.	¾ pint turpentine and ½ pint raw linseed oil.	½ pint turpentine and ½ pint raw linseed oil.
Surfaces in good condition.	1 pint turpentine and ½ pint raw linseed oil.	¾ pint turpentine and ½ pint raw linseed oil.
Finish Coat:	¾ pint turpentine.	½ pint raw linseed oil.

Specifications calling for Devoe 2-Coat System for exterior painting instead of former 3-coat procedure saves material for one coat and labor of applying same.

On FHA construction two coats are permitted if undercoat and finishing coats conform to specific specifications. The Devoe 2-Coat System meets these requirements.



Before



After

Devoe 2-Coat System achieves almost unbelievable results as evidenced by these illustrations from unretouched photographs.

CEMENT AND STUCCO COATING*



Bay State Brick and Cement Coating has been specified for many years by architects all over the country. An outstanding product for all masonry, brick, stucco and concrete surfaces. Covers from 130 to 200 sq. ft. per gal., one coat, depending on porosity of surface.

See label for application directions.

Bay State Brick and Cement Coating is especially recommended for swimming pools.

**Products for 2-Coat System of Exterior Painting, as well as Bay State Brick and Cement Coating are manufactured and distributed by associated company, the* Wadsworth, Howland & Company, Inc., *Boston, Mass.*

JOSEPH DIXON CRUCIBLE COMPANY

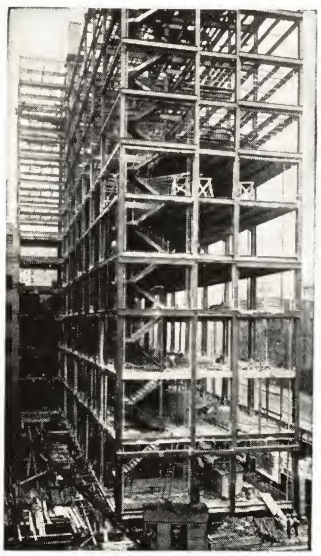
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For Structural Steel



For Water Tank



For Gas Holder

D X N
TRADE MARK

DIXON'S PAINTS

INDUSTRIAL PAINTS *(Flake Silica-Graphite)*—Red Lead Graphite Primer and colors.
ALUMINUM PAINTS—Bright Aluminum; Extra Brilliant Aluminum Bronze Powder; Heat-resisting Aluminum; Aluminum Sealer; Hi-Brilliant Aluminum Paste.
HEAT RESISTING PAINTS; MAINTENANCE FLOOR PAINTS; MACHINERY ENAMELS; SPECIAL COATINGS; DIXSPAR VARNISHES.
TECHNICAL and SPECIAL PAINT DEVELOPMENTS.

For over 100 years the business of the JOSEPH DIXON CRUCIBLE COMPANY has followed every ramification of graphite use with every known grade and form of graphite passing through its laboratories.

The company is, therefore, in position to select and use that kind of graphite best suited to any particular purpose. That this selection is made with the utmost care and with due regard to the purpose for which the graphite is intended is evidenced by the high character and quality of Dixon's products generally and the popularity of *Dixon's Paints* in widely diversified fields.

DIXON'S INDUSTRIAL PAINTS
(Flake Silica-Graphite)

How Dixon Discovered the Value of Flake Graphite as a Paint Pigment

Over eighty years ago, alterations in the mining plant of the JOSEPH DIXON CRUCIBLE COMPANY at Ticonderoga, N. Y., resulted in the removal of a large amount of good machinery. As it was necessary to store it out of doors and protect it from rusting, the superintendent proceeded to paint it with a mixture of oxide of iron and linseed oil. The supply of oxide giving out, he thought to use some of the *flake silica-graphite* which was a product of the plant.

Three years after, examination of the surface showed that, though still intact, the oxide of iron paint had become exceedingly dry and brittle, while the *flake graphite* paint had, to a wonderful extent, retained its original toughness and elasticity. *On many pieces the paint remained in good condition for eighteen years.*

We use today basically the same material used in this trial so long ago, and never have we found any cause to change our views as to its absolute superiority as a protective coating on wood and metal surfaces.

Flake Silica-Graphite Is Favored by the United States Department of Commerce

The United States Department of Commerce, Bureau of Mines, Information Circular No. 6123, May 1929, under caption "Pigments and Paints," commends the use of *flake silica-graphite* as a paint pigment because of its opacity and great resistance to deterioration. This statement literally substantiates the claims made by the JOSEPH DIXON CRUCIBLE COMPANY respecting wearing and protective qualities of Dixon's Industrial Paints in which the pigment used is *flake silica-graphite.*

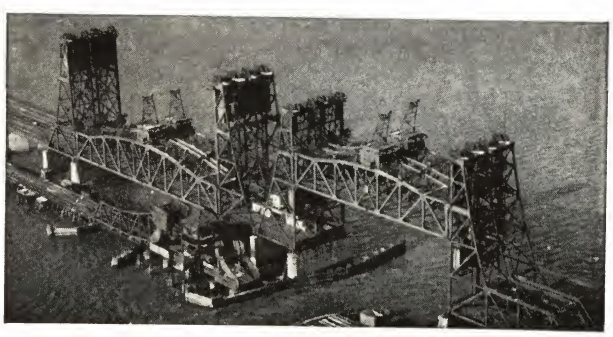
Properties of Flake Silica-Graphite

As a paint pigment, *flake graphite* is absolutely inert. It is not affected by the action of even the strongest acids or alkalis. It does not undergo any chemical change in use and will not affect the natural resiliency of the oil vehicle.

Natural *flake* graphite, however, needs something to give it "tooth" and brushing property and for that reason we call on the aid of *silica.* The peculiarity of Dixon's *Silica-Graphite* Paint is that the silica is mined with the graphite and is largely an integral part of the graphite itself.

Silica is sometimes used as a paint pigment but it has no covering power and is hard, rough and non-covering while graphite is soft, unctuous and opaque.

Combined, *silica* and *flake graphite* are two superlative paint pigments possessing in the greatest possible degree those most necessary characteristics—inertness and low specific gravity. But to be perfect, each needs just that amount of improvement which the presence of the other affords.



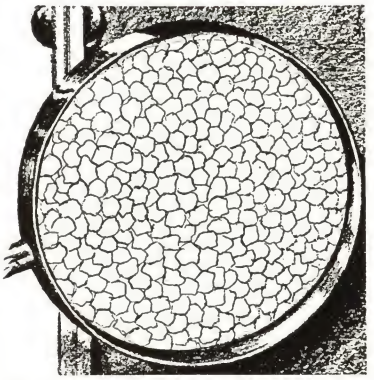
Newark Bay Bridge, Central R. R. of New Jersey

Why Dixon's Industrial Paints Provide Assurance of Lowest Cost Per Year of Service

These paints have a pigment of *flake silica graphite.* Of all paint pigments graphite, from the standpoint of conditions surrounding any paint job, is the most inert. It is entirely stable to all elements of chemical corrosion found in paint exposure. It is non-reactive to fumes, acids, cold, heat or the actinic rays of the sun. Plus this, *flake silica graphite* has the unique property of water repellency, due not alone to its unctuous character but to its flake structure as well. Cemented together by a tough elastic "skin" of pure boiled linseed oil, these flakes give to Dixon's Industrial Paints a striking resemblance to nature's own best protection against water—the scales of a fish.

The Dixon Company is the largest producer, importer and refiner of graphite. Graphite has a thousand and more uses, yet in every instance grade, fineness and properties of the graphite selected are determined by the needs and conditions to be met.

Aside from over 110 years of manufacturing experience, knowledge of graphite paint pigments accruing from extensive Dixon research projects plays an important part in the toughness and long life of Dixon's Industrial Paint. This experience and knowledge go into every gallon of paint processed by Dixon.



Flat Flakes of Silica-Graphite Overlap Like the Scales of a Fish

Cemented together by a tough elastic "skin" of pure boiled linseed oil, these flakes give to *Dixon's Industrial Paints* a striking resemblance to nature's own best protection against water—the scaled armor of a fish.

Where the Use of Dixon's Industrial Paint Is Recommended

For finishing outdoor metal and wood surfaces where unusual wear or climatic conditions present a disturbing maintenance problem. These paints are waterproof in the rigid sense of the word. Changes in temperature do not affect them.*

For Protecting—

Structural Steel	Coal Tipples
Water Conduits	Iron Fences
Grain Elevators	Lamp Posts
Roofs	*Smokestacks
Bridges	Marine Work
Boilers	Steel and Wood Barges
Gas Tanks	Condensers
Standpipes	Transformers
Oil Tanks	Excavating and Hauling Machinery
Tank Cars	
Water Tanks	Gas Holders

**The high heat resistance of Dixon's Paints has been recognized for generations.*

Covering Capacity

Dixon's Industrial Paints are strong in covering power and have a spreading capacity of 550 to 600 sq. ft. to the gallon.

For Color Chips, See Page 7

DIXON'S RED LEAD GRAPHITE PRIMER No. 101

Composed of red lead, *flake silica-graphite,* a high grade oxide of iron and tested boiled linseed oil. This primer meets all requirements because of its great adhesion to metal, its moisture repellency and its long life.

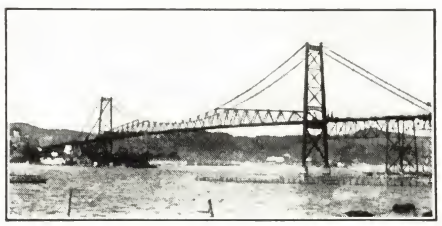
The unctuous quality of the *flake graphite* prevents "dragging" and destruction of brushes. Because of the nature of its pigment and vehicle, this primer will not become hard and brittle with resultant chipping and scaling, but retains its elasticity.

Having a covering capacity of about 575 sq. ft. to the gallon, it is most economical either from the standpoint of cost per gallon or cost per square foot year of service.

A metal surface finished with a coat of Dixon's Red Lead Graphite Primer No. 101, followed by two coats of Dixon's Industrial Paint *(flake silica-graphite)* will have the best of protection for an average period of 9 years, without renewal. It must be recognized, however, that this result in the individual case is subject to prevalent conditions.

Hundreds of testimonials submitted by engineers, chemists, contractors, etc., substantiate this claim.

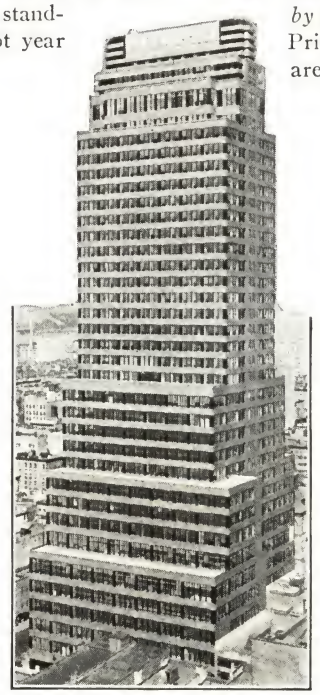
With many railroads whose paint selections are governed *by their own formulations,* Dixon's Red Lead Graphite Primer is the standard or the approved alternate, as are Dixon's Industrial Paints *(flake silica-graphite).*



Florianapolis Bridge, South America



Cooper River Bridge, Charleston, S. C.



McGraw-Hill Building, New York, N. Y.



Newark Bay Bridge, C. R. R. of N. J., Newark, N. J.



Suisun Bridge, San Francisco, Cal.

Dixon's Industrial Paints Protect the Structures Illustrated Above

DIXON'S ALUMINUM PAINTS

Dixon's Aluminum Paints have won general acceptance because of their brilliancy, waterproofness, long life and covering capacity. In these paints a tough marine spar varnish is used which is unexcelled for resistance to wear. Having excellent durability these paints render exceptional service combined with attractive appearance on exposed work of all kinds.

TYPES OF EQUIPMENT AND SURFACES FOR WHICH DIXON'S ALUMINUM PAINTS ARE RECOMMENDED

Gas Holders
Bridges
Hydrants
Grain Elevators
Iron Fences
Machinery
Mining Equipment
Trolley Poles
Smokestacks
Towers
Tank Cars
Oil and Gasoline Storage Tanks
Refrigerator Cars
Guide Frames
Lamp Posts
Generators
Silos
Purifiers
Pipe Lines



Derricks
Mail Boxes
Fire and Rolling Doors
Engine and Boiler Room Equipment
Steam Pipes
Laundries
Metal Sash
Structural Steel
Signs
Priming Coat on Wood
Marine Work
Grilles and Ornamental Iron
Interior Decoration
Window Frames
Roofs
Gutters
Leaders
Standpipes

Dixon's Bright Aluminum No. 113

(Ready Mixed)

The vehicle used is a waterproof marine spar varnish having great resistance to the elements, insuring life and brightness to the *straight aluminum pigment.*

This paint will not dull or discolor with the readiness of ordinary aluminum paints nor will its pigment precipitate as rapidly. Mixes easily at all times.

Dixon's Bright Aluminum No. 113-A

(Duplex Container)

This paint differs from Dixon's Bright Aluminum No. 113 only in the fact that the aluminum paste and the vehicle are furnished in separate compartments of duplex containers. Aluminum powder will be supplied in place of paste, if desired. Both pigment and vehicle meet all Federal and State specifications.

Dixon's Aluminum-Graphite Paint

Prepared with the same care as our other *flake silica-graphite* paints, it has established a reputation for quality and durability.

The pigment is flake aluminum and *flake silica-graphite.* The similar structure of the flakes permits them to lap one over the other like fish scales, forming a film of great elasticity and durability. So closely do they overlap that it is impossible for moisture to penetrate to the undersurface. The vehicle is the same as that used in Dixon's Bright Aluminum Paint.

Gases, acids, smoke and other deteriorating influences have practically no effect on Dixon's Aluminum-Graphite Paint. It is also highly resistant to the elements. Its unusual durability is due to the *overlapping of the flakes in a bond of durable spar varnish.* Because of the *flake graphite* component, it brushes easily and covers solidly in one coat. Supplied in two shades—*Light No. 111,* and *Dark No. 109.*

Dixon's Extra Brilliant Aluminum Bronze Powder No. 88

This product is guaranteed to be chemically pure and of the highest quality as an ingredient for paint and enamel. It meets the rigid specifications of Federal, State and Municipal departments and conforms in chemical analysis with A.S.T.M. standards (D-266-28T). Also Navy Department Specification 52-A1C, War Department Specification 3-44B and Federal Board TT-A-476.

We particularly recommend Dixspar Aluminum Vehicle as a mixing varnish with this powder. It is tough, elastic and waterproof and may be used on steel, wood, cement, and composition surfaces. Meets all Federal specifications, Further information concerning Dixspar Aluminum Vehicle will be found on page 8.

Heat Resisting Aluminum Paint No. 226-A

For metal surfaces where heat exceeds 375°F., No. 226-A provides a permanent, brilliant and attractive finish that will withstand rigors of intense heat up to 850° F.

Furnished in duplex containers—all sizes. Also in drums with aluminum pigment separate.

Dixon's Aluminum Sealer

A priming and sealing coat (clear) for plaster, brick, concrete, stucco and composition surfaces where an aluminum finish is desired.

Dixon's Aluminum Sealer stops suction and insures maximum satisfaction when used as an undercoat for Dixon's Bright Aluminum No. 113 or 113-A.

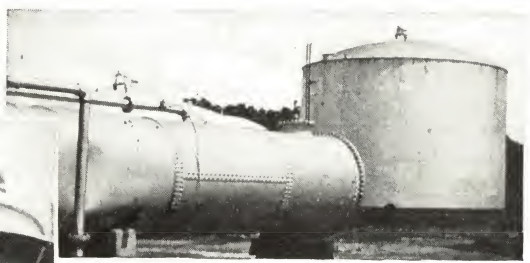
Dixon's Hi-Brilliant Aluminum Paste No. 400

Of extremely fine texture, this paste, when mixed with Dixspar Aluminum Vehicle, produces an unusually brilliant and solid covering paint.

Hi-Brilliant Paste has distinct advantages over aluminum powder from the standpoint of brilliancy of finish, economy and sanitation.

Dixon's Aluminum Paint in the Oil and Gas Industry

The use of Dixon's Aluminum Paints has become standard practice with many of the foremost companies in this field. The value of aluminum as a protective paint and its ability to lessen evaporation losses thru heat deflection is well established. This was conclusively demonstrated by the results (shown below) of a test recently conducted by a leading oil company of Texas.







Medium	Rise in degrees, F.
Tin Plate	19.8
Aluminum Paint (Varnish Vehicle)	20.5
Aluminum Paint (One-half lead or zinc and one-half aluminum powder)	20.8
White Paint	22.5
Light Cream Paint	23.0
Light Pink Paint	23.7
Light Blue Paint	24.3
Light Gray Paint	26.3
Light Green Paint	25.6
Red Iron Oxide	29.7
Dark Prussian Blue	39.9
Black Paint	54.0

In addition to very important savings achieved through reduced evaporation, Dixon's Aluminum Paints provide an attractive appearance and insure long life to the equipment.

SPECIFICATIONS FOR USE OF DIXON'S INDUSTRIAL PAINTS
(Flake Silica-Graphite and Aluminum Paints)

These specifications, based on our experience of over 80 years in the manufacture of metal paints, are placed before architect and engineer with assurance that in adopting them, they may feel confident of satisfactory results.

Dixon's Industrial Paints *(flake silica-graphite)* are recognized the world over for durability and in specifying them the architect or engineer insures for his client protection of the steel and iron work at minimum maintenance cost.

It is significant that the General Specification issued by the Treasury Department April 2nd, 1934, provides for use of *flake silica-graphite* paint for protection of structural steel; also, that of the War Department in Specification No. 3-49A, May 29, 1934, requiring use of *flake silica-graphite* paint for protection of structural steel and iron surfaces.

SPECIFICATION INDEX

Steel Bridges .....*No. 1*
Structural Steel .....*No. 2*
Bright Aluminum on Exposed Interior or Exterior Steel Surfaces.....*No. 3*
Miscellaneous Iron, Ornamental Iron, Steel Partitions, Steel Windows, Kalamein Work, etc.....*No. 4*
Bright Aluminum for Walls, etc.....*No. 5*
Water Tanks, Smokestacks, Gas Holders, Power Plant Equipment, etc.....*No. 6*
Wire Work .....*No. 7*
Maintenance Painting .....*No. 8*

(For Color Chips, see page 7)

General Conditions

Materials—All paint materials shall be delivered to the building site in the original unbroken containers bearing the manufacturer's stamp or label thereon.

The top of the container shall be removed only on the site of the work, and the paint properly stirred before being used.

The use of adulterants at any stage of the work is strictly prohibited, nor shall materials be thinned or changed in any way other than specified.

Workmanship—All materials shall be applied by skilled mechanics. Paint shall be evenly spread and thoroughly brushed out. All workmanship shall be executed in accordance with the best practices.

All surfaces to be painted shall be dry and free from rust, dirt, cement, grease, oil, scale, and other foreign matter.

No paint shall be applied until the preceding coat is thoroughly dry.

Specification No. 1

Steel Bridges

Shop Coat—All steel work, including iron and cast steel, shall be thoroughly cleaned of all scale, rust, dirt, grease and other foreign substances and shall be given a shop coat of Dixon's Red Lead Graphite Primer No. 101. Where surfaces of riveted work come in contact they shall be painted with the same material before being assembled.

Field Coat—After erection all damaged surfaces of shop coat, all shop marks, rivets, bolts, etc., shall be touched up with Dixon's Red Lead Graphite Primer No. 101. A first field coat of Dixon's Industrial Paint of [*approved color*] shall then be applied. After the first coat is thoroughly dry, a second field coat of Dixon's Industrial Paint shall be applied of [*approved color*], a different shade to be observed between coats to insure proper coverage.

Specification No. 2

Structural Steel

Shop Coat—All structural steel work before leaving the shop shall be cleaned of all scale, rust, dirt, grease or other foreign substances and shall be given one shop coat of Dixon's Red Lead Graphite Primer No. 101. Where surfaces of riveted work come in contact they shall be painted with the same material before being assembled.

Field Coat—After erection all damaged surfaces of shop coat, all shop marks, rivets, bolts, etc., shall be touched up with Dixon's Red Lead Graphite Primer No. 101, and then all encased surfaces of the steel work shall be given a coat of Dixon's Black Paint *(Alkali Resisting)* No. 333.

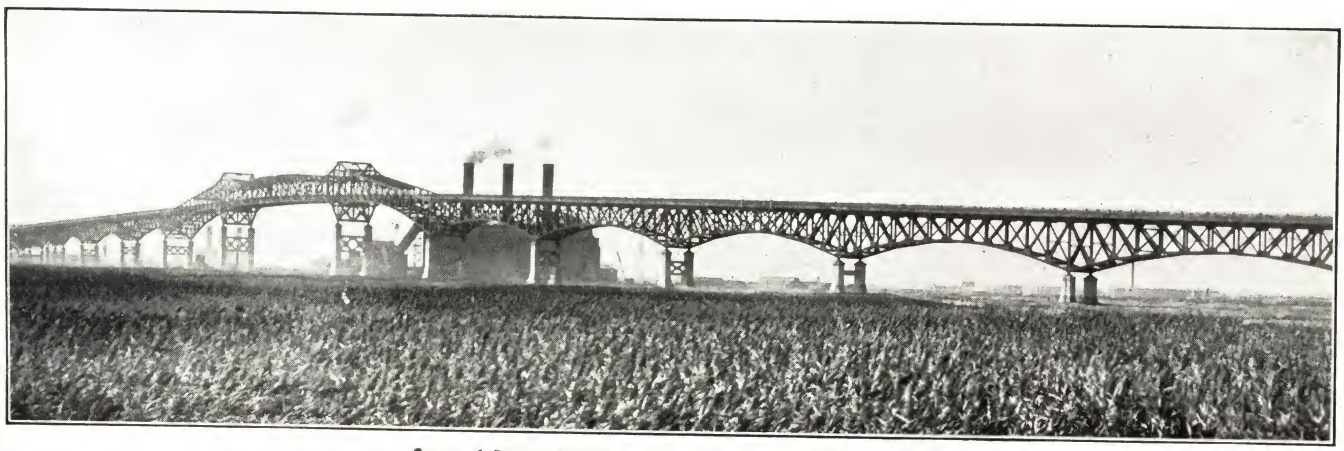
Miscellaneous—All grillage shall receive one coat of Dixon's Red Lead Graphite Primer No. 101, followed by one coat of Dixon's Black Paint *(Alkali Resisting)* No. 333 before setting.

Specification No. 3

Bright Aluminum on Exposed Interior or Exterior Steel Surfaces

Shop Coat—All steel work before leaving the shop shall be cleaned of all scale, rust, dirt, grease or other foreign particles and shall be given one shop coat of Dixon's Red Lead Graphite Primer No. 101. Where surfaces of riveted work come in contact they shall be painted with the same material before being assembled.

Field Coat—After erection all damaged surfaces of shop coat, all shop marks, rivets, bolts, etc., shall be touched up with Dixon's Red Lead Graphite Primer No. 101, and then all surfaces of steel work shall be given two coats of Dixon's Bright Aluminum No. 113 *(ready mixed)* or Dixon's Bright Aluminum No. 113-A *(pigment and vehicle separate)*.



Span of Route 25 Bridge Over Hackensack River, N. J.
Primed and finished with Dixon's *Silica-Graphite* Paints

Specification No. 4

Miscellaneous Iron, Ornamental Iron, Steel Partitions, Steel Windows, Kalamein Work, Etc.

General—Before shop coat is applied, all steel and iron work shall be thoroughly cleaned of all scale, rust, dirt, grease or other foreign particles. Before the field coat is applied all damaged surfaces of shop coat, all shop marks, rivets, bolts, etc., shall be retouched with the same material used for shop coat, which is to be Dixon's Red Lead Graphite Primer No. 101.

Miscellaneous Iron—All miscellaneous iron work, such as steel lintels, steel bucks, anchors, brackets, etc., shall receive one shop coat of Dixon's Red Lead Graphite Primer No. 101, and one field coat of Dixon's Industrial Paint of [*approved color*].

Ornamental Iron—All ornamental iron, such as railings, fencing, window grilles, flagpoles, etc., shall receive one shop coat of Dixon's Red Lead Graphite Primer No. 101, and one field coat of Dixon's Industrial Paint of [*approved color*].

Steel Partitions—Steel partitions, such as metal toilet partitions, etc., shall receive one shop coat of Dixon's Read Lead Graphite Primer No. 101, and two coats of Dixon's Olive Green No. 110.

Steel Windows—Steel windows shall receive one shop coat of Dixon's Red Lead Graphite Primer No. 101, and one field coat of Dixon's Industrial Paint of [*approved color*].

Kalamein Work—All kalamein work shall receive one shop coat of Dixon's Red Lead Graphite Primer No. 101 and one field coat of Dixon's Industrial Paint of [*approved color*].



Painting the Menai Bridge with Dixon's Industrial Paint

This old English suspension bridge carries the Holyhead road from Bangor over the Menai Straits in North Wales. Designed by T. Telford and completed in 1826, it serves to perpetuate the fame of this pioneer bridge builder, and it is significant that *Dixon's Industrial Paint* has again been chosen to protect it against the elements

Specification No. 5

Dixon's Bright Aluminum for Walls, Etc.

Note: Dixon's Bright Aluminum No. 113 is highly recommended for the interiors of *workrooms* and *industrial buildings* because of its light reflecting qualities. It does not tarnish, is not affected by fumes, and can be washed with soap and water.

Priming Coat—All plaster (or concrete) surfaces of walls, columns and ceilings shall receive a coat of Dixon's Aluminum Wall Sealer.

All metal surfaces shall be primed with Dixon's Red Lead Graphite Primer No. 101.

Aluminum Coats—After the wall sealer has been allowed sufficient time in which to dry hard and tack-free all plastered (or concrete) surfaces of walls, columns and ceilings and all wood and metal trim and doors shall be painted with two coats of Dixon's Bright Aluminum No. 113.

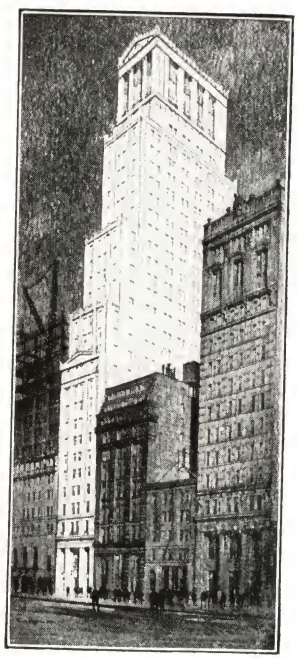
Specification No. 6

Water Tanks (Exteriors)*, Standpipes, Smokestacks,* Gas Holders, Power Plant Equipment, Etc.

Shop Coat—All steel work, including cast iron and cast steel, shall be thoroughly cleaned of scale, rust, dirt, grease and other foreign substances and shall be given one shop coat of Dixon's Red Lead Graphite Primer No. 101.

Where surfaces of riveted work come in contact they shall be painted with the same material before being assembled.

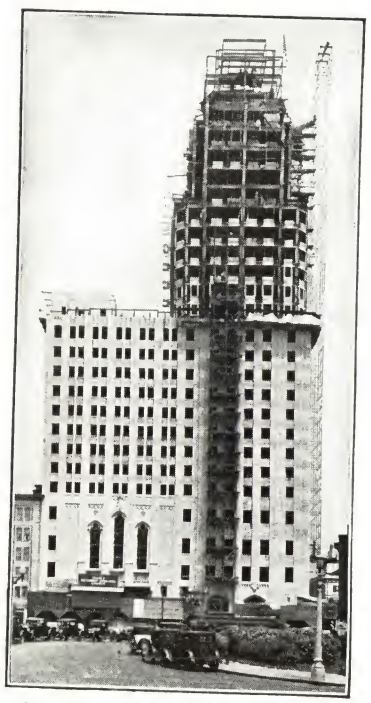
*See page 6 for Water Tank Interiors and note on Smokestacks.



National City Company, New York, N. Y.
McKim, Mead & White, Architects
Geo. A. Fuller Co., Contractors



Equitable Trust Company, New York, N. Y.
Trowbridge & Livingston, Architects
Thompson, Starrett Co., Contractors



Hotel and Temple M. E. Church, San Francisco, Cal.
Lewis P. Hobart, Architect
McClintic-Marshall Co., Contractors

For Color Chips, see page 7

Field Coat—After erection all damaged surfaces of shop coat, all shop marks, rivets, bolts, etc., shall be touched up with Dixon's Red Lead Graphite Primer No. 101. A first field coat of Dixon's Industrial Paint of [*approved color*] shall then be applied. After the first coat is thoroughly dry, a second field coat of Dixon's Industrial Paint shall be applied of [*approved color*], a difference in shade to be observed between coats to insure proper coverage.

Water Tank Interiors: The Dixon system of painting water tank interiors, devised 75 years ago, comprises a first (priming) coat of Dixon's Dark Red No. 103 followed by one coat of Dixon's Natural No. 107. These paints are non-toxic, tasteless, non-discoloring and waterproof, prerequisites if the tank is to contain potable water. (*Exteriors and Towers,* see Specification No. 1.)

Note: For smokestacks and other heated surfaces we recommend Dixon's Black No. 108, or Dixon's Natural No. 107. Both paints will effectively withstand heat. In repaint work two coats are required for best results, and on new work, three coats, including the priming coat (Dixon's Red Lead Graphite Primer No. 101). If the heat exceeds 350° F., Dixon's Heat Resisting Black-"Formula A" is recommended.

Specification No. 7
Wire Work

All uncoated wire work, including frames, fixtures, etc., shall receive one coat of Dixon's Red Lead Graphite Primer No. 101, and two coats of Dixon's Bright Aluminum No. 113.

All galvanized iron wire work shall receive one coat of Dixon's Red Lead Graphite Primer No. 101 and two coats of Dixon's Bright Aluminum No. 113.

Specification No. 8
Maintenance Painting

Cleaning—All broken or blistered paint, all rust, grease and dirt, must be removed by wire brushes, scrapers, blow-torch, or by sandblasting with fine sand. *(The method to be selected and made part of the contract.)*

Repainting—After this preparatory work, exposed parts of the surface to be primed or "spot-coated" (*as the condition may warrant*) with Dixon's Red Lead Graphite Primer No. 101. All surfaces shall then be given one coat of Dixon's Industrial Paint of [*approved color*]. The second coat to be applied when the first is thoroughly dry and to be different in color to insure proper coverage. Surfaces must be perfectly dry when painting is in process.

Galvanized Iron or Tin Roofing—Before Dixon's Industrial Paint is applied to a new galvanized iron roof, the surface should be thoroughly scoured with a solution of sal-soda. When dry, a first coat of Dixon's Red Lead Graphite Primer No. 101 should be applied, followed by a second and third coat of Dixon's Industrial Paint of [*approved color*].

Note: The same qualities which make Dixon's Industrial Paints so efficient for other exposed surfaces account for their great protection to roofs—a chemically inert pigment and a linseed oil vehicle. We recommend three coats for new metal roofs—the first coat to be Dixon's Red Lead Graphite Primer No. 101 followed by two coats of Dixon's Industrial Paint. On previously painted metal roofs, two coats of Dixon's Industrial Paint is sufficient.
This paint is also suitable for canvas and shingle roofs. Where shingles are dry, they should receive a first coat of linseed oil, otherwise they will quickly absorb oil from the paint, leaving the pigment without sufficient binding material. Use Dixon's Light or Dark Green for beautifying effect or Dixon's Natural Color for slate effect.

A FEW STRUCTURES ON WHICH DIXON'S INDUSTRIAL PAINTS WERE USED

Dixon's Industrial Paints have been successfully used in all climates. They have withstood the rapid temperature changes of the Atlantic States and the Middle West and have been used with equally good results in the dry areas of the South and Far West.

The following list of a few prominent buildings in various cities over a wide area, attests the confidence placed in Dixon products by leading American architects and engineers.

They are backed by a reputation gained through more than 80 years of paint making and are accorded recognition for their long-lasting qualities and for their low cost per year of service.

We have prepared an interesting booklet containing the names of hundreds of buildings—*commercial, industrial* and *governmental* structures—on which Dixon's Paints are used. A copy will gladly be furnished on request.

ALBANY, N. Y.
Ten Eyck Hotel and Addition

ALLENTOWN, PA.
Y. M. C. A. Bldg.

ATLANTA, GA.
Atlanta Terminal
Southern Bell Tel. & Tel. Co. Bldg.

BALTIMORE, MD.
Baltimore City Docks
Fidelity Title & Trust Co. Bldg.
First National Bank Bldg.
C. R. Ross & Co. Warehouse
Trinity Church

BAYONNE, N. J.
American Radiator Co. Plant
Babcock & Wilcox Co. Plant

BETHLEHEM, PA.
Bethlehem Steel Co. Bldgs.

BOSTON, MASS.
Boston Terminal Trainshed
Copley-Plaza Hotel
Shawmut National Bank Bldg.

BROOKLYN, N. Y.
Bush Terminal Bldg.
N. Y. Dock Co. Warehouse
St. George Hotel
Williamsburg Trust Co. Bldg.

BUFFALO, N. Y.
New York Telephone Bldg.
State Normal School Bldg.

CAMDEN, N. J.
Victor Co. Building No. 7
Y. M. C. A. Bldg.

CHARLESTON, S. C.
Union Station

CHICAGO, ILL.
Field Building
Fair Department Store
Marshall Field Co. Warehouse

CLEVELAND, OHIO
City Hall
Willys-Overland Co. Bldg.

GALVESTON, TEX.
Tyler High School

HACKENSACK, N. J.
Public Service Bldg.

JERSEY CITY, N. J.
Hudson County Court House
Colgate Bldg.
National Grocery Co. Warehouse

NEWARK, N. J.
American National Bank Bldg.
City Hall
Normal School Bldg.

NEW YORK, N. Y.
Over 150 prominent structures

PHILADELPHIA, PA.
N. W. Ayer & Son Bldg.
Link-Belt Co. Bldg.
Ritz-Carlton Hotel
West Philadelphia Armory

PITTSBURGH, PA.
Oliver Iron & Steel Co. Bldg.
Victoria Theatre
Wabash & Pittsburgh Train Shed and Terminal Bldgs.

SAN FRANCISCO, CAL.
State Capitol Bldg.
J. A. Roebling & Son's Bldg.
Wells Fargo Express Co. Bldg.

(An additional list of 850 well known buildings protected with Dixon's Paints will be forwarded on request)

DIXON'S HIGH HEAT RESISTING PAINTS

Recommended for metal surfaces where heat exceeds 350° F. Dixon's Hi-Heat Resisting Paints are made in four service colors only—*Heat Resisting Black, Gray HR, Aluminum-Graphite HR and Aluminum No. 226-A.*

It is not possible to produce a wide color range in paints of this type all with equal durability and color permanence. Hence, the limited selection of three somber shades and one brilliant aluminum.

Should you be confronted by special or technical difficulties, it is suggested that you communicate with our Paint Sales Division, Engineering Dept., outlining your problem. Recommendation will gladly be made.

DIXON'S MACHINERY ENAMELS

Made for rough "heavy duty" service. The pigments are ground in paste form in steel roller mills until perfect enamel fineness has been achieved. The vehicle is a full-bodied Bakelite varnish which, when mixed with the paste color pigment, produces a solid covering one-coat enamel of great toughness as well as smoothness.

These enamels are unaffected by water, oils, grease or the caustic soaps and compounds usually applied in cleaning.

They are resistant to fume and acid conditions.

Vibration does not reduce their long-wearing qualities.

Dixon's Machinery Enamels are recommended for machines and all types of operating equipment, as well as for pipe lines, fireboxes, hydrants, radiators, etc.

Made in 10 standard shades (color chart on request) which permits a broad selection for color schemes and identification markings. Special shades to order.

Note: For surfaces having a heat in excess of 350° F. Dixon's Hi-Heat Resisting Paints, described above, should be used.

DIXON'S INDUSTRIAL PAINTS


Red Lead Graphite Primer—No. 101


Standard Oxide Red—No. 114


Dark Red—No. 103


Extra Light Gray—No. 102


Battleship Gray—No. 104


Medium Gray—No. 105


Light Gray—No. 106


Dark Gray (Natural)—No. 107


Black—No. 108


Extra Light Green—No. 115


Light Green—No. 110


Dark Green—No. 112


Aluminum-Graphite (Dark)
No. 109


Aluminum-Graphite (Light)
No. 111


Bright Aluminum
No. 113—Ready-mixed
No. 113A—Duplex Container

DIXON'S MAINTENANCE FLOOR PAINTS


Dustproof


Mahogany Red


Tile Red


Light Gray


Rich Brown


Oak


Dark Gray


Special Tan


Standard Green

DIXSPAR VARNISH



Inches 1 2 3 4 5 6 7 8
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
Centimetres
TIFFEN® Color Control Patches © The Tiffen Company, 2007
Blue Cyan Green Yellow Red Magenta White 3/Color Black

DIXON'S MAINTENANCE FLOOR PAINTS

All-purpose Floor Enamels

Dixon's Maintenance Floor Paints are all-purpose enamels for use on

Concrete	*Linoleum*
Composition	*Wood*

in factories, garages, hotels, public buildings, steamships, hospitals, laboratories, railway cars and every place where a protective durable floor coating is required.

They are designed for maximum durability, the special vehicle used being properly balanced to give this result.

These paints are solid covering and heavy bodied so that a satisfactory job can be had in a two-coat operation.



Prevent "Dusting" of Cement Floors

Dixon's Maintenance Floor Paints withstand the disintegrating action of the alkali in cement and concrete and effectually prevent "dusting."

They are not affected by hot, cold, fresh, salt or soapy waters, oil, alkali or dirt, and give service over a long period despite severe conditions and extraordinary wear.

They dry in six to eight hours, thereby facilitating work which heretofore has been subject to irritating delays because of slow drying paint.

Colors

Mahogany Red	Dustproof	Dark Red
Special Tan	Light Gray	Tile Red
Standard Green	Rich Brown	Oak

See Color Chips page 7

For Inside or Outside Use

Dixon's Maintenance Floor Paints may be used inside or outside and are particularly adapted to withstand the rigorous action of climatic changes, sleet, rain and salt water to a remarkable degree.

Because of their "all-purpose" characteristics Dixon's Maintenance Floor Paints have met the rigid standards of the marine trade which may be taken as an indication of their excellent quality.

They have also found unqualified acceptance in the industrial and railroad fields where service conditions are, as a rule, particularly severe.

Specifications

[All cement floors, steps, platforms and wall bases] [All composition floors, steps, platforms and wall bases] [All wood floors] shall receive two coats of Dixon's Maintenance Floor Paint, of [*approved color*].

All surfaces to be painted shall be thoroughly cleaned before the paint is applied.

Note: To insure satisfactory performance, Dixon's Maintenance Floor Paint should not be applied to cement surfaces until at least three months after installation. A cement surface must be thoroughly dry for best results.

DIXSPAR EXTERIOR AND FLOOR VARNISHES AND ALUMINUM VEHICLE

Dixspar Bakelite Varnish

Drying in three to four hours, this varnish has durability, water-proofness and alkali resistance unequalled by any of the old time "oil" varnishes. Its toughness and immunity to abrasive action represents an advance beyond the highest standards known to the paint industry until very recently.

Its resistance to foot-traffic, brine, boiling oil and water gives rare testimony to its remarkable qualities as an all-purpose varnish.

This varnish may be used on boats, floors, table tops or on any other surface where durability is a factor. Used as an aluminum vehicle it assures maximum protection and attractiveness.

Dixspar Exterior Varnish

A quality varnish unsurpassed for durability and waterproofness, Dixspar Exterior is extremely elastic and its use is especially recommended on outdoor surfaces that are subjected to rigorous climatic conditions or wear.

It will provide a tough protective film on boats, table tops, floors (where rapid drying is not essential), exposed signs, porch ceilings (wood), sporting equipment, etc.

Directions for Use—Dixspar Exterior flows out smoothly and freely requiring very little brushing, permitting the application of a heavy coat. It is sufficient to draw the brush over the surface two or three times in opposite directions; the final stroke being lengthwise with the panel or grain of the wood.

When used outdoors, Dixspar Exterior should not be applied over shellac. If the surface requires "filling" a good oil or varnish filler should be used, followed by two coats of Dixspar Exterior.

New Woodwork—Apply filler of desired color and follow with two full coats of Dixspar Exterior, allowing 12 to 15 hours between coats for thorough drying.

Close Grained Woods (New)—Fill with oil or varnish filler and follow with two full coats of Dixspar Exterior allowing 18 to 20 hours between coats for drying.

For Stain Work—Apply stain to the natural wood and after it is thoroughly dry, smooth down with fine steel wool and apply two coats of Dixspar Exterior.

For Velvet or Eggshell Finish—On all such work as previously described on which a velvet or eggshell finish is desired, allow the final coat of Dixspar Exterior 48 hours for drying, and rub down with pumicestone and water. If a polish is desired, use rottenstone and oil, but wait until several days have elapsed before this final operation—this permits the film of Dixspar to dry stone hard.

Dixspar Floor Varnish

Dixspar Floor, in addition to being rapid drying, has excellent waterproof qualities and provides adequate protection even where the surface undergoes hard usage. It withstands heavy foot traffic and it is this characteristic that recommends Dixspar Floor for use on trim, furniture, linoleum, doors and natural wood surfaces throughout the building.

Directions for Use—Dixspar Floor should not be applied before the surface has been properly cleaned and all dust, dirt or foreign substances removed. A good clean brush with these precautions taken will insure satisfactory results.

New Floors—After filling with an oil or varnish filler of the desired color, apply two coats of Dixspar Floor allowing 4 to 6 hours for thorough drying between coats.

Old Floors—If in fair condition, the application of one coat of Dixspar Floor will renew the original finish and give desired results. If the surface is badly worn, the fragments of the old finish should be removed with a steel scraper and a filler used, followed by two coats of Dixspar Floor.

Dixspar Floor requires no thinning.

Dixspar Aluminum Vehicle

Dixspar Aluminum Vehicle is sufficiently heavy in body to carry up to 2½ lbs. of aluminum powder per gallon and hold it in suspension. For best results, however, an admixture of 1¾ to 2 lbs. of aluminum powder or paste per gallon is recommended. An aluminum paint made with this tough varnish may be used on metal or wood surfaces and will give the most durable of results on exteriors of gas holders, oil and gasoline tanks, transformers, fire escapes, in plant maintenance and similar usages.

The high quality of Dixspar Aluminum Vehicle can be determined by the fact that it passes the standards of the Navy Department, the War Department (Panama Zone), the Aluminum Company of America, conforms to Specification TT-V-81 of the Federal Specification Board, and others of high authority.

E. I. DU PONT DE NEMOURS & COMPANY, INC.

FINISHES DIVISION

A Du Pont Finish for Every Surface

WILMINGTON, DEL.

Du Pont is one of the world's largest chemical manufacturers. In du Pont laboratories, trained and practical research men of long experience develop—and discard—thousands of formulas before they are satisfied that the du Pont standards of quality have been met.

DU PONT
REG. U.S. PAT. OFF.

In addition to the careful testing of raw materials and control through every step of manufacture, du Pont maintains "Paint Farms" in every section of the country. Here Du Pont Finishes must pass their final practical test for resistance to the savage attacks of weather. Then, too, du Pont paints have been applied to hundreds of "test houses" in various sections. Here Du Pont Finishes are applied by master painters under average conditions found in the field. These houses are examined periodically by highly skilled paint men. This is the foundation of du Pont quality on which you as an architect or contractor, can stake your reputation.

The du Pont representative and the du Pont dealer in your territory are qualified to give helpful advice on any painting problems which may arise. Get in touch with them or write direct to the address given above. The local du Pont dealer will gladly furnish complete color cards and any other information you may desire.

SPECIAL NOTES

In the specifications for the various surfaces on the following pages, we give our selection of highest quality recommendations first, followed by "alternates" which may be used where you might prefer another type of material (Paste vs. Ready-Mixed products; Enamels vs. Varnishes, etc.), or where initial cost of materials is a major factor.

DU PONT LABELS SHOW COMPLETE APPLICATION DIRECTIONS

Since no one brief set of thinning and application directions would best apply for all jobs, we have incorporated comprehensive details on these essential points on all du Pont labels. By having your specifications read "Applied as per label directions" (see "General Painting Specifications") you safely assign these responsibilities to the manufacturer and to the contractor, and prevent complicating your specifications with uncertain details.

SPECIFICATIONS GIVEN FOR NEW SURFACES ONLY

In the specifications following, detailed recommendations are given for new surfaces. In the case of refinish or repaint work where the previous coatings are in fit condition for repainting, the same finishing coat recommendations may be used, merely eliminating the first or priming coat. For the purpose of clarity, however, the following suggestions are offered in connection with repainting work:

REPAINTING WORK

All surfaces should be clean, dry, and thoroughly sanded. Exterior surfaces should be wire brushed. This preparation of the surface assures good adhesion of the subsequent coats and is especially essential when repainting over previously applied glossy finishes, such as enamels, varnishes, hard drying exterior paints, etc.

All bare or badly worn sections should be "spotted in" with recommended primers or undercoats. In applying enamel over a previously enameled surface, it is general practice to use an enamel undercoat over the old surface. Generally speaking, prepared undercoats adhere to previous coatings better than enamel coats applied direct to old enamels.

Most Du Pont Paint Products come in a wide range of colors. Any of these colors may be specified with confidence. In addition, Du Pont Pre-Tested Finishes may be tinted with Du Pont-Harrison Brand Oil Colors. However, care should be exercised to see that the amount of oil color used is not in excess of that recommended on the label.

GENERAL PAINTING SPECIFICATIONS

To provide a clear understanding, the following "General Painting Specifications" should be inserted as a prelude and as part of all Du Pont Paint Specifications.

All paint materials shall be thoroughly stirred or agitated until the various ingredients are completely intermixed.

No exterior painting shall be done in rainy, damp or frosty weather or until the surface is thoroughly dry.

No interior painting or finishing shall be done until the building has been thoroughly dried out by artificial heat.

(*Note to Architect*: It is important that new plaster, cement, concrete, etc., be allowed to age for from 60 to 90 days under good drying conditions. Fresh or green plaster, should be treated with a wash coat of zinc sulphate solution made by dissolving 3 pounds of zinc sulphate to the gallon of water.)

All oil, grease, dirt or other foreign materials should be removed from surfaces before painting.

Knots or sap streaks in lumber shall be given a coat of Du Pont Aluminum Paint, before application of first or Priming Coat.

Nail holes or similar imperfections shall be puttied smooth after the first or priming coat has become hard and dry.

No coat of paint, varnish or enamel shall be applied until preceding coats are thoroughly dry and hard. Varnish and enamel coats should be carefully sandpapered with fine sandpaper, and dusted before succeeding coats are applied.

For painting or enameling yellow pine or other very sappy woods, to each gallon of the first or priming coat there shall be added approximately one pint of some highly penetrative solvent such as toluol. Use only in first coat.

Metal arriving at the job with a shop prime coat applied shall be carefully sanded and all bare spots reprimed, using Du Pont DuKrome Metal Primer.

All unprimed galvanized metal shall be given a coat of Du Pont Galvanized Metal Primer before the application of finishing coats. When this Galvanized Metal Primer is used, it replaces the primer coat in the following specifications.

All trade brands herein specified shall be delivered on the job in sealed cans bearing manufacturer's label and trademark.

All materials shall be applied in accordance with manufacturer's directions printed on the labels of the various products.

SPECIFICATIONS FOR EXTERIOR SURFACES

(To be preceded by the foregoing "General Painting Specifications")

FOUNDATIONS

Wood, Concrete, Metal, etc. (below grade)

(1) Shall receive two heavy applications of Du Pont Asphalt Chromate Emulsion. Metal not already primed shall first receive one coat of Du Pont DuKrome Metal Primer followed by two heavy applications of Asphalt Chromate Emulsion.

Wood, Concrete, etc. (above grade)

(2) See specifications below for walls.

Metal (above grade)

(3) Shall receive one coat Du Pont Dulux Kromate Primer, followed by two coats of Du Pont Dulux Metal Protective Finish.....(color).

(3a) *Alternate No. 1*—One coat Du Pont DuKrome Metal Primer, plus two coats of Du Pont Antoxide..... (color).

STRUCTURAL STEEL

(4) Shall receive one coat Du Pont Dulux Kromate Primer and two coats Du Pont Dulux Metal Protective Finish .....(color).

(4a) *Alternate No. 1*—One coat Du Pont DuKrome Metal Primer and two coats Du Pont Antoxide..... (color).

WALLS

Concrete, Cement or Stucco

(5) Shall receive three coats of Du Pont Cement & Stucco Coating.....(color).

Wood or Brick (including Wood Siding, Window Frames, Sash, etc.)

(6) Shall receive three coats Du Pont Prepared Paint..... (color).

(6a) *Alternate No. 1*—Three coats Du Pont Fifty-Fifty Semi-Paste White.

(6b) *Alternate No. 2*—Three coats Du Pont Master Painter's Base Paint.....(color).

TRIM AND SHUTTERS

Wood

(7) (Where Green, Brown, and Black colors are desired) Shall receive three coats of Du Pont Trim & Trellis Finish.....(color).

(7a) (Where colors other than those mentioned above are desired) — Follow specifications given above for "Walls."

METAL (INCLUDING FIRE ESCAPES AND OTHER LIGHT IRON)

(8) All unprimed galvanized metal should be given a coat of Du Pont Galvanized Metal Primer before the application of finishing coats. When this Galvanized Metal Primer is used it replaces the primer coat in the specifications below.

(8a) One coat Du Pont Dulux Kromate Primer, followed by two coats Du Pont Dulux Metal Protective Finish .....(color).

(8b) *Alternate No. 1*—One coat of Du Pont DuKrome Metal Primer followed by two coats Du Pont Antoxide..... (color).

(8c) *Alternate No. 2*—One coat of Du Pont DuKrome Primer followed by two coats Du Pont Prepared Paint..... (color).

ROOFS (INCLUDING SKYLIGHTS, DRAIN-SPOUTS, VENTILATORS, TANKS, ETC.)

Metal

(9) All unprimed galvanized metal should be given a coat of Du Pont Galvanized Metal Primer before the application of finishing coats. When this Galvanized Metal Primer is used it replaces the primer coat in the specifications below.

(9a) One coat Du Pont Dulux Kromate Primer, followed by two coats Du Pont Dulux Metal Protective Finish .....(color).

(9b) *Alternate No. 1*—Du Pont DuKrome Metal Primer, followed by two coats Du Pont Antoxide..... (color).

Wood Shingle

(10) Shall receive two coats Du Pont Shingle Stain..... (color). First coat shall be dip coat, dipping shingles two-thirds of their length. Second coat brushed on after shingles are laid.

(10a) *Alternate No. 1*—Shall receive two coats Du Pont Shingle Stain brushed on after shingles are laid.

Felt — Asphaltum — Gravel

(11) Felt as specified, followed by one coat Du Pont Seal-M-Tite and Gravel.

SPECIFICATIONS FOR INTERIOR SURFACES

(To be preceded by the foregoing "General Painting Specifications")

WALLS AND CEILINGS

Plaster (Smooth and Sand Finish, Cement, Brick, etc.)

(12) All new plaster surfaces should be thoroughly "aged." Where fresh or "green," they should be given a wash coat of zinc sulphate solution to neutralize lime.

(13) **Flat Wall Paint Finish**—One coat Du Pont Primer-Sealer, followed by two coats Du Pont Flat Wall Finish .....(color).

(13a) *Alternate No. 1*—Two coats Du Pont Casein-Lithopone Flat Wall Finish.....(color). No prime coat necessary.

(14) **Stipple or Texture Finish**—One coat Du Pont Primer-Sealer, followed by one coat Du Pont Flat Wall Finish and one coat Du Pont Stippling Flat, stippled or textured as per architect's directions.

(15) **Enamel Finishes**—One coat Du Pont Primer-Sealer followed by one coat Du Pont Dulux Super-White Enamel Undercoat and one coat Du Pont Dulux Super-White Enamel (Gloss or Eggshell Finish).

SPECIFICATIONS FOR INTERIOR SURFACES—(CONT'D.)

(15a) *Alternate No. 1*—One coat Du Pont Primer-Sealer followed by one coat Du Pont Ovalite Enamel Undercoat and one coat Du Pont Interior Gloss (or Semi-Gloss) .....(color).

(16) **Enamel Finishes** — *(For Industrial buildings)* — Mill-White Enamel Finish — One coat Du Pont Primer-Sealer followed by one coat Du Pont Dulux Mill-White Undercoat and one coat Du Pont Dulux Mill-White Enamel (Gloss or Eggshell Finish).

(16a) *Alternate No. 1 — (For Industrial buildings)* — Mill-White Enamel Finish — One coat Du Pont Primer-Sealer followed by one coat Du Pont Dulite Undercoat and one coat Du Pont Dulite Enamel (Gloss or Eggshell Finish).

(16b) *Alternate No. 2 — (For Industrial buildings)* — Fume-Resisting Enamel Finish — One coat Du Pont Primer-Sealer followed by one coat Du Pont Fume Resisting Undercoat and one coat Du Pont Fume Resisting Enamel (Eggshell only).

DOORS, TRIM, WINDOW SASH, ETC.

Metal

(17) All unprimed galvanized metal should be given a coat of Du Pont Galvanized Metal Primer before the application of finishing coats. When this Galvanized Metal Primer is used it replaces the primer coat in the specifications below.

(18) One coat Du Pont Dulux Kromate Primer followed by one coat Du Pont Dulux Super-White Enamel Undercoat and one coat Du Pont Dulux Super-White Enamel (Gloss or Eggshell Finish).

(18a) *Alternate No. 1*—One coat Du Pont DuKrome Metal Primer followed by one coat Du Pont Ovalite Enamel Undercoat and one coat Du Pont Interior Gloss Enamel (or Interior Semi-Gloss).....(color).

Wood (All Interior Wood Except Floors)

(19) All open grained woods should be filled with Du Pont Wheeler's Paste Wood Filler (color selected) after the stain, if any, and before the varnish or wax.

(20) **Natural Finish**—Du Pont Wheeler's Paste Wood Filler Natural *(for open-grained woods only)* followed by two coats Du Pont Shipoleum Gloss Varnish (or one coat Du Pont Shipoleum Gloss Varnish plus one coat of Du Pont No. 76 Dull Varnish where a dull or rubbed finish effect is desired).

(20a) *Alternate No. 1*—Du Pont Wheeler's Paste Wood Filler Natural *(for open-grained woods only)* followed by two coats Du Pont General Utility Gloss Varnish (or one coat Du Pont General Utility Gloss Varnish plus one coat of Du Pont No. 76 Dull Varnish where a dull or rubbed finish effect is desired).

(21) **Stain and Varnish Finish** (*Over close-grained wood*)—Du Pont Penetrating Stain.....(color), followed by one coat Du Pont Penetrating Stain Sealer and finished with two coats Du Pont Shipoleum Gloss Varnish (for dull or rubbed finish effect, specify one coat Du Pont Shipoleum Gloss Varnish plus one coat of Du Pont No. 76 Dull Varnish.)

(21a) *Alternate No. 1* (*over close-grained woods*) — Du Pont Penetrating Stain.....(color), followed by one coat Du Pont Penetrating Stain Sealer, and finished with two coats Du Pont General Utility Gloss Varnish (for dull or rubbed finish effect, specify one coat of Du Pont General Utility Gloss Varnish plus one coat of Du Pont No. 76 Dull Varnish).

(22) **Stain and Varnish Finish** (*Over Open-grained Woods*) —Du Pont Oil Stain.....(color), followed by one coat Du Pont Wheeler's Filler.....(color), and finished with two coats Du Pont Shipoleum Gloss Varnish (for dull or rubbed finish effect, specify one coat Du Pont Shipoleum Gloss Varnish plus one coat of Du Pont No. 76 Dull Varnish).

(22a) *Alternate No. 1* (*Over Open-grained Woods*)—Du Pont Oil Stain.....(color), followed by one coat Du Pont Wheeler's Filler.....(color), if necessary, and finished with two coats Du Pont General Utility Gloss Varnish (for dull or rubbed finish effect, specify one coat of Du Pont General Utility Gloss Varnish plus one coat of Du Pont No. 76 Dull Varnish).

(23) **Enamel Finishes**—Two coats Du Pont Dulux Super-White Undercoat followed by two coats Du Pont Dulux Super-White Enamel (Gloss or Eggshell Finish).

(23a) *Alternate No. 1*—Two coats Du Pont Ovalite Enamel Undercoat followed by two coats Du Pont Interior Gloss (or Interior Semi-Gloss).....(color).

FLOORS

Cement, Concrete, Brick, etc.

(24) Shall receive two coats Du Pont Floor & Deck Enamel .....(color).

Wood

(25) All open grained woods should be filled with Du Pont Wheeler's Paste Wood Filler (color selected) after the stain and before the varnish or wax. (Omit filler for close-grained woods.)

(26) **Natural Finish**—Du Pont Wheeler's Paste Wood Filler Natural, if necessary, followed by three coats Du Pont Supremis Floor Varnish.

(26a) *Alternate No. 1*—Du Pont Wheeler's Paste Wood Filler Natural, if necessary, followed by three coats Du Pont Quick-Drying Floor Varnish.

(27) **Stain and Varnish Finish**—One coat Du Pont Oil Stain .....(color), Du Pont Wheeler's Paste Wood Filler.....(color), if necessary, and three coats Du Pont Supremis Floor Varnish.

(27a) *Alternate No. 1*—One Coat Du Pont Oil Stain..... (color), Du Pont Wheeler's Paste Wood Filler..... (color) if necessary, and three coats Du Pont Quick-Drying Floor Varnish.

(28) **Enamel Finish**—Three coats Du Pont Floor and Deck Enamel.....(color).

SPECIFICATIONS FOR INTERIOR SURFACES—(CONT'D.)

Linoleum

(29) Shall receive two or more coats Du Pont Duco Linoleum Finish.

(29a) *Alternate No. 1*—Two or more coats Du Pont Linkota.

EXPOSED PIPING, VENTILATORS, RADIATORS, ETC.

Metal

(30) All galvanized metal should be given a coat of Du Pont Galvanized Metal Primer before the application of finishing coats. When this Galvanized Metal Primer is used it replaces the primer coat in the specifications below.

(31) Shall receive one coat Du Pont Dulux Kromate Primer and two coats Du Pont Dulux Machinery Finish .....(color).

(31a) *Alternate No. 1*—One coat Du Pont DuKrome Metal Primer followed by two coats of same material as used on adjacent surfaces.

SPECIFICATIONS FOR MACHINERY AND EQUIPMENT

(To be preceded by the foregoing "General Painting Specifications")

STACKS

Steel

(32) Two coats Du Pont Stack Black.

(32a) *Alternate No. 1*—One coat Du Pont Heat-Resisting Aluminum Paint.

BOILER FRONTS AND CONNECTIONS

Steel

(33) Two coats Du Pont Dulux Machinery Finish Black.

(33a) *Alternate No. 1*—One coat Du Pont Heat-Resisting Aluminum Paint.

(33b) *Alternate No. 2*—Two coats Du Pont No. 20 Black.

CRANES AND RUNWAYS

Steel

(34) One coat Du Pont Dulux Kromate Primer, followed by two coats Du Pont Dulux Metal Protective Finish .....(color).

(34a) *Alternate No. 1*—One coat Du Pont Dulux Kromate Primer, followed by two coats Du Pont Dulux Aluminum Paint.

(34b) *Alternate No. 2*—One coat Du Pont DuKrome Metal Primer, followed by two coats Du Pont Antoxide .....(color).

(34c) *Alternate No. 3*—One coat Du Pont DuKrome Metal Primer, followed by two coats Du Pont Ready-to-Mix Aluminum Paint.

CONDUITS, SWITCH BOXES, ELECTRICAL FIXTURES, ETC.

Steel

(35) One coat Du Pont Dulux Machinery Primer, followed by two coats Du Pont Dulux Machinery Finish..... (color).

FIRE BUCKETS, SAND PAILS AND FIRE EXTINGUISHERS

Steel

(36) One or two coats Du Pont Dulux Machinery Finish Fire Equipment Red.

MACHINERY, MACHINERY GUARDS, MOTORS, ENGINES, TRUCKS, PUMPS, TURBINES, ETC.

Steel

(37) One coat Du Pont Dulux Machinery Primer, followed by two coats Du Pont Dulux Machinery Finish .....(color).

(37a) *Alternate No. 1*—One coat Du Pont Dulux Machinery Primer, followed by two coats Du Pont Dulux Aluminum Finish.

Wood Parts

(38) One coat Du Pont Dulux Machinery Finish Undercoater, followed by two coats Du Pont Dulux Machinery Finish.....(color).

(38a) *Alternate No. 1*—Two coats Du Pont Dulux Aluminum Finish.

(38b) *Alternate No. 2*—Two coats Du Pont Floor & Deck Enamel.....(color).

RACKS AND BINS, ETC.

Wood

(39) Two coats Du Pont Floor & Deck Enamel..... (color).

Steel

(40) One coat Du Pont Dulux Machinery Primer followed by one or two coats Du Pont Dulux Machinery Finish .....(color).

(40a) *Alternate No. 1*—One coat Du Pont DuKrome Metal Primer followed by two coats Du Pont Floor & Deck Enamel.....(color).

RADIATORS

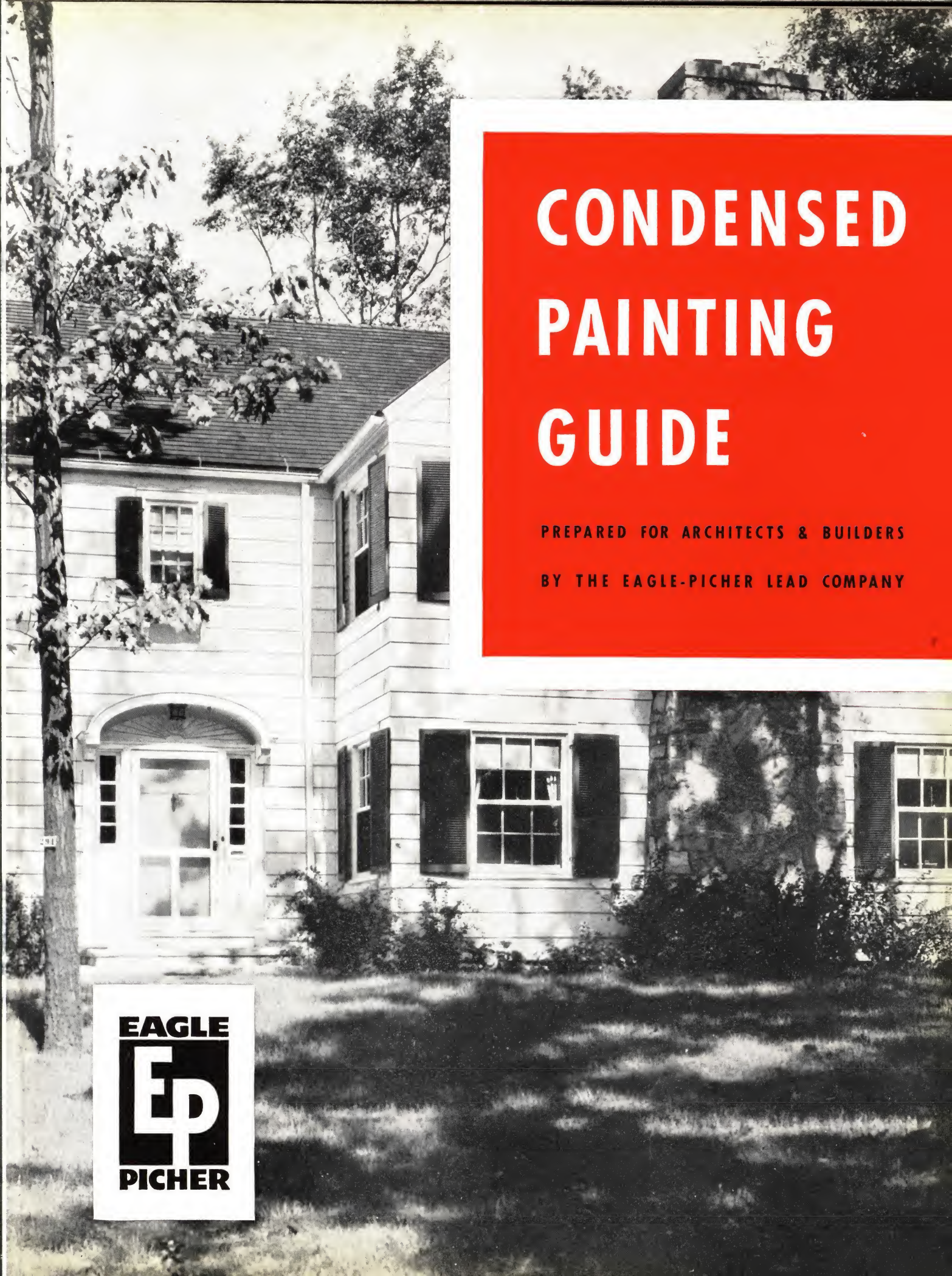
Steel

(41) One coat Du Pont Dulux Machinery Primer followed by two coats Du Pont Dulux Machinery Finish .....(color).

(41a) *Alternate No. 1*—One coat Du Pont Dulux Kromate Metal Primer followed by two coats Du Pont Dulux Aluminum Paint.

(41b) *Alternate No. 2*—One coat Du Pont DuKrome Metal Primer, followed by two coats Du Pont Floor & Deck Enamel.....(color).

MEMORANDA



CONDENSED PAINTING GUIDE

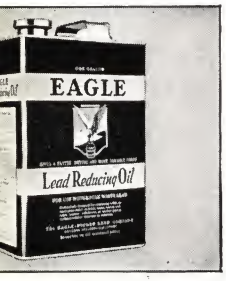
PREPARED FOR ARCHITECTS & BUILDERS

BY THE EAGLE-PICHER LEAD COMPANY

EAGLE EP PICHER

EAGLE-PICHER PAINTING PRODUCTS











EAGLE-PICHER has been manufacturing painting products since 1843. During this time, the company has conducted countless tests to determine the ideal methods for formulating and applying paints in order to achieve most satisfactory results. However, the cumulative experience of these many years has been distilled into fairly simple recommendations. This manual contains basic formulas for durable paints adapted to various surfaces and average conditions. It also includes data on surface preparation, on the number of coats required, and what precautions to follow in modifying formulas or application methods to meet certain variations from average conditions. Beyond this, it is impractical to go.

An experienced painting and decorating contractor is qualified to weigh all factors and to change his formulas and procedure to meet them. Others should strictly follow the formulas and recommendations given here, which are much more satisfactory, even under unusual conditions, than haphazard deviations from them.

SELECTING THE PROPER PAINT

Cost, exposure, required durability, frequency of cleaning and of repainting—all these factors influence the selection of the proper paint.

The principal problem in selecting paints is the adjustment between initial cost and desired durability. When properly applied, pure lead-in-oil paints are as durable as any combination of pigments, and far more durable than most.

Lead-in-oil paints can usually be prepared on the job for less cost than many paints of not even approximately equal qualities. The materials cost less, and mixing and tinting take little more time than stirring and retinting ready-mixed paints.

The labor cost for a paint job is usually two or three times the cost of the materials. Thus, if repainting will be required within one or two years, the use of a minimum-cost short-lived paint may be justified. But if repainting will be done only when the life of the original paint is over, the high cost of labor makes it considerably more economical to use the most durable paint there is, even though its initial cost may be a little higher than a short-lived cheaper paint.

It is important to remember that the service of any paint depends upon the skill of the painter. Reputable manufacturers can only guarantee the composition of the paints they sell. They cannot guarantee results.

HOW TO USE THIS GUIDE

Reliable data on the selection of durable paints for every major type of painting job are given on the following pages. Formulas are tabulated for various lead-in-oil paints according to the type and condition of the surface to be painted. Complete specifications can be written for any job by adapting these data to conditions prevailing on the project. When master painters are employed, these formulas may serve as a guide to materials and proportions. When less skilled workmen are employed, they may be made mandatory.

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DISTRIBUTED BY: **THE EAGLE-PICHER SALES COMPANY**

General Offices: Temple Bar Building, Cincinnati, Ohio

(for list of Branch Offices: see back cover)

Eagle pure White Lead in Oil for all types of Painting



WHITE lead as a paint pigment dates back to the Romans almost 2000 years ago. Its popularity has grown ever since, until it has become the standard of comparison. Searches to find cheaper substitutes have produced many other paint pigments, but unbiased authorities still agree that white lead remains the most universally reliable painting material.

OUTSTANDING CHARACTERISTICS

Eagle White Lead is packaged in two forms—Heavy Paste and All-Purpose Soft Paste. Either is ideally adapted for both interior and exterior work. The only difference is that All-Purpose contains a small amount of turpentine, added by a special grinding process. This makes it easier to mix on the job.

No Cracking – No Scaling

Eagle White Lead unites chemically with linseed oil and forms a soft elastic paint film. When the surface to which it has been applied expands and contracts with temperature changes, this elastic film expands and contracts with it, so that it does not crack or scale.

Perfect Repainting Surface

Good paint wears by slow, even chalking. An Eagle White Lead film wears in this way—*not by cracking and scaling.* It leaves a perfect surface for repainting—no burning or scraping is necessary.

Flows Freely – Good Coverage

Surface for surface, pure white lead paint will hold its own in coverage with most paints—and excel many of them. Furthermore, it brushes easier—enabling a painter to paint more surface each hour he works. An Eagle White Lead paint film goes on evenly and smoothly.

Great Hiding Power

Pigment particles in an Eagle White Lead paint form a solid mass of pigment that completely covers the surface. Its "refractive index" is high—giving it great opacity.

Easy to Mix on the Job

Oil is added to Eagle White Lead at the factory so that it is in an easy-mixing consistency when the painter receives it. He merely has to thin it into paint of the type best suited to meet surface conditions—a matter of only a few minutes for 100 lbs., which when mixed according to finish coat formula produces more than six gallons of paint.

Does Not Retain Rust Stains

A film of paint made from Eagle White Lead and oil does not react chemically with the ferrous metal compounds formed by rust. For this reason, the paint does not retain rust stains from nail heads or iron screens. The rust washes down and off the surface, leaving no stains behind which cannot be removed with water.

Easily Tinted

Painters can easily tint Eagle White Lead to any desired color (except extremely dark shades). Exact values are obtained by adding colors in oil. Color pigments are tightly held, minimizing fading.

PRACTICAL TEST PROVES DURABILITY



1 This is the midwestern community where the paint test was made. One hundred and twenty-four homes were divided into three groups and a different kind of paint used on each group. The service results were carefully checked. (All work was done by the same painters.)



This home is typical of the group painted with paint containing no ite lead. Photograph ken after 18 months' exsure. Note discoloration.



4 This photograph shows the results of 18 months wear on paper with only 50% white lead. All houses in this group showed similar signs of failure.

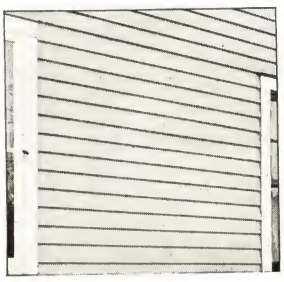


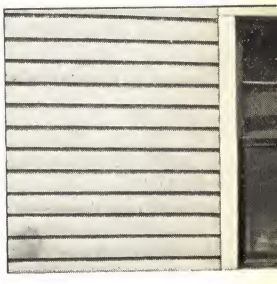
5 Same house as left, six months later. Note how rapidly the disintegration of the paint film progresses once it has begun to fail.

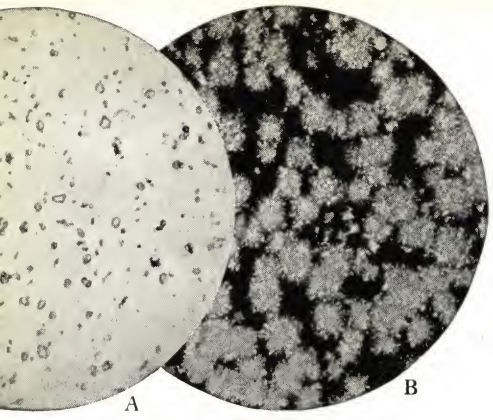


2 The one perfect paint job in the whole community! Eagle White Lead was the only paint ever used on this house. Note the smooth, even surface—no sign of failure after several years of weathering.

6 Two close-ups of homes in the Eagle White Lead group after the same weather exposure as homes above. Paint film still in good condition. No cracking or scaling. Perfect surface for repainting.







White lead is a chemically active pigment. These two photomicrographs illustrate chemical action that takes place when it is mixed with linseed oil. "A" shows how pigment particles look before oil is added. "B" shows how lead particles "blossom" out in linseed oil. Note that no sharp lines divide pigment and vehicle.

ELEMENTS OF PAINTS

Pigments, Oils, Thinners and Driers . . . Their Relation to the Formulas

PAINT is a mixture of a pigment, which forms the "armor" of the painted surface, and a liquid called a vehicle. The pigment portion may consist of one or several elements. In the latter case, some of the substances may be "fillers," added to lower the cost (usually at the expense of durability and hiding power), or to give the paint some special quality. Colored pigments may also be added when required. The vehicle consists of a non-volatile oil; a volatile thinner to make the paint spread more readily and to give "tooth" to aid in the adhesion of succeeding coats; and driers to hasten drying.

Qualities Desired in a Pigment

Desirable characteristics of a pigment include opacity, covering power, good and enduring color, and the ability to combine actively with the oil in the vehicle. It should be neutral or basic with respect to the surface, and upon aging should present a smooth surface which can be repainted without costly surface preparation.

Qualities Required in a Vehicle

The oil portion of the vehicle should combine chemically with the pigment, forming a hard, tough and elastic film which will contract and expand with the surface; it should dry in reasonable time and not discolor the pigment. Linseed is the most widely accepted oil, but certain special oils such as Eagle Flatting Oil and Eagle Lead Reducing Oil add life to the paint and increase its sealing qualities. The duties of the "thinner," which are described above, are generally fulfilled by turpentine, which evaporates when the paint is applied.

Proportions of Pigment and Vehicle by Volume

An exterior paint, ready to apply, should range from 28% to 32% pigment and from 68 to 72% vehicle, by volume. Too much pigment usually causes early chalking and loss of gloss, while too much vehicle causes running, wrinkling, slow drying and stickiness. Paste white lead, thinned to painting consistency according to the recommendations in this manual, will conform to this ratio.

Tinting Colors

Colored pigments ground in oil can be added to white lead paint to create all the colors except the very dark ones, in the exact values desired. When paints are being tinted, the entire quantity required for the job should be mixed at one time and in one container, so that parts of the job will not vary in color.

HOW TO MIX LEAD AND OIL PAINTS

Mixing is the first step in good painting. There is little difference in mixing lead-and-oil paints and preparing so-called ready-mixed paints for the brush. In each case, pigment and vehicle must be thoroughly mixed, color added when necessary, and the mixture strained.

STEP 1. PREPARING THE LEAD PASTE

Eagle All-Purpose Paste is merely stirred in the keg until oil and pigment are thoroughly incorporated. Heavy Paste is transferred into a larger keg, then a small amount of the oil called for by the formula is added and stirred in until the mix is just thin enough to pour.

Eagle Sublimed Blue Lead and Eagle Red Lead are prepared in the same way as Heavy Paste White Lead.

STEP 2. PREPARING TINTING COLORS

The tinting color is put into a small container and beaten up with turpentine until it forms a creamy paste, and then grayed off with white lead before adding to the large batch of white lead paste.

STEP 3. MIXING TO FORMULA

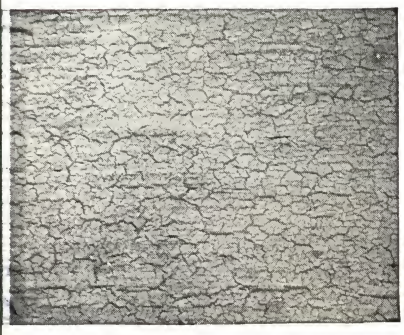
The paste, prepared as in Step 1, is poured into a container large enough to hold three or four times the required quantity of paint. Then the oil is added in small quantities, and thoroughly stirred into the paste. Colors, mixed as in Step 2, and the required amount of turpentine are stirred in next, and finally the drier. The entire mix is then strained.

Any paint containing oil and an "active" pigment like lead should stand for about 24 hours before use. Greater uniformity, coverage and improved brushing and durability will result. The entire mix should be stirred just before application, and kept covered.

PAINT FAILURES — Appearance, Causes and Remedies

EVERY paint film eventually "wears out." The ideal way for a paint to wear is by slow, even chalking, so that when the time to repaint finally comes, the surface is smooth and requires only a minimum of preparation before repainting. Defective performance is evidenced by such failures as cracking, scaling, peeling, fading and alligatoring, which may be caused by improper paint formulation, improper workmanship, or faulty construction. By studying the many types of paint failures, their causes and remedies, they may be entirely avoided or at least corrected at a minimum of expense. However, the more familiar one becomes with paint troubles, the more obvious is the conclusion that nearly all of them can be averted by employing skilled paint craftsmen who use paint materials which can be mixed on each job to suit the conditions of the surface and the weather.

Alligatoring



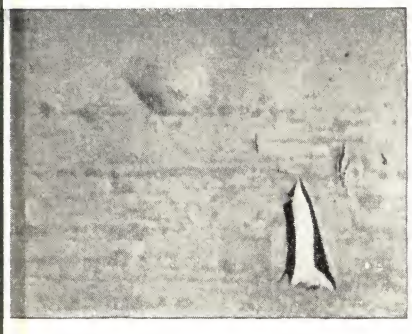
Caused by application of relatively hard, fast-drying surface coat over undercoats which are soft or slow drying. Improper oil, too much oil or insufficient drying time may be the cause. Each coat should be formulated to be successively softer than the priming coat. Alligator cracks usually do not penetrate the entire paint coat. When not severe, the cracked layer can be wire-brushed off before painting. Otherwise the entire paint coat must be removed.

Cracking and Scaling



Results from use of hard drying inelastic paint which does not contract and expand with under surface. Old paint must be removed, usually by burning. Remedied by using properly formulated lead-in-oil paint.

Blistering and Peeling

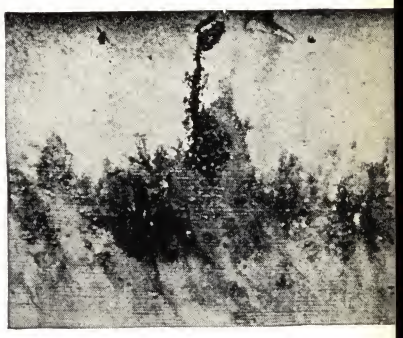


Caused by moisture under the unbroken paint film. First evidence is a blister which later breaks and causes peeling of the paint film. All blistered paint must be scraped off, the source of moisture found and corrected, and the surface thoroughly dried before repainting.

Checking

Similar to alligatoring but much less serious and characterized by minute surface cracks. Flakes are small and generally disappear as paint gradually chalks. Before repainting, it is sufficient to brush the surface to remove loose particles.

Mildew Stains



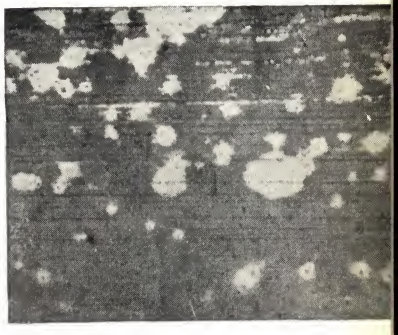
Caused when an air-borne fungus attaches itself to wet paint in shaded areas and feeds on oil in the paint film. Mildew stains must be removed before repainting by a wash of 1 lb. tri-sodium phosphate or sodium carbon ate to 1 gal. of water, after which the surface should be flushed with clean water and allowed to dry about 48 hours before repainting. Addition of ½ oz. mercuric chloride per gallon of paint, or the use of less oil and more turpentine, is desirable in sections of the country where mildew is common.

Wrinkling



Usually caused by one of three things: (1) sudden drops in temperature; (2) application of too thick a paint; (3) using an excess of drier. To remedy, sand the surface and use a properly formulated paint applied in the correct way.

Spot Fading



Evidenced by color changes and loss of gloss in irregular patches. Caused by spots in the surface which absorb oil from the paint unevenly. It appears only when insufficient paint has been used. Application of *three* coats of properly formulated paint will avoid it.

Washing

Caused by pigments which form water-soluble compounds or by painting under damp conditions. It is evidenced by streaks at lower edges of clapboards, by accumulations on column footings and deposits on foundations.

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10

FORMULAS FOR EXTERIOR WOODWORK



Specification Data: Painting should be done in dry weather and when the temperature is above 40° F.

Painting done at lower temperatures, especially when nights are likely to bring frost and moisture with sudden drops in temperature, will not be as satisfactory as painting done under ideal conditions. Flatting, loss of gloss, spotting and premature chalking may result.

Moisture in wood will be drawn out by the sun and form blisters under a paint film which will eventually result in peeling. Green lumber should be primed as soon as possible and allowed to stand several days before application of succeeding coats. Defer all painting two to three days after a driving rain.

In new and re-painting work, fill nail holes, cracks and crevices with putty after priming or first coat has dried, to form a smooth surface and to prevent water from entering behind the paint.

Three coats of paint on new work and two coats on repainting work are generally sufficient.

	COAT	PREPARATION	PAINT FORMULA	APPLICATION
NEW WORK	PRIMING	Dust and scrape off lime, dirt and adherent matter	FORMULA NO. 1 100 lb. All-Purpose White Lead 4 gal. Raw Linseed Oil 1¼ gal. Eagle Flatting Oil or Pure Turpentine 1 pt. Best Japan Drier	Brush in carefully and lay off in an even film as this is foundation of all subsequent painting. Its importance cannot be over-emphasized
	SECOND	Apply 3-7 days after priming coat. Coat knots and sapwood with shellac before applying	FORMULA NO. 2 100 lb. All-Purpose White Lead 1¾ gal. Raw Linseed Oil 1¼ gal. Eagle Flatting Oil or Pure Turpentine 1 pt. Best Japan Drier	Brush in carefully to an even film of uniform thickness
	THIRD (Semi-gloss finish)	Apply 3-7 days after second coat	FORMULA NO. 3 100 lb. All-Purpose White Lead 3 gal. Raw Linseed Oil 1 pt. Best Japan Drier	Brush in carefully to an even film of uniform thickness
	THIRD (Flat finish)	Apply 3-7 days after second coat	FORMULA NO. 4 100 lb. All-Purpose White Lead 2¼ gal. Eagle Flatting Oil or Pure Turpentine	Brush in carefully to an even film of uniform thickness
REPAINTING	PRIMING (Not required unless bare wood is exposed)	If in good condition dust off only. Loose scaly paint scraped off. If in bad condition burn off all paint and treat as new wood	Same as for new wood if required	Same as for new wood if required
	FIRST	Apply 3-7 days after spot priming if required	FORMULA NO. 5 100 lb. All-Purpose White Lead 2¼ gal. Raw Linseed Oil 1¼ gal. Eagle Flatting Oil or Pure Turpentine 1 pt. Best Japan Drier	Brush in carefully to smooth film of even thickness
	SECOND (Semi-gloss finish)	Apply 3-7 days after first coat	FORMULA NO. 3 100 lb. All-Purpose White Lead 3 gal. Raw Linseed Oil 1 pt. Best Japan Drier	Brush in carefully to smooth film of even thickness
	SECOND (Flat finish)	Apply 3-7 days after first coat	FORMULA NO. 4 100 lb. All-Purpose White Lead 2¼ gal. Eagle Flatting Oil or Pure Turpentine	Brush in carefully to smooth film of even thickness

Notes: Eagle Flatting Oil is recommended in preference to turpentine for its smoother brushing and greater wearing qualities and because it will produce a better and more lasting finish. If thinner brushing is desired, do not add more linseed oil to these formulas, but reduce them to the desired consistency with Eagle Flatting Oil or turpentine. When Eagle Heavy Paste White Lead is used, add 1 pint more turpentine or flatting oil to formula No. 3, one quart more to all other formulas.



FORMULAS FOR INTERIOR WOODWORK

Specification Data: The room temperature should not be less than 70° F. Paints should be kept at this temperature before being used.

White lead, however, brushes easier than varnishes and enamels and may, therefore, be applied at lower temperatures.

All dust and dirt should be swept from the room before any paint is applied.

Three coats are usually sufficient in new work, and two coats in repainting.

In certain cases where a specially durable job is required, additional coats may be added, each coat being extremely thin.

It is advisable in specifications to require adherence to formulas only when work is *not* in the hands of qualified contractors or decorators. The following formulas will produce paint that will give satisfactory service in a majority of cases.

	COAT	PREPARATION	PAINT FORMULA	APPLICATION
NEW WORK	PRIMING	Clean, sandpaper, dust off and sweep room	FORMULA NO. 6 100 lb. All-Purpose White Lead 3 gal. Raw Linseed Oil 2¼ gal. Eagle Flatting Oil or Pure Turpentine 1 pt. Best Japan Drier ALTERNATE: Formula No. 14 (See p. 9)	Brush in thoroughly and lay off smoothly with the grain
	SECOND	Putty holes, cracks, etc. Sandpaper lightly and sweep room	FORMULA NO. 7 100 lb. All-Purpose White Lead 1½ gal. Raw Linseed Oil 1¼ gal. Eagle Flatting Oil or Pure Turpentine 1 pt. Best Japan Drier ALTERNATE: Formula No. 15 (See p. 9)	Apply freely and brush out well with the grain
	THIRD (Semi-gloss finish)	Sandpaper lightly and sweep room	FORMULA NO. 8 100 lb. All-Purpose White Lead 3-3½ gal. Raw Linseed Oil 1 pt. Best Japan Drier ALTERNATE: Formula No. 16 (See p. 9)	Brush out carefully, laying off in an even film without brush marks
	THIRD (Flat finish)	Sandpaper lightly and sweep room	FORMULA NO. 4 100 lb. All-Purpose White Lead 2¼ gal. Eagle Flatting Oil or Pure Turpentine (If Turpentine is used add 1 pt. Pale or White Enamel Varnish) ALTERNATE: Formula No. 15 (See p. 9)	Brush out carefully, laying off in an even film without brush marks
REPAINTING	PRIMING (Not required unless bare wood is exposed)	Wash with paint cleaner to cut gloss. Rinse with clear water. Remove cracked or scaling paint. Putty nails, cracks, etc. Sandpaper if needed	Treat as new wood if required	Same as for new wood if required
	FIRST	Apply after spot priming is dry	FORMULA NO. 9 100 lb. All-Purpose White Lead 1 gal. Raw Linseed Oil 2¼ gal. Eagle Flatting Oil or Pure Turpentine 1 pt. Best Japan Drier ALTERNATE: Formula No. 15 (See p. 9)	Brush out carefully to a smooth even film
	SECOND (Semi-gloss finish)	Sandpaper slightly and sweep room	FORMULA NO. 8 100 lb. All-Purpose White Lead 3-3½ gal. Raw Linseed Oil 1 pt. Best Japan Drier ALTERNATE: Formula No. 16 (See p. 9)	Brush out carefully, laying off in an even film without brush marks
	SECOND (Flat finish)	Sandpaper slightly and sweep room	FORMULA NO. 4 100 lb. All-Purpose White Lead 2¼ gal. Eagle Flatting Oil or Pure Turpentine (If Turpentine is used add 1 pt. Pale or White Enamel Varnish) ALTERNATE: Formula No. 15 (See p. 9)	Brush out carefully, laying off in an even film without brush marks

Notes: Eagle Flatting Oil is recommended in preference to turpentine for its smoother brushing and greater wearing qualities, and because it produces a better and more lasting finish. If thinner brushing consistency is desired, thin down with small amounts of Eagle Flatting Oil or pure turpentine. *Do not add linseed oil.* When Eagle Heavy Paste White Lead is used, add one pint more turpentine or flatting oil to formula No. 8, one quart more to all others.

FORMULAS FOR PLASTER AND WALLBOARD



Specification Data: When enamels and varnishes are used, the temperature should not be less than 70° F. In cold weather, paints should be kept at this temperature over night before being used.

White lead, because of its superior brushing qualities, may be applied at lower temperatures.

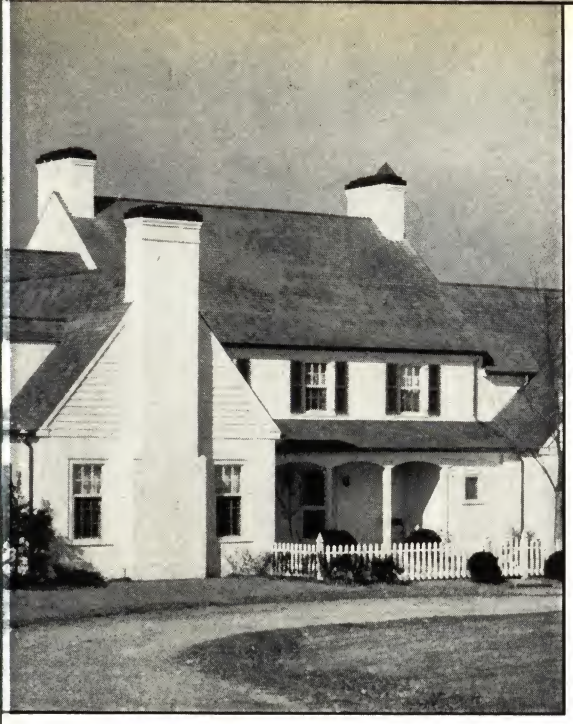
All dust and dirt should be wiped from the surface and swept from the room before paint is applied.

Formulas given below are recommended for average conditions. They may be modified by an experienced painting contractor to meet special conditions.

When joints between wallboards are to be hidden under paint, they must be filled with putty and sanded down if necessary. (Putty made from white lead is ideal for this purpose.)

	COAT	PREPARATION	PAINT FORMULA	APPLICATION
NEW PLASTER OR WALL BOARD	PRIMING	Patch cracks in plaster. Conceal joints in wallboards if required. Wipe surface clean. Glue size required on soft wallboards, when sealer or lead reducing oil is not in primer. Allow plaster to dry for 6 months	FORMULA NO. 10 100 lb. All-Purpose White Lead 3 gal. Boiled Linseed Oil 1¼ gal. Eagle Flatting Oil or Pure Turpentine 2 gal. Floor Varnish ALTERNATE: Formula No. 14 (See p. 9)	Brush with short semi-circular criss-cross strokes, allowing paint to flow and obliterate brush marks
	SECOND	No preparation required. Allow 2-3 days for drying of priming coat	FORMULA NO. 11 100 lb. All-Purpose White Lead 1¼ gal. Eagle Flatting Oil or Pure Turpentine ¾ gal. Floor Varnish ½ pt. Best Japan Drier ALTERNATE: Formula No. 15 (See p. 9)	Brush with short semi-circular criss-cross strokes, allowing paint to flow and obliterate brush marks
	THIRD COAT (Semi-gloss finish)	No preparation required. Allow 2-3 days for drying of second coat	FORMULA NO. 12 100 lb. All-Purpose White Lead ¾ gal. Eagle Flatting Oil or Pure Turpentine 1¼ gal. Floor Varnish ½ pt. Best Japan Drier ALTERNATE: Formula No. 16 (See p. 9)	Brush with short semi-circular criss-cross strokes, allowing paint to flow and obliter ate brush marks
	THIRD (Flat finish)	No preparation required. Allow 2-3 days for drying of second coat	FORMULA NO. 13 100 lb. All-Purpose White Lead 1¾ gal. Eagle Flatting Oil or Pure Turpentine 1 pt. Floor Varnish ½ pt. Best Japan Drier ALTERNATE: Formula No. 15 (See p. 9)	Brush with short semi-circular criss-cross strokes, allowing paint to flow and obliterate brush marks
REPAINTING	PRIMING (Not required unless bare surface is exposed)	Old paint or enamel: Wash with sal soda solution to remove grease and cut gloss. Rinse with clear water. Patch cracks and coat with shellac. Scrape off cracked or scaly paint Calcimine: Remove calcimine with warm water	Treat as new plaster or wallboard if required	Same as priming coat on new work if required
	FIRST	No special preparation. Allow 2-3 days for drying of priming coat if required	FORMULA NO. 11 100 lb. All-Purpose White Lead 1¼ gal. Eagle Flatting Oil or Pure Turpentine ¾ gal. Floor Varnish ½ pt. Best Japan Drier ALTERNATE: Formula No. 15 (See p. 9)	Brush with short semi-circular criss-cross strokes, allowing paint to flow and obliterate brush marks
	SECOND (Semi-gloss finish)	Allow 2-3 days for drying of first coat	Same as the third semi-gloss coat for new work	Same as the third semi-gloss coat for new work
	SECOND (Flat finish)	Allow 2-3 days for drying of first coat	Same as the third flat coat for new work	Same as the third flat coat for new work

Notes: When painting over old varnish or enamel, a little floor varnish or enamel should be added to first coat. Eagle Flatting Oil is recommended in preference to turpentine for its smoother brushing and greater wearing qualities. It produces a better and more lasting finish. When Eagle Heavy Paste White Lead is used, add one quart more flatting oil or turpentine to all formulas except alternates.



FORMULAS FOR MASONRY AND STUCCO

Specification Data: Surface must be thoroughly dry and chemically stable. Moisture should not reach the surface under the paint through faulty flashings, condensation or improper drainage. (If unsatisfactory conditions cannot be corrected, use special cement paints.)

Surface should be tested for free lime and other salts which are harmful to oil. The following solution is a simple test for free lime: Mix 1 dram phenolphthalein, and 4 oz. grain alcohol in 1 qt. of water. Dip a glass rod into this solution and touch the surface in several places. Free lime will cause a bright red spot to appear.

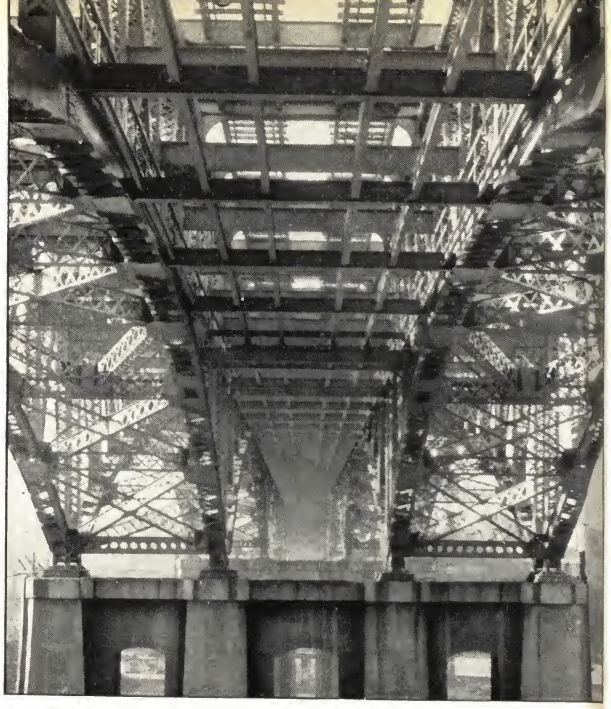
To correct an alkaline condition, apply a solution of 4 lbs. zinc sulphate to 1 gal. of water. Use large brush and rub in well. When dry, brush off surface before painting.

Painting should be done only in dry weather and when the temperature is not under 40° F. Allow ample time for thorough drying.

	COAT	PREPARATION	PAINT FORMULA	APPLICATION
NEW WORK	PRIMING	Allow to age for at least 6 months. Test for free lime and use neutralizing solution if needed. Brush clean before painting. Surface must be dry	FORMULA NO. 14 100 lb. Heavy Paste or All-Purpose White Lead 4-5 gal. Eagle Lead Reducing Oil	Brush in thoroughly and lay off in a smooth even coat
	SECOND AND THIRD (Flat finish)	Allow 3-7 days for drying. Dust clean before painting	FORMULA NO. 15 100 lb. Heavy Paste or All-Purpose White Lead 3-4 gal. Eagle Lead Reducing Oil	Brush to a smooth even coat
	THIRD (Gloss finish)	Allow 3-7 days for drying. Dust clean before painting	FORMULA NO. 16 100 lb. All-Purpose White Lead 3 gal. Raw Linseed Oil 1 pt. Liquid Drier	Brush to a smooth even coat
REPAINTING	PRIMING (Not required if paint is smooth and even)	Dust clean before painting. Paint in bad condition must be removed and those areas treated as new work	The formulas and application used for repainting are identical with those used for new work, omitting the priming coat when not required	
ALTERNATE FORMULAS (NEW WORK AND REPAINTING)	PRIMING	Allow 3-7 days for drying. Dust clean before painting	FORMULA NO. 14-A 100 lb. All-Purpose White Lead 3 gal. Boiled Linseed Oil 2 gal. Spar Varnish 1¼ gal. Pure Turpentine	Brush to a smooth even coat
	SECOND	Allow 3-7 days for drying. Dust clean before painting	FORMULA NO. 15-A 100 lb. All-Purpose White Lead 2 gal. Raw Linseed Oil 1¼ gal. Pure Turpentine 1 pt. Liquid Drier	Brush to a smooth even coat
	THIRD (Flat finish)	Allow 3-7 days for drying. Dust clean before painting	FORMULA NO. 15-B 100 lb. All-Purpose White Lead 3 qt. Spar Varnish 1¼ gal. Pure Turpentine ½ pt. Liquid Drier	Brush to a smooth even coat

Note: Use smaller quantity of Eagle Lead Reducing Oil when greatest opacity is desired. If Eagle Heavy Paste White Lead is used, add one quart more turpentine or flatting oil to formulas 16, 14-A, 15-A.

FORMULAS FOR IRON AND STEEL



Specification Data: Painting should be done only in dry weather when the temperature is not under 40° F., particularly if nights are likely to bring frost and moisture.

Painting on exposed iron and steel should preferably be brushed to assure intimate contact of the paint with all parts of the metal work.

Sublimed Blue Lead may be used for both priming and finish coats. Each coat may be tinted characteristically to permit proper supervision.

Red Lead is often used as a second coat, as well as for priming. The second coat may be tinted by adding carbon black.

If light colors are desired with Sublimed Blue Lead or Red Lead, second and subsequent coats may be White Lead-in-Oil, plain or tinted.

	COAT	PREPARATION	PAINT FORMULA	APPLICATION
NEW WORK	PRIMING OR SHOP	Remove rust, mill scale and dirt to bright metal. Clean off grease and oil with benzine	FORMULA NO. 17 (Using Eagle Sublimed Blue Lead) 100 lb. Sublimed Blue Lead-in-oil 2⅔ gal. Raw Linseed Oil 1½ pt. Pure Turpentine or Paint and Varnish Manufacturers' 48° to 50° Naphtha 1 qt. Rosin-free Drier FORMULA NO. 18 (Using Eagle Red Lead) 100 lb. Eagle Red Lead-in-oil 2½ gal. Raw Linseed Oil 1½ pt. Pure Turpentine or Paint and Varnish Manufacturers' 48° to 50° Naphtha 1½ pt. Rosin-free Drier	Brush on hard, carefully and thoroughly, using round brush to get into all corners and around rivets Where two coats of Blue Lead are to be applied, about a quart more thinner may be used advantageously to give flatter finish
	SECOND OR FIRST FIELD	Dust off carefully	FORMULA NO. 17 (Using Eagle Sublimed Blue Lead) See above FORMULA NO. 2 (Using Eagle White Lead) 100 lb. All-Purpose White Lead 1¾ gal. Raw Linseed Oil 1¼ gal. Eagle Flatting Oil or Pure Turpentine 1 pt. Best Japan Drier	Brush on hard, carefully and thoroughly, using round brush to get into all corners and around rivets
	THIRD OR SECOND FIELD	Dust off carefully	FORMULA NO. 17 (Using Eagle Sublimed Blue Lead) See above	Brush on carefully and evenly
	THIRD OR SECOND FIELD (Semi-gloss finish)	Dust off carefully	FORMULA NO. 3 100 lb. All-Purpose White Lead 3 gal. Raw Linseed Oil 1 pt. Best Japan Drier	Brush on carefully and evenly
	THIRD SECOND FIELD (Flat finish)	Dust off carefully	FORMULA NO. 4 (Using Eagle White Lead) 100 lb. All-Purpose White Lead 2¼ gal. Eagle Flatting Oil or Pure Turpentine	Brush on carefully and evenly
REPAINTING	PRIMING (Not required unless bare metal is exposed)	Remove any loose paint, scale, rust and dirt to bright metal	FORMULA NO. 17 (Using Eagle Sublimed Blue Lead) 100 lb. Sublimed Blue Lead-in-oil 2⅔ gal. Raw Linseed Oil 1½ pt. Pure Turpentine or Paint and Varnish Manufacturers' 48° to 50° Naphtha 1 qt. Rosin-free Drier FORMULA NO. 18 (Using Eagle Red Lead) See above	Brush on hard, carefully and thoroughly, using round brush to get into all corners and around rivets
	FIRST AND SECOND	Brush off dust and dirt, and scrape off loose paint	The formulas and application used for repainting are identical with the first field coat and the finish coat on new work	

STIPPLES AND DECORATIVE FINISHES

DECORATION of walls in other than flat or glossy monotones to add interest and "livability" may be accomplished in a wide variety of ways by means of stipples and low-relief textures, blends of opaque colors, transparent color glazes, or by endless combinations of these methods.

These finishes are not much more expensive than an ordinary job of high quality painting. Their added cost is due largely to the extra labor involved and will therefore vary with the type of finish desired and the skill of the painter in applying it.

Selected stipples and decorative finishes are illustrated to suggest the range of decorative treatments possible with Eagle White Lead paints and glazes made with Eagle Flatting Oil. The principal techniques include the following:

STIPPLING

Stippling in one of its manifold forms is the foundation for all fine interior work on flat surfaces and also should be used as a base for work to be color glazed. It eliminates brush stroke marks, producing a surface that diffuses light and adds interest and character.

Plain brush stippling. A finish coat slightly lighter in color than the undercoat is applied, using a paint mixed a little thicker than usual. The surface is stippled by tapping the wet paint with a clean bristle stippling brush.

Grained and brush stipples. More distinctive stippled finishes may be obtained by using a whisk broom, various types of brushes, combs or similar tools to produce a low-relief texture. The experienced craftsman has an almost limitless variety of patterns at his command, merely by the use of different tools and strokes. See Figures 1 and 2.

TEXTURING

Conservatively between the very subtle texture of stippling and the extremely coarse, high relief textures produced by plastic paints (which won and lost popularity some years ago) are various decorative textures produced in a final coat of thickened white lead paints. These are worked over, while wet, with sponges, brushes, combs, the palm of the hand, crinkled paper or other materials to roughen the surface to any desired degree. In all cases the desired texture is developed by experimentation on trial panels. Degree of relief is largely governed by consistency of the paint, while character of texture is determined by the implements and stroking employed. The scope of textures possible is indicated by Figures 3 and 4.

GLAZING AND ANTIQUING

Glazing gives the effect of sunlight passing through stained glass windows, while one particular method of glazing known as "antiquing" may be used to give "age" to a painted surface. The method used consists of applying a coat of transparent special liquid, called "glazing liquid," over the regular coats and then adding spots, stripes or patches of color, which are wiped out with a cloth into cloud-like effects. The safest way to be sure of obtaining the desired effect is to have the painting contractor submit samples of the many different possibilities.

MOTTLING

This process uses two or more coats of paint in contrasting tints or harmonizing colors. One finish coat is applied and allowed to dry thoroughly. The second is then applied with a sponge, coarsely crinkled paper, or other similar material in spots and clouds, all over, but not completely concealing, the under coat. Another method is to apply the second coat to the wall, then remove it in spots by tapping with a damp clean sponge, clean crinkled paper or similar material.

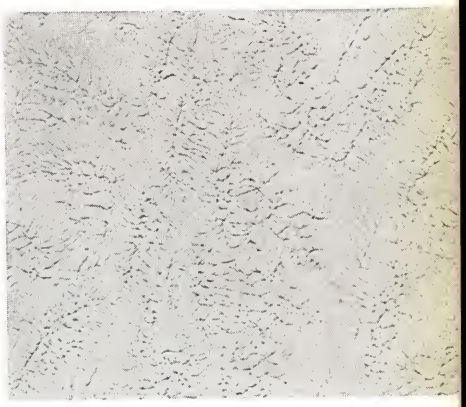
STENCILING

Decorative all-over patterns, borders or special designs may be applied by painting through oiled-paper or metal stencils with a stiff bristle brush carrying very little paint, by tapping rather than brushing. Paste white lead is often used unthinned for this purpose.

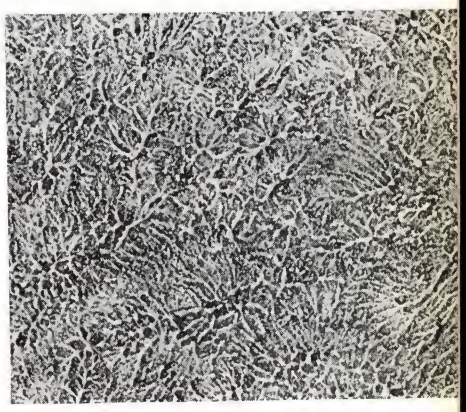
Whisk Broom Finish, Figure 1



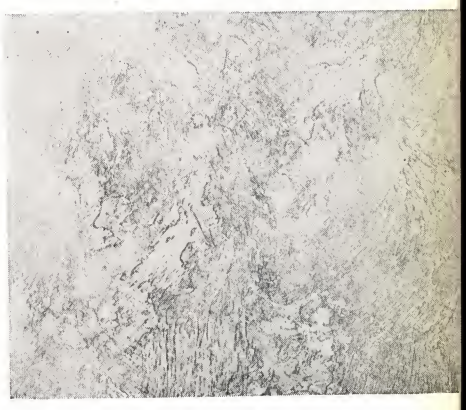
Flat Brush Stipple, Figure 2



Crinkled Palm Pattern, Figure 3



Etched Relief Pattern Figure 4



THE EAGLE-PICHER LEAD COMPANY

General Offices: Temple Bar Building
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BRANCH SALES OFFICES

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Detroit, Mich.—1627 W. Fort Street (Room 406)
Joplin, Mo.—C and Porter Streets
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SINCE 1843

The Eagle-Picher Lead Company has been engaged in the manufacture of materials for use in construction and in industry since 1843. Founded primarily to make available the wide adaptability of lead in various forms and alloys, constant research and development have dictated expansions along allied lines, until today Eagle Products, backed by Eagle-Picher's more than ninety years of dependable service, contribute a large share towards increasing the comfort of buildings and to their preservation, decoration and low cost maintenance.


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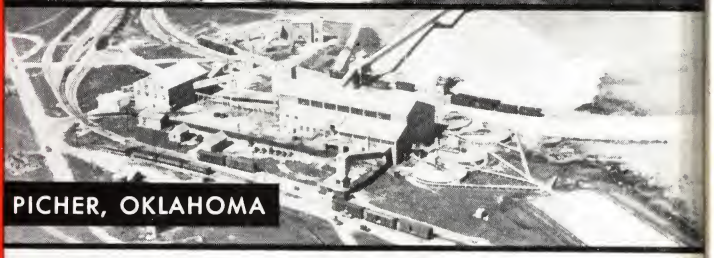

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SECTION 17

CONTINUED ⟶

EMPIRE VARNISH COMPANY

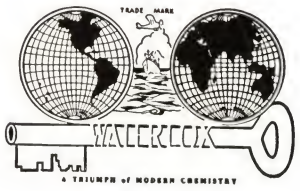
WATERLOX DIVISION

Manufacturers of Quality Paints, Varnishes, Waterproofing and Maintenance Coatings

2636-42 East 76th Street, CLEVELAND, OHIO

Paint Products

WATERLOX TRANSPARENT.
WATERLOX HOUSE PAINT.
WATERLOX ENAMELS.
WATERLOX HADES ALUMINUM.
EM-VAR-CO FLAT WALL FINISHES.
EM-VAR-CO 4 HOUR-DRI-ENAMELS.



EM-VAR-CO VELVET ENAMEL.
UNI-VER-SO (Clear Varnish).

Waterproofing Products

WATERLOX TRANSPARENT.
WATERLOX REPELLANT.
WATERLOX ENAMEL.
WATERLOX HOUSE PAINT.

WATERLOX PAINTS, VARNISHES AND ENAMELS

Waterlox Transparent

Waterlox Transparent is a Tung Oil product, a thin, transparent liquid. When used in its original state—as a varnish—it penerates into the pores of the surface on which it is applied. It clings to the pores and seals out all moisture. Waterlox Transparent is elastic. It will not chip, crack or peel. It resists the action of salt air or water, acids, acid fumes, calcium chloride, trid-sodium phosphate, and destroys the action of Glauber Salts and hot spots in plaster walls and mortar joints.

Waterlox can be brushed, sprayed or dipped. It must be applied over a surface that is clean, dry and free from lacquers, wax, oil, grease or other foreign substances. A proper application will dry overnight. Waterlox Transparent maintains all of its qualities at temperatures from minus 50° to plus 700° Fahrenheit. Its economy lies in its large coverage.

Waterlox has many uses. As a varnish, it can be applied to all household articles, floors, window sills, walls, and any other place where a protective covering is necessary. On floors, it produces a gloss comparable to a waxed surface, *but it does not leave a slippery surface. Rugs stay in place and it reduces the likelihood of accidents.*

Waterlox used as a vehicle with paints or enamels adds durability and service to the covering. It can be mixed with any good paint or enamel and will add to the life of that product.

Waterlox House Paints

Waterlox House Paints are reinforced with Waterlox Transparent which guarantees resistance to the effects of extreme heat and cold. It penetrates well into the surface and takes the place of drier. These paints produce a rubber-like film and gloss. They can be applied over a gloss finish without creeping and are free flowing without dragging. The surface is water sealed in a few minutes after application.

The highly colored Waterlox Paints will hold the color longer than straight oil paints.

WATERLOX SPECIFICATION CHART

Mix WATERLOX with Paint to prevent Flatting, Flashing and Crinkling caused by Frost, Dew, or Washing by Rain while Paint Is Wet

FOR EXTERIORS				FOR INTERIORS				
Old or New Woodwork White Lead	New Woodwork Ready-Mixed Paint	Stucco, Cement, Brick Ready-Mixed Paint	Shingles Ready-Mixed Paint	Close Grained Woodwork Stained	Enamel	Plaster Walls Flat Wall Paint	Wood Floors	Crack Filling for Cement or Plaster
First Coat 100 lbs. Lead + 1 gallon or more WATERLOX TRANSPARENT add Oil to Proper Consistency	First Coat 1 gal. Paint + ½ gal. WATERLOX TRANSPARENT add Linseed Oil to Proper Consistency	First Coat 1 gal. Paint + 3 quarts WATERLOX TRANSPARENT + 1 qt. Raw Linseed Oil	First Coat 1 gal. Paint + 2 quarts WATERLOX TRANSPARENT + 2 qts. Raw Linseed Oil	First Coat Stain and Then Coat with WATERLOX TRANSPARENT	First Coat 1 gal. Undercoat + 1 quart WATERLOX TRANSPARENT	First Coat 1 gal. Flat Paint + 1 gal. WATERLOX TRANSPARENT acts as a Sealer and Primer	Fill where necessary, apply three full coats of WATERLOX TRANSPARENT + Sand between coats	Clean cracks thoroughly then coat with WATERLOX TRANSPARENT. Dry for 24 hours. Apply a second, or bonding coat of WATERLOX TRANSPARENT. Before it is dry apply Filler Filler: Mix any powdered dry Portland cement or whiting with WATERLOX TRANSPARENT to putty thickness. Fill cracks and dry
Second Coat 100 lbs. Lead + 1 gallon or more WATERLOX TRANSPARENT add Oil to Proper Consistency	Second Coat 1 gal. Paint + 1 pint WATERLOX TRANSPARENT add Linseed Oil to Proper Consistency	Second Coat 1 gal. Paint + 1 quart WATERLOX TRANSPARENT Add Raw Linseed Oil to Proper Consistency	Second Coat 1 gal. Paint + 2 quarts WATERLOX TRANSPARENT + 2 qts. Raw Linseed Oil	Second Coat WATERLOX TRANSPARENT	Second Coat 1 gal. Undercoat + 1 pint WATERLOX TRANSPARENT	Second Coat 1 gal. Flat Paint + 1 pint WATERLOX TRANSPARENT		
Third Coat 100 lbs. Lead + 1 gallon or more WATERLOX TRANSPARENT add Oil to Proper Consistency	Third Coat 1 gal. Paint + 1 pint WATERLOX TRANSPARENT add Linseed Oil to Proper Consistency For Repainting use directions for Second and Third Coats	Third Coat 1 gal. Paint + 1 pint WATERLOX TRANSPARENT Add Raw Linseed Oil to Proper Consistency		Third Coat WATERLOX TRANSPARENT For Dull Finish mix equal parts of WATERLOX TRANSPARENT and WATERLOX REPELLANT for Final Coat	Third Coat ½ gal. Undercoat + ½ gal. Enamel Fourth Coat Enamel	Third Coat 1 gal. Flat Paint + 1 pint WATERLOX TRANSPARENT Flat Paint mixed with WATERLOX will not produce a gloss, will stand additional washing and increase hiding		

Waterlox Enamels

Waterlox Enamels are effectively used on all kinds of metal or wood furniture and beds, on serving trays, sterilizers, laundry machinery and in kitchens, dining rooms and bathrooms. That these are only a few of its uses, makes the adaptability of these fine products more apparent. An application will dry overnight, or time may be saved by baking at a temperature of 200° to 275° Fahrenheit, for one-half hour or longer. When thinning is necessary, we recommend the use of Waterlox Transparent, but any synthetic thinner may be substituted.

Waterlox Enamels are especially processed to dry without odor or fumes.

Many of the merits of Waterlox Hospital Enamel are apparent immediately after its application, but it takes months of constant service to really appreciate the economy and efficiency effected by its use. Waterlox Enamel will not crack, chip or peel, and is especially suitable for use on any surface which requires repeated washing. It is impervious to moisture and odor, and it cleans beautifully because of its active resistance to acids and alkali.

Waterlox Hospital Enamel is shipped in White unless otherwise specified. Any color, ground in oil, may be used for tinting to a desired shade.

Waterlox in Food Plants

In food products plants Waterlox Transparent and Waterlox Enamel have met every requirement. Their use will:

1. Conquer the problem of moisture deterioration.
2. Eliminate the destructive effect of lactic acid.
3. Satisfy the most rigorous sanitary specifications.
4. Add to the beauty and long life of your equipment.
5. Reduce maintenance expense tremendously.

It protects equipment against damage by freezing or steam. It may be used with absolute safety as a coating for the interior of food containers. It contains no lead or other toxic or harmful ingredient.

Waterlox Hades Aluminum

Waterlox Hades Aluminum Paint is an exceptional product which can be applied to either hot or cold surfaces, by brush or spray. Dipping is not recommended.

The vehicle used in Waterlox Hades Aluminum Paint is expressly formulated for metal coating, especially where extreme heat is encountered. Iron plates painted with this product may be heated to a bright red heat (1350 degrees) and when the metal cools the condition of the paint remains unchanged, retaining its bright silvery color. It will not flake or peel. It has exceptional covering qualities and will resist a degree of heat which other aluminum paints will not stand.

The surface to be painted should be free from grease, oil, loose rust, and burned coating. The cleaner the surface, the better the results obtained. Like all aluminum paints, Waterlox Hades Aluminum must be frequently agitated while using. In brush work, all strokes should be in one direction.

Waterlox Hades Aluminum Paint is furnished in double compartment containers in the following sizes: half pints, pints, quarts, gallons and five gallons. The vehicle can also be supplied separately in 5 gallon cans, 30 gallon drums, and 55 gallon drums, where the user prefers to purchase the aluminum powder apart from the liquid.

Other Paint and Varnish Products

In addition to the Waterlox Products described above we manufacture a complete line of varnish stains, 4-hour enamels and other products which have features and characteristics of interest to the architect and contractor. Detailed information on these will be gladly furnished on request.

WATERLOX WATERPROOFING PRODUCTS

The Empire Varnish Company manufactures unusual waterproofing products as described below. Specialization for many years in this field has made the Company an authority on problems of waterproofing, dampproofing and "Moisture Control" of wood, cement, brick, stone, stucco, plaster and metal.

Floors and walls always present waterproofing problems and the architect is invited to use our special knowledge as to the best methods for treating such portion of the building in houses, hospitals, sanitariums, apartments, dairies, canneries, condensaries, industrial buildings, institutions, farm buildings, swimming pools and on structural steel.

Waterlox Transparent

Waterlox Transparent is a Tung Oil product compounded with seven other ingredients, each having a specific purpose. It is a thin, transparent liquid made to penetrate well beneath the surface of practically all materials. Because of its deep penetration and firm adhesion Waterlox Transparent is unexcelled for waterproofing brick, stucco, concrete, tile or stone. Used on iron or steel it locks itself into the pores and prevents rust and corrosion. When thoroughly dry it completely seals any surface to which applied, leaving it non-porous and locking out all moisture. It forms a perfect bond for subsequent painting.

For further description of Waterlox Transparent see Paint Products on first page.

Waterlox Repellant

Waterlox Repellant is exactly what the name signifies. It is a thin transparent liquid, but without body. When applied, it leaves no trace of its existence, but repels water and is particularly effective for waterproofing stone, marble or similar surfaces, where no gloss or discoloration is wanted.

Waterproofing Stone, Brick—Waterlox Transparent seals, penerates, and intensifies color of brick, cement, wood, stucco, art and natural free stone, basement walls and floors.

When a glossy finish is not objectionable, treat the brick and mortar joints thoroughly with two coats of Waterlox Transparent to stop moisture and efflorescence.

Waterlox Repellant used to treat art or natural free stone, will stop moisture, retain the natural appearance of the stone, and aid in keeping it clean.

Waterlox Transparent and Waterlox Repellant may be mixed if a gloss finish is objectionable.

Test Results

The results of research in our and other laboratories, tests made by the Ohio State Highway Department, leading State Universities, and large industrial concerns, hotel chains, steamship lines, and public institutions are available on request.

OTHER USES OF WATERLOX PRODUCTS

Stadiums and Seats—Most stadiums are constructed of concrete. Cracks and hair checking will be prevented in the concrete by treating the entire structure with two coats of either Waterlox Transparent or Waterlox Repellant, depending on the finish desired.

The wooden planks which provide the seats and which are continually exposed to the weather, should be treated with Waterlox Transparent to make them impervious to moisture and to stop the bleeding of the resin gum. Two or more coats of Waterlox Transparent should be applied so that the surface will have a sheen, then the final coat of Aluminum, using Waterlox Transparent as the vehicle.

Industrial Uses—Industrial plants such as canneries, filtration plants, gasoline distilleries, incinerators, oil refineries, sewage disposal plants, steel mills and sugar refineries, are more or less exposed to destructive fumes and acids. Surfaces encountered with such destructive elements should be protected with a coating that will resist the action of acids.

Waterlox Transparent as a vehicle and binder, mixed with pure peroxide of iron, gold or aluminum powder, will make a very dependable coating.

Floor Maintenance—Economical floor finishing presents a problem for those interested in public buildings, schools, colleges, universities, and Y.M.C.A. buildings. Waterlox Transparent solves this problem economically both in buildings of this type, and in the home.

Wood floors, after being sanded and filled, should be treated with three coats of Waterlox Transparent, allowing 24 hours drying time between coats. The third or finish coat produces a durable, long-lived sealer and finish, especially for surfaces on which there is heavy foot traffic. Waterlox is not slippery when wet and provides a smooth safe surface.

Waterlox Transparent may be applied over shellac or varnish, if the floor is not resanded. However, the best results are obtained by removing the old surface.

EVERSEAL MANUFACTURING COMPANY, INC.

ESTABLISHED 1918

Manufacturers of Paints, Enamels, Varnishes, Waterproofings

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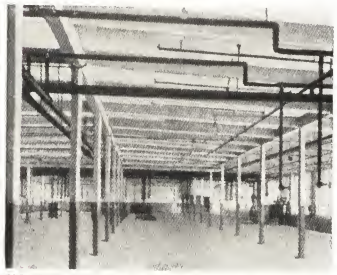
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With the development of "F.W.B." Paints, Enamels and Varnishes, based on Bakelite synthetic resins, entirely new standards of service for modern protective coatings have been established. These durable finishes were developed by the Everseal Technical Division in cooperation with the extensive Research Laboratories of the Bakelite Corporation—there is no finer paint protection than "F.W.B." available at any cost.

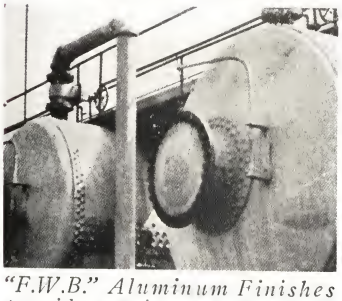
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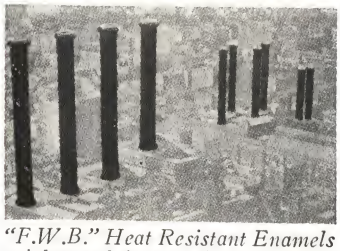
"F.W.B." Flowtile Floor Finishes easily withstand harsh soaps and caustics



"F.W.B." Mill White provides bright, durable, easily cleaned walls and ceilings



"F.W.B." Aluminum Finishes provide maximum leafing, brilliance and exposure resistance



"F.W.B." Heat Resistant Enamels withstand intense heat, fumes, exposure

"F.W.B." Flowtile Floor Finishes

Produces extremely durable tile-like surface over cement, wood, linoleum, or composition floors. "F.W.B." Flowtile is easily applied by brush and dries rapidly to a smooth, glossy, protective surface which offers maximum resistance to acids, alkalis, oils, grease, as well as continuous scuffing and abrasive action. Furnished in 10 attractive colors; also as a clear transparent coating.

"F.W.B." Mill White

Reinforced Bakelite finishes for interior walls and ceilings of factories, schools, hospitals, food and chemical plants, etc. — designed for maximum light diffusion, fume resistance and durability. Made in gloss, eggshell gloss and flat finishes, "F.W.B." Mill White produces a smooth, hard surface, impervious to dirt and easily cleaned. Will retain its whiteness and original finish under service conditions which soon disrupt ordinary coatings.

"F.W.B." Dado Enamels

Tough, durable, quick drying enamels, recommended for painting the dados or lower part of walls, beams, and columns where darker colors are desired. "F.W.B." Dado Enamels are furnished in 10 standard colors, in both gloss and semi-gloss finishes.

"F.W.B." Aluminum Finishes

Fortified with Bakelite to provide greater elasticity and resistance to corrosion, sudden climatic changes, chemical and stack fumes, salt air and abrasion. The longer life and protection afforded by "F.W.B." Aluminum Finishes make them particularly suitable for industrial interiors or exteriors, tanks, equipment, pipe lines, etc. For smokestacks and other hot surfaces, specify "F.W.B." Heat Resistant Aluminum Finishes.

"F.W.B." Metal Finishes

Furnished in attractive sunfast colors for exterior as well as interior use. These enamels dry quickly and their exceptional toughness and resistance to moisture and chemicals adapt them for application to all types of metal trim, sash, doors, tanks, pumps, fire escapes, gates, etc. For hot water pipes, radiators, boilers, and metal surfaces subjected to intense heat and where a colored enamel finish is desired, specify "F.W.B." Heat Resistant Enamels.

"F.W.B." Spar Varnish

A superior waterproof Bakelite synthetic varnish for use on interior or exterior surfaces subjected to severe service conditions. "F.W.B." Spar Varnish provides increased protection against fresh or salt water, sun, abrasion, oil, harbor fumes, chemicals, and adverse atmospheric conditions.

"F.W.B." Paints, Enamels and Varnishes include finishes for practically every interior and exterior use; also special formulations for unusual requirements.

EVERSEAL GENERAL PAINTS, ENAMELS, VARNISHES

Everseal
MANUFACTURING CO. INC.

Primekote

A pigmented priming and sealing paint for new plaster, cement, brick or other porous interior surfaces; neutralizes excess alkalinity, prevents hot spots and forms perfect foundation for succeeding paint coats.

Everseal Flat Wall Paint

A pure oil paint for interior use that produces a smooth, washable, velvet-like finish. Furnished in brushing and stippling consistencies; white and twelve colors.

Everseal White Enamels

Durable, easy working and flowing enamels for all interior surfaces. Made in high gloss and semi-gloss finishes — readily tinted to any desired shade.

Superlite Mill White

Highly light reflecting, lasting white finishes for interiors of schools, hospitals, factories, etc. Supplied in gloss, eggshell and flat finishes — all easily washed.

Everseal Lead, Zinc and Titanium Paint

An exterior paint of finest quality — 100% lead, zinc and titanium pigments, ground in pure linseed oil. Will retain its smooth gloss finish under extreme weather conditions. Made in fourteen attractive sun-fast colors.

Everseal Concrete and Stucco Paint

Waterproof, decorative flat finish for exterior and interior concrete, brick, stucco and other masonry surfaces. Furnished in twelve alkali-proof, permanent colors.

Everseal Floor Enamel

Elastic, hard wearing, attractive gloss finish for concrete, wood and linoleum floors. Supplied in eight standard colors.

Everseal Four Hour Enamels

Quick drying, brilliant gloss finish for general interior or exterior use on walls, woodwork, furniture, equipment, etc. Made in fourteen colors.

Everseal Structural Steel Paints

A complete line of Everseal protective finishes for steel is offered in both shop and field coats. These include red and blue leads, oxides, asphaltums, chromates, etc.

Everseal Casein Paint

A casein paste paint of finest quality for walls, ceilings and all interior surfaces. Dries in 40 minutes and one coat covers.

Everseal Hot Surface Paint

A jet black gloss protective finish for hot metal surfaces — stacks, boiler fronts, flues, etc. Withstands temperatures as high as 700 degrees Fahrenheit.

Everseal Varnishes

Varnishes of fine quality for every conceivable use — interior and exterior spar, damar, synthetic, etc.



FIRST PRIZE INTERNATIONAL EXPOSITION
BARCELONA, 1929

EVERSEAL WATERPROOFING AND DAMPPROOFING PRODUCTS



FIRST PRIZE NATIONAL EXPOSITION
SALONIKA, GREECE, 1933

Everseal Transparent Waterproofing

A clear, transparent liquid for brick, concrete, stucco, stone and other porous masonry surfaces. Effectively renders these surfaces water repellent without affecting their texture.

Everseal Heavy Bodied Transparent Waterproofing

A heavy, transparent waterproofing liquid recommended for brick, concrete, stone, etc. of more than average porosity. Assures maximum sealing and waterproofing action possible with transparent coatings.

Everseal Caulking Compound

A permanently elastic, waterproof, non-staining compound furnished in knife and gun consistencies. Perfect adhesion to all surfaces and elasticity unaffected by extreme or sudden temperature changes. White, gray and natural shades; also black.

Everseal Dampproofing and Plasterbond

A black, tacky, elastic interior dampproofing and plasterbond for weather exposed brick or terra cotta walls above grade which are to receive hard wall or lime plasters. Furnished in three types — liquid, semi-mastic and mastic.

Everseal Liquid

An asphalt fibrous coating of exceptional quality and durability for brush application to roof surfaces, parapets, foundations, etc. Extremely elastic; will retain its rubber-like film without cracking or running under severe temperature changes and exposure conditions. Made in black, red, and green.

Everseal Plastic

Asphalt fibrous cement for trowel application to roofs, foundations or any surface requiring effective waterproofing. Ready for use.

Detailed specifications and technical data on "F.W.B." and Everseal Paint, Varnish or Waterproofing products will be sent upon request. Our laboratory and technical staff is always available for special problems.

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Manufacturers of Gold Leaf for Architectural Application Since 1820

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CHICAGO, ILL., Hastings & Company

NEW YORK, N. Y., W. H. Kemp Co.

Gold is one of the oldest decorative mediums known to architecture. Its beauty is important but its primary value to the architect is its durability. Gold, in the form of gold leaf, is economically practical in modern architecture because the art of the gold beater produces, from one ounce of gold, enough gold leaf to cover approximately 200 sq. ft. A single "coat" of gold leaf is all that is usually necessary.

As a result of the care exercised in manufacturing processes, Hastings Gold Leaf meets all Government specifications and requirements.

HOW GOLD LEAF IS SPECIFIED AND APPLIED

Trades Applying Gold Leaf

Decorators usually have in their employ gilders experienced in the application of gold leaf. It is well, however, in order to make sure of the competency of the gilder, to request samples of various finishes, references, and the location of actual gilding he has done. An average gilder working on a flat surface can lay 144 sq. ft. a day, but on uneven surfaces an allowance must be made for greater care. For work on domes and towers it is advisable to engage the services of a steeplejack experienced in the laying of gold leaf.

Preparation of Surface

Gold leaf can be successfully applied to any surface which will take a coat of paint. The gilder should be consulted on the preparation of the surface. Any surface intended for the application of gold leaf should be made non-absorbent; for example, plaster should be painted and sized. Where absorbent surfaces are to be gilded the surfaces must be carefully treated so that moisture cannot enter from any direction. The back as well as the front of a wooden surface should be sealed. The coat of sizing and the gold leaf should simply be considered as an "extra" coat; in other words, prepare your surface exactly as though it were going to have to "stand up" without the protection of gold leaf.

Specifications

The only way of obtaining a permanent gold color is to specify "Genuine 23-karat Gold Leaf." There are two other karats of gold leaf available, "Lemon Gold" 18½-karat and "Pale Gold" 16-karat. These should never be specified for exterior work because they will tarnish. They are also considerably lighter in color. Genuine 23-karat Gold Leaf will *not* tarnish. The effect of gold leaf is sometimes obtained by the use of paint, Composition Leaf (also known as Imitation Gold or Dutch Metal), and Aluminum Leaf overpainted with lacquer. These substitutes tarnish or fade rapidly.

The gilder should be consulted before the finish for the gold leaf is specified. On glass many different and beautiful effects are possible. On other surfaces variety is usually confined to "overstaining" and "antiquing," effects obtained by the use of stains in varnish or shellac.

If an unusually brilliant effect is desired, gold leaf may be burnished or rubbed.

Maintenance

Gold leaf requires little if any care, except where it is subject to smoke and fumes which cause deposits of dirt and soot. Washing with mild soap and water will restore the original brilliance.

Gilded surfaces damaged by structural cracks, leakage, or other accidents can be repaired, but it is difficult to get a perfect match.

Costs

It is impossible to give exact costs for gold leaf work because of the variation in local labor rates and the somewhat unstable price of gold. However, it is safe to estimate that gold leaf can be laid on flat surfaces or in not too intricate designs for approximately one dollar per square foot. This estimate includes cost of material and labor.

Research Department

Hastings & Company have a thoroughly experienced Research Department which is at the disposal of architects for the purpose of answering questions, furnishing samples, or conducting experiments.

A 16-page book "Gold Leaf in Architecture" will be sent on request.

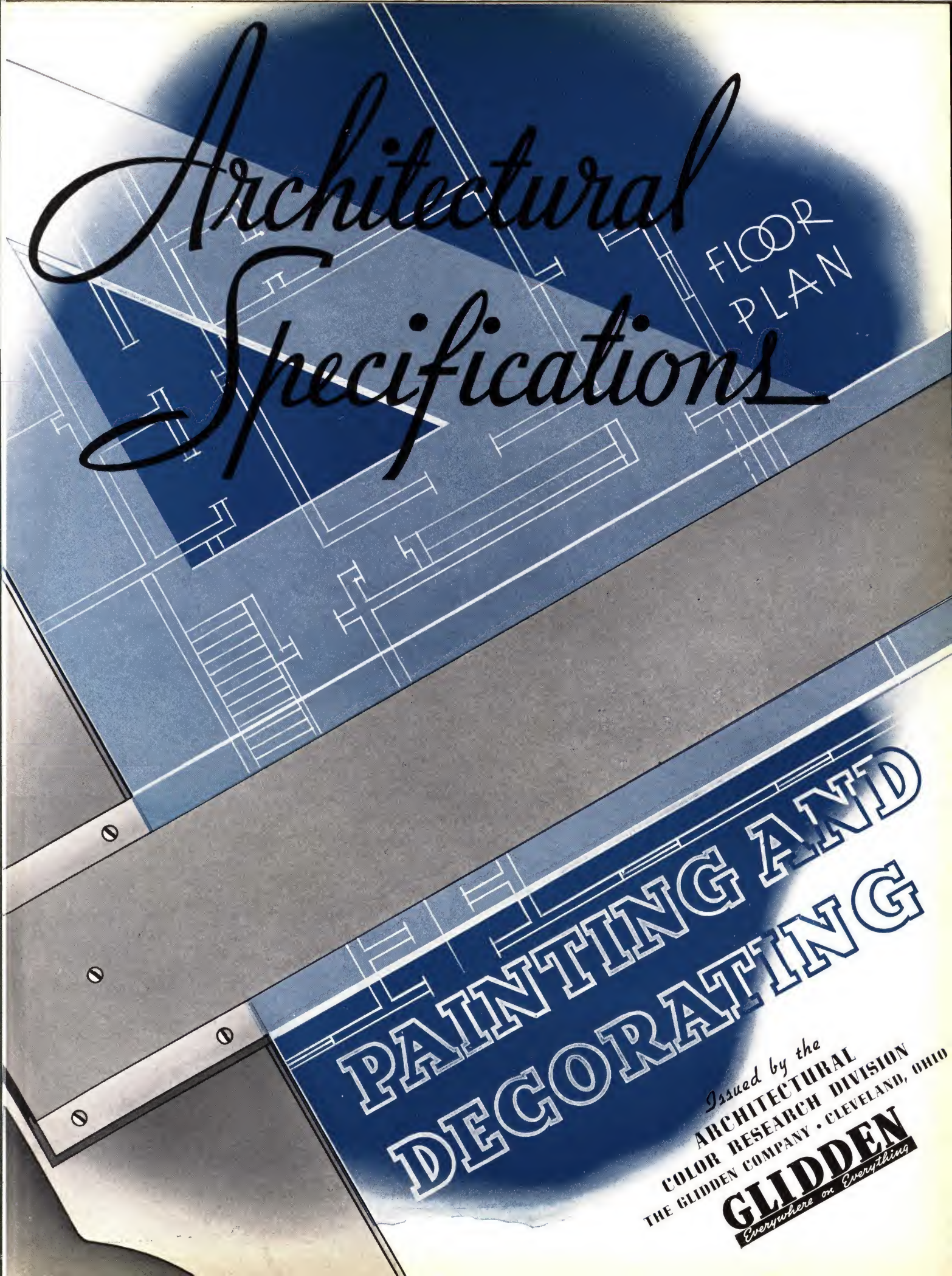


S. S. Kresge Co. achieve a striking modern store-front effect by using Hastings genuine 23-karat gold leaf on raised letters against a red background with valances and glass lettering done in Hastings Palladium leaf—the new, tarnish-proof "white metal" leaf.



A rich, warm light and beautiful reflective effects are achieved by the use of gold leaf in the ceilings of RKO Center Theatre in New York.

Reinhard & Hofmeister, Corbett, Harrison & MacMurray, Hood & Fouilhoux, Architects


Architectural
Specifications
FLOOR
PLAN
PAINTING AND
DECORATING
Issued by the
ARCHITECTURAL
COLOR RESEARCH DIVISION
THE GLIDDEN COMPANY • CLEVELAND, OHIO
GLIDDEN
Everywhere on Everything

THE GLIDDEN COMPANY

Established in 1870

MANUFACTURERS OF ARCHITECTURAL FINISHES
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THE COMPANY . . . Since 1870 the name Glidden has been synonymous with fine paint, varnish, and lacquer products. The scientific training and practical experience of many men, plus every modern mechanical improvement, make each Glidden Product representative of the most advanced achievement in paint manufacturing.

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LABORATORIES . . . A corps of chemists and trained men constantly perfect new Glidden Products, and check production all along the line to insure uniformity of quality. Glidden laboratories are large and fully equipped with all the scientific instruments for formulating paints to the exacting standards of Time-Tested Laboratories.

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GLIDDEN PAINTS ARE USED ON FAMOUS BUILDINGS AND STRUCTURES THROUGHOUT AMERICA



Local Representative for Glidden Paints

MANUFACTURING . . . Back of Glidden products are the great resources of an organization with nearly seventy years of manufacturing experience. Immense buying power and large scale production with modern machinery enable The Glidden Company to market paint that represents the maximum in quality at a minimum cost.

ARCHITECTURAL SERVICE DEPARTMENT . . . The Glidden Company maintains an Architectural Service Department, where paint problems of the architect are handled by the Glidden Architectural Consultant, who has direct access to a modern finishing room where materials may be tested for practical use. The Architectural Consultant welcomes, at any time, an opportunity to co-operate with the architect in solving painting problems.

SERVICE . . . Glidden factories and warehouses are located strategically throughout the United States and Canada. Delivery to any point on the American continent means no more than a short, economic haul, saving both time and expense. Because of tremendous paint sales, these factories and warehouses maintain large complete stocks at all times. Glidden gives the architect the service he demands.

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RECOMMENDED GENERAL INSTRUCTIONS

Suggestions to aid the architect in preparing complete painting specifications. If written into the specifications, they will help to insure that the painting work is done correctly.

---

1. GENERAL PAINTING CLAUSE . . . Be it understood that the Instructions to Bidders and the General Conditions applying on the General Contract apply also on the painting contract.

2. WORK TO BE DONE . . . The work required under a painting contract includes the furnishing of all materials, labor and equipment of every nature which may be required for the proper painting and finishing of the building, all as hereinafter specified, shown on the plans, or implied in either plans, or specifications; that the work be complete in every respect unless definitely excepted by the architect.

3. WORK NOT INCLUDED IN THE PAINTING CONTRACT. N. B. . . . At this point it is well to make a bill of exceptions showing exactly the surfaces which do not come under the painting contract; for example, the back of interior wood trim, which has been shop primed by others.

4. PREPARATORY WORK . . . All surfaces to be painted shall be in proper condition before the work is begun; that is, the surface shall be perfectly dry, clean and smooth. In case any work is defective, or unsuitable for finishing, the painting contractor shall notify the architect of the fact in writing. If the architect is not so notified, the painting contractor will be held solely responsible for the finished condition of the work.

5. SAMPLES. N. B. . . . In case it will be necessary for the proper completion of the work to match certain samples, the architect should at this point fill in his requirements as to samples which will serve as standards to be matched in finish, color, etc.

6. WORKMANSHIP . . . All work under this contract shall be executed only by concerns of standing approved by the architect. All work shall be made perfect in material, workmanship and finish. All work shall be done by skilled mechanics. No work shall be done under conditions of weather, or temperature, unsuited to good work.

7. MATERIALS . . . All materials coming under the painting contract shall be delivered to the building in unbroken packages, bearing the Glidden name and label. Such materials should be used without any adulteration, and only with such thinning as called for in the manufacturer's directions. In case of sealed packages, the seal should not be broken until the contents are to be used. Materials requiring mixing shall be mixed on the premises. All materials must at all times be subject to the inspection and approval of the architect.

8. PROTECTION AGAINST DAMAGE . . . The painting contractor shall be responsible for the condition of the building in his charge. Due care shall be taken while painting is in process to protect all portions of the building and also all materials belonging to, or installed by, other contractors.

9. PATCHING . . . Carefully patch and finish all work injured, or marred from whatsoever cause, to the satisfaction of the architect. Upon completion the entire job should be in perfect condition and free from defacements of any nature.

10. FIRE PREVENTION . . . *Keep all oily rags or waste in covered metal receptacles.*

11. CLEANING . . . At the completion of work, remove all surplus materials, staging, rubbish, etc.; clean off all paint, varnish, stains, etc., from floors, glass, walls, hardware, etc., and leave the premises in perfect condition, acceptable to the architect.

SUMMARY . . . No paint, varnish, or other finish should ever be applied to a surface containing moisture or bearing scale, rust, dirt, grease—or to any surface not clean and ready to paint.

Any possible alkalinity in plaster, cement, or concrete surfaces must be neutralized.

Neutralize the alkali by giving the wall a wash coat with a solution of two to three pounds of zinc sulphate to a gallon of water.

All nail holes, cracks, etc., must be properly filled with linseed oil putty.

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RIPOLIN ENAMEL

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EXTERIOR FINISHES

WOOD SIDING . . .

GLIDDEN ENDURANCE PAINT ***(Prepared)*** is as nearly perfect a paint as it is possible to manufacture. It is a ready mixed, ready to use House Paint, which combines the long wearing qualities of lead with the film hardening qualities of zinc.

Glidden Endurance Paint (Prepared) works easily, covers well, resists wear and weather, has extreme durability, leaves a good uniform surface for repainting and costs less than other house paints when measured by years of service.

Glidden Endurance Paint covers approximately 400 to 425 square feet per gallon, 2 coats.

Base-Coat—New wood should be primed with Glidden Base-Coat. The use of this specially prepared first coater eliminates blistering and peeling, and insures longer wearing and better finished results on any kind of wood, particularly the porous, resinous and sappy types.

Base-Coat covers approximately 300 square feet per gallon, 2 coats.

New Work, *Specification 1*

1st Coat—Glidden Base-Coat applied as it comes in the container. (Under no condition should this material be reduced.) Allow 72 hours to dry.

NOTE: After the priming coat has dried thoroughly, putty all nail holes, cracks, etc. with a first quality linseed oil putty.

2nd Coat—Brush on coat of Glidden Endurance Paint (Prepared) thinned with a pint of turpentine to each gallon. Allow this coat to dry 72 hours or more.

3rd Coat—A well brushed out coat of Glidden Endurance Paint (Prepared) as it comes in the container.

Old Work

The surface to be repainted shall be dusted free from all foreign matter, loose paint removed by wire brushing and scraping, and rust removed from all eaves, downspouts, or flashings. Loose boards or siding shall be renailed and repairs made to siding over drip caps and window and door headers. The open spaces around door casings, windows and corner boards shall be puttied.

Specification 2

1st Coat—Apply Base-Coat over the entire surface, working it well into all spots that have become bare. (Alternate:—If Base-Coat is not available reduce Glidden Endurance Paint (Prepared) with one quart of linseed oil and one pint of turpentine to each gallon for application to the south and west sides of the house and with one quart of turpentine and one pint of linseed oil for the east and north sides.)

2nd Coat—This final finishing coat shall be Glidden Endurance Paint (Prepared) as it comes in the container.

TITAN-O-ZINC is made with titanated pigments which give great hiding quality and a brilliant whiteness. It is offered as an alternate to Glidden Endurance Paint (Prepared) for those who prefer a paint with Titanium base instead of Lead. It is recommended in smoky districts where fumes are prevalent. It is regularly supplied only in white but may be colored as desired by adding Glidden Pure Colors in Oil.

Titan-O-Zinc covers approximately 400 to 425 square feet per gallon, 2 coats.

Specification 3

Same as Specification 1 substituting Glidden Titan-O-Zinc in place of Glidden Endurance Paint (Prepared) in second and third coats.

RIPOLIN ENAMEL. . .(See Ripolin Section—*Specification 13*)

EUSTON WHITE LEAD is a lead of unusual whiteness. It produces a smooth and enamel-like film. Euston White Lead is pure carbonate of lead made by a secret patented process that controls its whiteness and fineness, which in turn governs its unusual spreading capacity and ability to produce more paint per hundred pounds. Furnished in three forms: Heavy Paste; Soft Paste; and All-Purpose. (Specifications furnished on request.)

WOOD SHINGLE SIDING AND ROOFS

ENDURANCE SHINGLE STAINS are high grade creosote stains used to prevent warping, curling, splitting and general decay of the wood as well as supply permanent and decorative color.

Brushing: — Endurance Shingle Stains cover approximately 150 square feet per gallon, 1st coat; 100 square feet per gallon, 2nd coat.

Dipping:—Two-thirds dip on 1000 shingles will require approximately 3 gallons of Stain.

New Work, *Specification 4*

1st Coat—Dip two-thirds of the length of the shingle into Endurance Shingle Stain of consistency supplied by Glidden. Stack loosely to allow proper penetration and drying.
2nd Coat—After shingles are laid apply one full brushing coat of Endurance Shingle Stain as it comes in the container.

Old Work

On old work Endurance Shingle Stains can be applied by either brushing or spraying although the brushing application is recommended. Particular care shall be exercised to see that all portions, particularly the edges of the shingles, are well coated.

Two coats are recommended and in such instances the first coat shall be reduced 25% with raw linseed oil.

COMPOSITION ROOFS . . .

ENDURANCE ROOF COATING is a pure asphalt suitable for reconditioning and waterproofing all types of composition roofs. Insures protection against water, weather, alkali, common acids, gases, fumes, etc. Applied with regular roof brushes.

●

EXTERIOR WOOD SURFACES (Varnished)

Including Porch Ceilings, Doors, Trim, Etc.

GLIDDEN OIL STAINS are permanent, non-fading pigmented stains that require but little wiping and are recommended for all exterior work.

Glidden Oil Stains cover approximately 800 square feet per gallon, 1 coat.

GLIDDENSPAR is recommended as the finest varnish available today for either interior or exterior use. It is made from bakelite and synthetic type resins which are the latest developments in varnish research and manufacture.

EXTERIOR FINISHES (Cont'd)

Gliddenspar is pale in color, will not turn white from water, and is impervious to alcohol.

Specification 5

1st Coat—After sanding wood to a smooth surface, brush on a coat of Glidden Oil Stain. Wipe off excess stain with a soft cloth. Allow 24 hours to dry.

2nd Coat—(Open grained wood only) Sand and fill with Glidden Paste Wood Filler reduced as needed with turpentine or naphtha. Wipe before Filler becomes hard, rubbing across grain and hard enough to force the Filler into the pores and remove excess.

3rd Coat—Brush on one coat of Gliddenspar Varnish in the consistency as supplied by the manufacturer and allow to dry.

4th Coat—(Same as 3rd Coat.)

NOTE: Don't use Shellac anywhere in a schedule embracing Synthetic Varnishes.

WOOD PORCH FLOORS . . .

PORCH AND DECK PAINT is a wear-resisting, protective and decorative coating for exterior porch floors.

Porch and Deck Paint covers 600 to 700 square feet per gallon, 1 coat.

Specification 6

1st Coat—One brush coat of Glidden Porch and Deck Paint thinned with one quart of pure linseed oil and one pint of pure turpentine to the gallon.

2nd Coat—After 72 hours, apply a full flowing coat of Glidden Porch and Deck Paint thinned with one pint of pure turpentine to the gallon.

3rd Coat—Allow 48 hours for drying and apply a full coat of Glidden Porch and Deck Paint as it comes in the container.

CONCRETE, STUCCO and BRICK . . .

LIQUID CEMENT COATING is for damp-proofing and rendering uniform exterior surfaces of concrete, stucco, etc. It is composed of carefully selected pigments and specially prepared oils which produce an extremely durable and water-resisting semi-gloss finish.

Liquid Cement Coating covers 300 to 500 square feet per gallon depending on the porosity and texture of the surface.

New Work, *Specification 7*

1st Coat—To each gallon of Glidden Liquid Cement Coating add one pint of Glidden Liquid Cement Mixing Liquid and brush well into the surface. Allow 36 to 48 hours to dry.

2nd Coat—Brush on a coat of Liquid Cement Coating as it comes in the container. Allow 72 hours for drying.

3rd Coat—One additional coat brushed on evenly (as supplied by the manufacturer.)

OLD WORK

Remove all loose paint from old surfaces. Touch up bare spots with Glidden's Liquid Cement Coating that has been thinned 25% with Liquid Cement Mixing Liquid.

Specification 7A

1st Coat—Apply one coat of Liquid Cement Coating, of color selected, to the entire surface after having reduced it in the ratio of four to one with Liquid Cement Mixing Liquid.

2nd Coat—The second coat shall be Liquid Cement Coating applied full body and brushed well onto and into the surface.

STRUCTURAL STEEL AND METAL ORNAMENTS . . .

LIQUID RED LEAD is recommended wherever a shop coat of red lead is specified. It comes ready to apply, is extremely elastic, and is an excellent rust preventative.

NEV-A-RUST embodies every requirement of a high grade metal protective paint. It is the result of years of research and observation of the product in actual use.

Nev-A-Rust covers 600 to 700 square feet per gallon, 1 coat.

The combination of these two materials, if applied as hereafter specified, will adequately protect all the coated metal of any structure from the destructive elements.

NOTE: It is impossible to overestimate the need of an absolutely clean and rust-free steel which must be obtained by thorough sand blasting or wire brushing.

Specification 8

Shop Coat—A priming coat of Glidden Liquid Red Lead as it comes in the container to be applied at the mill.

1st Field Coat—A brush coat of Glidden Nev-A-Rust, of color selected, as it comes in the container.

2nd Field Coat—(Same as 1st Field Coat.)

NOTE: By alternating the colors of the material used in the Field Coats, the architect secures a color contrast between the coats which insures thorough workmanship on inspection.

GRAPHITE LIQUID PAINT is recommended for use on any metal surface. It is offered as an alternate to Nev-A-Rust for those who prefer a graphite base paint for this use. Its heat resisting qualities make it especially good for painting chimneys, boilers, etc.

Specification 9

Same as Specification 8 substituting Glidden Graphite Liquid Paint for Glidden Nev-A-Rust.

METALLITE (Aluminum Paint) is a product of unusual covering and hiding ability excellent for all exterior surfaces both hot and cold. It may be used as a priming coat to be covered with Glidden Endurance Paint (Prepared) or other exterior paint or it may be used as a finish coat over Glidden Nev-A-Rust or Base Coat where an Aluminum finish is desired.

GALVANIZED IRON . . . *Specification 10*

The galvanizing process leaves on the surface of the iron a film to which most paint will not adhere. It is therefore, necessary to prepare galvanized iron in a special way, no matter what the final coats may be.

The most satisfactory method of preparing the iron is to apply a brush coat of the following solution: dissolve 1 ounce each of Chloride of Copper, Sal Ammoniac and Nitrate of Copper in ½ gallon of water in an earthenware vessel. When dissolved, add 1 ounce of Hydrochloric Acid. Allow 24 hours to dry and then use a stiff brush to remove the powder which has formed.

Best results are obtained by immediately following with one coat of Glidtite Galvanized Iron Primer.

Follow with Glidden Endurance Paint (Prepared), Nev-A-Rust or other exterior paint.

EXTERIOR FINISHES (Cont'd)

SMOKE STACKS, PIPES and OTHER HOT SURFACES . . .

SMOKE STACK BLACK is so formulated that it will bake hard to the metal, practically becoming a part of it and forming an excellent protective film.

Specification 11

One Coat—Remove all grease spots and foreign matter from the surface and brush on one heavy coat of Glidden Smoke Stack Black of a consistency as supplied by the manufacturer.

METAL ROOFS . . .

TINNER'S RED is a popular sheet metal paint, permanent in color and absolutely waterproof. It is quick-drying and elastic; withstands rigid metal bending tests.

Covers approximately 700 square feet per gallon, 1 coat.

Specification 12

One Coat—Remove all rust, scale, grease, dirt, etc. from the surface. Apply one coat of Tinner's Red as it comes in the container.

NEV-A-RUST . . . *(See Specification 8)*

GUTTERS, DRAINS and FLASHINGS . . .

(See Specification 8)

RIPOLIN ARCHITECTURAL ENAMELS

For Fine Exterior and Interior Enamel Finish

RIPOLIN is internationally known as a fine, durable enamel. The secret process by which it is manufactured, together with the aging of the essential oils, makes BLT Ripolin Enamel a super-product.

It actually improves with age; there are numerous public buildings and fine homes in the United States where 15 years of continuous service have not dimmed the lustre and beauty of Ripolin.

The ever increasing demand for a quicker-drying product resulted in Q.D. Ripolin which was developed after years of careful research. Q.D. Ripolin dries in a much shorter length of time than BLT Ripolin but still retains all of its outstanding qualities.

Q.D. Ripolin is manufactured in 18 washable, modern colors, carefully selected by authorities on architure, and color harmony. This enamel smoothes away to a glossy, tile-like finish, free from brush marks and will give lasting beauty to all surfaces where a high grade enamel finish is desired. Ripolin is furnished in High Gloss, Semi-Gloss (Egg-shell) and Dead Flat White. Any finish desired between the High Gloss and Dead Flat can be obtained by intermixing in varying proportions. To obtain any of the lighter shades, White Ripolin may be tinted by the use of pure color ground in Japan, thinning down the color with a small quantity of turpentine and adding slowly to the enamel until the desired color is obtained. The addition of a large amount of coloring matter to obtain any of the darker shades is not recommended. We will supply darker shades on order.

Where Ripolin is to be used in colors, Ripolin Undercoat tinted the same shade as the finishing coat should be used.

Ripolin of itself will show a perfectly smooth, even surface without brush-marks, but will not cover irregularities in the under-coating. For this reason great care should be exercised to keep the working pots, brushes and surface to be worked on free from dust, grit, or other foreign matter. For extremely fine work, where there are two coats of enamel to be applied, the first coat of enamel should be rubbed with pumice rather than with sandpaper or steel wool.

Do not thin the finishing coat of Ripolin.

NEW EXTERIOR WORK . . .

Exterior finishes on Ripolin-enameled homes are extremely durable with permanency of lustre and depth of beauty. A Ripolin surface because of its enamel-like finish does not hold the soot and grime. It cleans easily and always maintains extreme whiteness.

Ripolin First Coat covers approximately 300 square feet per gallon, 2 coats. Exterior Ripolin covers approximately 360 square feet, 2 coats.

Specification 13

1st Coat—A priming coat of Glidden Base-Coat applied without reduction as it comes from the container. Allow 72 hours for drying.

2nd Coat—A full coat of Exterior Ripolin First Coat. Allow 72 to 96 hours for drying.

3rd Coat—Exterior Ripolin First Coat reinforced with 1 quart Exterior Gloss Ripolin to the gallon. Allow 96 hours for drying.

4th Coat—A good full coat of Exterior Gloss Ripolin as it comes from the container.

NOTE: Third coat may be eliminated where cost is a vital factor.

NEW INTERIOR SOFT WOOD . . .

Specification 14

1st Coat—A priming coat of Ripolin Enamel Undercoat, thinned with 1 quart of raw linseed oil and ½ pint of pure turpentine to the gallon. Allow 48 to 72 hours for drying.

2nd Coat—Full coat of Ripolin Enamel Undercoat. Allow overnight to dry.

3rd Coat—Full coat of Ripolin Enamel Undercoat. Sandpaper this coat to a smooth surface.

4th Coat—Ripolin Enamel Undercoat reinforced with ½ gallon Gloss Ripolin added to the gallon. Sandpaper lightly after drying.

5th Coat—A good flowing coat of Ripolin Enamel. This coat may be thinned with ½ pint of pure turpentine to the gallon. Allow 96 hours for drying; rub smooth with pumice and water.

RIPOLIN ARCHITECTURAL ENAMELS (Cont'd)

6th Coat—A good flowing coat of Ripolin Enamel as it comes in the container. DO NOT THIN FINISHING COAT OF RIPOLIN.

NOTE: If expense is of prime importance, 2nd or 5th coats may be omitted, or, if desired, both.

NEW INTERIOR SAPPY WOODS . . .

Specification 15

1st Coat—A priming coat of Ripolin Enamel Undercoat, thinned with 1½ pints of raw linseed oil and 1½ pints pure turpentine to the gallon. Allow 48 to 72 hours for proper drying.

NOTE: After applying first coat, all woodwork should be thoroughly rubbed down with fine sandpaper or steel wool.

NEW INTERIOR OPEN-GRAINED WOODS

Specification 16

1st Coat—A coat of Glidden Paste Wood Filler should be rubbed well into the surface. After this is dry and hard sandpaper the work thoroughly.

2nd Coat—A priming coat of Ripolin Enamel Undercoat, thinned with 1 pint of raw linseed oil and 1 pint of pure spirits of turpentine to the gallon; sandpaper to a smooth surface after thorough drying. Follow Specification 14 from this point.

INTERIOR WALL FINISHES

PLASTER WALLS (ROUGH and SMOOTH) and WALL BOARD . . . *General Instructions*

All wall surfaces should be carefully checked for "hot" spots caused by excessive lime in the body coat. A litmus paper or phenolphthalein applied to those spots that indicate an alkaline condition should be used to prove whether such a condition exists. All plaster on which "hot" spots appear should be washed previous to the painting with a neutralizing solution made of at least 3 pounds of zinc sulphate dissolved in a gallon of water. Allow this application to dry thoroughly and brush all zinc crystals from the surface.

New walls should be carefully pointed up before priming, cracks should be widened to at least ¼", and filled flush to the surface with a mixture made of ¼ part of plaster of Paris to ¾ parts of whiting by weight. This is mixed to an easy working consistency by the addition of a good grade of varnish. Quick setting of the mixture indicates too much plaster of Paris and the addition of more whiting and varnish will ease working conditions.

FLAT WALL FINISHES . . .

SPEED-WALL FLAT is manufactured in 14 modern pastel shades. It dries to a soft finish with a slight sheen that indicates its washability.

Speed-Wall Flat covers approximately 400 square feet per gallon on smooth plaster, 1st coat. 450 to 600 square feet per gallon on smooth plaster, 2nd coat.

New Work, *Specification 17*

1st Coat—Speed-Wall Mixing Size to which has been added an equal amount of Speed-Wall Flat in the color selected for finishing coats. Allow overnight to dry.

2nd Coat—Speed-Wall Flat as it comes in the container.

Allow overnight to dry.

3rd Coat—(Same as 2nd Coat.)

CASEIN PAINT . . .

REFLECT-O-LITE is a paint furnished in semi-paste form that differs from other types of water paints in that casein is used in making the vehicle and has the faculty of producing unusual adhesion. Its pigment is lithopone commonly used in practically all types of wall finishes.

Reflect-O-Lite covers solidly with one coat and has no lingering or strong penetrating odors. The instances where size is necessary are few. Reflect-O-Lite is quick drying. It is economical because it can be thinned with water but in this respect it is different from Kalsomine because it is washable.

New Work, *Specification 18*

Surface Preparation—Only in those instances where there are indications of uneven suction or porosity of the surface is a primer necessary. When priming is recommended use Speed-Wall Interior Base-Coat. After primer has dried apply one coat of Reflect-O-Lite after reducing each gallon of this material with one-half gallon of water.

2nd Coat—In extreme cases a second coat may be advisable.

Old Work

Surface Preparation—The surface to be painted shall be cleaned free from dirt and grease while loose paint, Kalsomine, and other foreign matter shall be entirely removed. Fill all cracks, nail holes and damaged spots with Patching Plaster. Prime all patches.

Add one part of water to two parts of Reflect-O-Lite slowly and stir continually until evenly mixed. Apply by brushing, flowing out evenly to avoid brush marks.

SEMI-GLOSS WALL FINISHES . . .

SPEED-WALL SEMI-GLOSS is a quick-drying, low-lustre finish, highly recommended for use in hospitals, hotels, public buildings, schools, apartment houses, offices and homes. It can be washed repeatedly and easily without harming the finish.

Speed-Wall Semi-Gloss covers approximately 400 square feet per gallon on smooth plaster, 1st coat. 500 to 525 square feet per gallon on smooth plaster, 2nd coat.

New Work, *Specification 19*

1st Coat—Apply Speed-Wall Interior Base-Coat reduced in the proportion of one quart of naphtha to the gallon. Four hours drying time is sufficient with good drying conditions.

2nd Coat—Speed-Wall Semi-Gloss as it comes in the container.

Allow overnight to dry.

3rd Coat—(Same as 2nd Coat.)

GLOSS WALL FINISHES . . .

SPEED-WALL GLOSS is a high grade wall finish with easy working properties and is very well

INTERIOR WALL FINISHES (Cont'd)

adapted to kitchen and bathroom walls and other surfaces that must be washed or cleaned frequently.

Speed-Wall Gloss covers approximately 400 square feet per gallon on smooth plaster, 1st coat. 500 to 550 square feet per gallon on smooth plaster, 2nd coat.

New Work, *Specification 20*

1st Coat—Apply Speed-Wall Interior Base-Coat, reduced in the proportion of one quart of naphtha to the gallon.

2nd Coat—Speed-Wall Gloss as it comes in the container. Allow overnight to dry.

3rd Coat—(Same as 2nd Coat.)

Old Work, Flat, Semi-Gloss or Gloss

All old surfaces shall be carefully cleaned free from grease, smoke and other foreign matter.

Surface Preparation.—Large cracks shall be filled with plaster of Paris and then sized with either Speed-Wall Interior Base-Coat or Shellac.

Specification 21

1st Coat—Reduce Speed-Wall Interior Base-Coat 25% with naphtha for a primer sealer coat.

2nd Coat—Apply Speed-Wall, Flat Semi-Gloss or Gloss, in the consistency found in the package.

3rd Coat—If a third coat is necessary this too shall be Speed-Wall in the sheen selected, applied full body.

RIPOLIN ENAMEL . . . (See Ripolin Section—*Specification 14*

CANVAS COVERED WALLS . . .

Follow same specifications as for New Plaster No. 17.

WOOD PANEL WALLS . . .

ENDURANCE WOOD STAINS are penetrating stains which greatly enhance the natural beauty of all woods. They require no wiping.

Endurance Wood Stains cover approximately 1000 square feet per gallon, 1 coat.

Specification 22

1st Coat—A full coat of Endurance Wood Stain of the color selected.

NOTE: On open-grained woods apply a wash coat of shellac after stain is dry. Fill with Glidden Paste Wood Filler reduced, as needed, with turpentine. Wipe, rubbing across grain, as filler sets. Sandpaper to a smooth surface.

Succeeding Coats—Two or more coats of Wearette Varnish, of a consistency as supplied by Glidden, until desired finish is obtained.

NOTE: Flat Finish . . . LIK-A-RUB dries with a rubbed or egg-shell effect without the expense of the very costly rubbing operation. Apply as a final finish coat after application of Wearette Varnish.

Lik-A-Rub covers approximately 400 square feet per gallon, 2 coats.

Metal Surfaces

Metal surfaces require no priming. Use one or two coats of Speed-Wall in the desired sheen just as it comes from the can.

FACTORY INTERIOR WALLS . . .

SPRAY-DAY-LITE—An unusual mill white in either Semi-Gloss or Gloss which will cover any surface no matter how smoky or black, in one coat; be free from sags, runs, chipping or peeling of solid surfaces; wash like tile; give three to eight years service. Suitable for use on wood, concrete or steel.

Spray-Day-Lite is made in three forms: (1) Regular for all surfaces under ordinary conditions; (2) Fume-proof for use where chemical or other fumes which tend to discolor the painted surfaces are present; (3) Fungi-proof for use where dampness or other conditions create mold, etc.

ADDITIONAL INFORMATION ON REQUEST

Specification 23

One Coat—Spray or brush will cover any surface and will give a high percentage of light reflection.

NOTE: For dado trim Florenamel is ideal. It has excellent coverage and adhesion to the surface and will stand constant washing. One full brush coat is sufficient on a properly sized and sealed surface.

INSULITE WHITE—a sanitary, water-proof, pure-white paint for industrial interiors.

PLI-NAMEL . . . *(See Specification 30)*

INTERIOR FLOOR FINISHES

OPEN-GRAINED WOOD . . .

FLOORETTE VARNISH is the highest grade of floor varnish manufactured: heavy body; extreme fullness; high gloss; waterproof; scuffproof, and extremely elastic. Formulated with latest types of synthetic resins.

Floorette Varnish covers approximately 400 square feet per gallon, 2 coats.

New Work, *Specification 24*

1st Coat—A full coat of Endurance Wood Stain of color selected.

2nd Coat—(Open grained woods only) A brush coat of Glidden Endurance Paste Wood Filler, thinned with turpentine or naphtha to the proper consistency. Remove all excess filler by rubbing across the grain.

3rd Coat—Floorette Varnish reduced 10% with turpentine.

Succeeding Coats—To be Floorette Varnish, applying necessary number to get desired results. Allow 24 hours between each coat.

Waxing—Apply a thin coat of Jap-A-Lac Wax with a soft cloth. Allow 20 minutes to dry and polish.

Old Work

The surface shall be cleaned free from dust, dirt, wax and all other foreign matter, as well as being perfectly dry. Portions of floor surfaces that have become worn, such as at door entrances, shall be carefully washed and bleached to remove stains.

Surface Preparation—Make as many applications of diluted stain as may be necessary to match the color of the floor surface. Open grained woods shall be filled. All stained and filled spots shall receive an application of Glidden's Floorette reduced 10% with turpentine.

INTERIOR FLOOR FINISHES (Cont'd)

Specification 25

1st Coat—The entire floor surface shall receive one coat of Glidden's Floorette reduced 10% with turpentine.

2nd Coat—After the first coat has dried 24 hours apply one full flowing coat of Glidden Floorette without reduction.

RAPID-COTE is a quick-drying All-Purpose Varnish that can be substituted for Floorette in any of the floor finishing specifications.

SOFT WOOD (Stain) . . .

(Same as Specification 24 omitting the 2nd Coat of Paste Wood Filler)

NATURAL WOOD FINISH . . .

Specification 26

1st Coat—Brush on full coat of Glidden Paste Wood Filler reduced as desired with turpentine or naphtha. (Omit Wood Filler coat on close-grained woods.) Allow to set 15 to 20 minutes and rub off excess Filler remaining on surface, wiping across the grain.

2nd Coat—After Filler is dry, apply a coat of Floorette Varnish reduced 10% with turpentine.

Succeeding Coats—Full coats of Floorette Varnish until desired effect is obtained. Allow 24 hours drying time between coats.

PAINTED WOOD FLOORS . . .

FLORENAMEL is a sanitary, extremely tough coating for interior floors; will withstand hard wear and repeated washings; made in a wide range of popular colors.

Florenamel covers approximately 500 square feet per gallon, 1 coat.

New Work, *Specification 27*

1st Coat—Glidden Florenamel, of color selected by the architect, reduced with one pint of turpentine to the gallon. Allow overnight to dry.

2nd Coat—Glidden Florenamel as it comes in the container. If additional coats are desirable, allow overnight to dry between coats.

INTERIOR PAINTED FLOORS . . .

Old Work

Specification 28

The surface shall be cleaned free from dust, dirt, wax and all other foreign matter, as well as being perfectly dry. Portions of floor surface that have become worn shall receive a coat of Florenamel in the color selected, which has been reduced 10% with turpentine.

Finishing Coat—The entire floor surface shall receive one coat of Florenamel applied in the consistency found in the can.

GYMNASIUM FLOORS . . .

New Work, *Specification 29*

1st Coat—Apply Glidden Gym Floor Varnish liberally to impregnate entire surface.

2nd Coat—After first coat has dried for 24 hours apply a second coat.

Old Work

Surface Preparation.—Clean floor of all stains, rubber burns and foreign matter.

—Apply one coat of Glidden Gym Floor Varnish.

CONCRETE FLOORS . . .

PLI-NAMEL has Pliolite as its basic ingredient. It is recognized as a long wearing finishing material for cement floors, for resistance to moisture, alkali and acid. It is very tough and will withstand hard wear.

Before applying Pli-namel, floors should be etched with a 10% dilute muriatic acid. This should be removed from the surface with water after 15 minutes.

Specification 30

1st Coat—Pli-namel requires no primer. Brush on one coat of Pli-namel, reduced 25% with mineral spirits, into the surface and allow to dry from 24 to 48 hours.

2nd Coat—Brush on a coat of Pli-namel, as supplied by the manufacturer.

NOTE: Two coats complete the average job; however, an additional coat, same as 2nd coat, may be added if required, after 24 hours of drying.

FLORENAMEL OR CONCRETE FLOOR DRESSING may be used on concrete floors where cost is a vital factor. Use Specification No. 27.

MASTICRETE is an excellent, economical product for patching or resurfacing floors, and is particularly good for repairing concrete floors in factories, warehouses and basements, and on sidewalks, loading platforms, runways, etc. It can be applied in any thickness—works down to a feather edge—and will bond securely to any clean, firm surface.

ADDITIONAL INFORMATION ON REQUEST

INTERIOR WOOD TRIM FINISHES

WOODWORK AND TRIM

HARDWOOD (Stain) . . .

WEARETTE VARNISH is a high grade varnish for the finest interior use. It is light in color, extremely elastic, and durable.

Wearette Varnish covers approximately 400 square feet per gallon, 2 coats.

New Work, *Specification 31*

1st Coat—One coat of Endurance Wood Stain, of color selected.

2nd Coat—After Stain is thoroughly dry, apply a coat of pure Shellac, that has been thinned 50% with alcohol.

3rd Coat—(Open grained wood only) Brush a coat of Glidden Endurance Paste Wood Filler thinned with turpentine or naphtha to the proper consistency. Rub off excess Filler, wiping across the grain. Allow 18 to 24 hours for drying, and then sandpaper thoroughly to a smooth surface.

Succeeding Coats—To be Wearette Varnish. Apply two or more coats to get desired results allowing 24 to 36 hours drying time between coats.

NOTE: Wearette Varnish may be rubbed down to a dull finish after drying 72 hours.

INTERIOR WOOD TRIM FINISHES (Cont'd)

NOTE: Flat Finish . . . Lik-A-Rub dries with a rubbed or egg-shell effect without the expense of the very costly rubbing operation. Apply as a final finish coat after application of Wearette Varnish.

Lik-A-Rub covers approximately 400 square feet per gallon, 2 coats.

GLIDDENSPAR is recommended for interior work exposed to severe conditions, such as window sills, bars and furnishings of hotels, clubs, restaurants, etc. and wherever a long oil varnish which will not turn white from water is required.
Use Specification 5—page 6.

RAPID-COTE VARNISH is a new synthetic, four hour varnish that dries rapidly, staying wet just long enough to permit free brushing, and that does not show brush marks or laps. It is absolutely water-proof, pale in color, elastic and very durable. It was primarily developed for floors and is capable of resisting the wear and abuse to which floors are subjected, consequently, it qualifies as a fine finish for any interior work where a quick-drying varnish is required.

Old Work, *Specification 32*

After thoroughly cleaning the surface and allowing it to dry, all chipped, scratched, stained or bare spots shall be touched up with a stain matching the color of the original finish. After such patches have been dried they shall receive a coat of shellac.

Finishing Coat—The entire surface shall receive two coats of Gliddenspar or Wearette, allowing 24 hours between coats for thorough drying.

Flat Effects—If a flat or rubbed finish is desired, the first coat shall be Glidden's Wearette followed with a final or finishing coat of Lik-A-Rub.

SOFT WOOD (Close-Grained) (STAIN)

Specification 33

(Same as Specification 31 Omitting 3rd Coat of Paste Wood Filler)

HARDWOOD (Open-Grained) Natural Wood . . .

Specification 34

1st Coat—Brush on full coat of Glidden Paste Wood Filler reduced as needed with turpentine or naphtha. Remove all excess filler by rubbing across the grain. Allow overnight to dry.

2nd Coat—Apply a wash coat of shellac.

3rd Coat—Sand with fine sandpaper and apply a full coat of Wearette Varnish reduced 10% with turpentine. Allow 24 to 36 hours for drying.

Succeeding Coats—Full coats of Wearette Varnish until desired effect is obtained, allowing 24 to 36 hours between coats for proper drying.

MISCELLANEOUS FINISHES

RADIATORS . . .

METALLITE dries with a film that closely resembles aluminum metal. It is heat-resisting and specially adaptable to radiators. Covers in one coat and dries to a smooth surface and will not collect dust or dirt.

CHROMATIZED PRIMER, as a radiator primer, has good adhesion for the metal and unusual rust-inhibiting qualities.

Specification 35

1st Coat—Brush on a coat of Chromatized Primer in the consistency supplied by Glidden. Allow overnight to dry.
2nd Coat—One coat of Metallite.

NOTE: Metallite is supplied in a compartment can and it is important that the powder be well dispersed in the vehicle before application of the material.

JAP-A-LAC GOLD AND ALUMINUM give a metallic finish and are suitable for use on hot surfaces.

SPEED-WALL FLAT is so formulated that it retains its color even after being subjected to a high temperature for a long period of time. Speed-Wall Flat is made in 14 attractive colors.

SWIMMING POOLS . . . Past experiences in the finishing of swimming pools have demonstrated the necessity of treating each pool as an individual case. If the architect will supply all the facts that the painter has to consider, the Glidden Company Architectural Service will recommend a specification that will cover the finishing of any type of swimming pool.

BARNS AND FARM BUILDINGS . . .

(*See Specification 1*)

ADDITIONAL ARCHITECTURAL FINISHES

Ad-El-Ite Hygienic Kalsomine
Ad-El-Ite Paint and Varnish Remover
Architectural Enamels
Bar and Table-Top Varnish
Barn and Roof Paint
Billings-Chapin Dricoat
Billings-Chapin Driwall
Elston Liquid White Lead
Endurance White—Semi-Paste
Flat Brick Red
Flatting Oil
Jap-A-Lac Enamel
Japan and Liquid Driers
Liquid Roof Cement
Metal Protective Paint
Paste and Semi-Paste Paints
Polishes and Waxes
Pure Colors in Oil
Ren-O-Wax
Reflect-O-Lite Washable Cold Water Paint
Shellac
Speedoleum Varnish
Titan-O-Zinc Enamel
Titan-O-Zinc White Paste Paint
Weathercote Emulsified Asphalt
Zinc-O-Lith Enamel
Zinc-O-Lith House Paint
Zone Marking Paint—Romark

FOR FURTHER INFORMATION WRITE THE GLIDDEN COMPANY, CLEVELAND, O.

GLIDDEN QUALITY

Since 1870, GLIDDEN Paints, Varnishes, Lacquers and Enamels have been known for their fine quality. NOW—that quality is doubly assured to paint buyers by the fact that all outstanding GLIDDEN Products carry the famous "TIME-TESTED" trademark, which is recognized everywhere as absolute proof of dependable quality in Paints.



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National Headquarters

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Factories and Branches in Principal Cities Throughout America

KEYSTONE VARNISH COMPANY

TELEPHONE
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Manufacturers of Paints, Varnishes and Enamels

71 Otsego Street, BROOKLYN, N. Y.

BOSTON, MASS., 146 High St.—Telephone, Liberty 7841

CHICAGO, ILL., 5219 No. Clark St.—Telephone, Long Beach 0200

Keystone Paints and Varnishes are the result of 110 years' manufacturing experience in the production of high quality products for the decoration and preservation of all interior and exterior surfaces, for all types of structures. These products are produced in a modern plant by skilled workmen, under complete laboratory control. Brief information in regard to some of the more important Keystone Paints and Varnishes follows.

KEYSTONA FLAT FINISH

A pure linseed oil flat paint, possessing extreme hiding power and giving a perfect finish with fewer coats because of its high opacity. It dries to a washable velvety finish and is available in twenty shades, white and oyster white. Recommended for walls and ceilings.

KEYSTONA SATIN SHEEN FINISH

A pure linseed oil paint, for general interior decorative use, drying with the soft gloss indicated by its name. This paint contains no varnish and thus is more readily applied and retains original color exceptionally well. Recommended for walls, ceilings and woodwork. Available in ten shades, white and oyster white.

KEYSTONA GLOSS FINISH

A pure linseed oil paint, with resultant increased stretch, elasticity and ease of brushing. It dries to a sharp gloss finish which is most washable and is available in ten shades, white and oyster white.

KEYSTONA PRIMARY COLORS

These are liquid, linseed oil, flat paints, available in Primary Blue, Primary Yellow, Primary Vermillion and Primary Maroon, and will produce by intermixing and with white, virtually all deep and light colors and tints required in modern decorative treatments.

KEYSTONA WALL PRIMING LIQUID

A clear, synthetic base liquid, to be mixed with Flat or Satin Sheen Finishes, to prepare a proper alkali resistant, complete sealing primer. By its use the necessity of tinting priming coats is eliminated, and adjustments may be made in the priming coat to properly produce a primer adapted for any inequalities of surface which may be present.

EDELVICE ENAMEL

A gleaming, pure white enamel, recommended for both interior and exterior exposure, producing a finish with unusual retention of brilliant whiteness. Available in gloss and eggshell finishes, for wood, plaster and metal surfaces.

KEYSTONE SUPERFLOW ENAMEL UNDERCOAT

A rapid drying enamel undercoating providing an ideal foundation for subsequent coat or coats of all types of enamels. It furnishes complete covering, perfect flow, easy brushing, minimum absorption of succeeding coats, and excellent adhesion. Available in white which may be tinted with colors in oil.

KEYSTONE 100 PERCENT PURE HOUSE PAINT

A pure linseed oil, multipigment paint, combining lead carbonate, zinc oxide and titanium pigment, to produce a supremely durable, exterior paint. Available in black, white, twenty-eight colors and four vivid decorative colors.

KEYSTONE HOUSE PAINT PRIMER SURFACER

A specially pigmented and formulated priming paint, producing controlled penetration. Available in white, which may be tinted to proper shade for undercoat application.

KEYSTONE CONCRETE AND BRICK PAINT

A pure linseed oil, ready mixed paint for use on stucco and cement work, concrete abutments, brick and similar surfaces, subject to exterior exposure. Dries with very little gloss. Available in eight colors and white.

KEYSTONE CONCRETE SEALER

A clear liquid, to be mixed with Keystone Concrete Paint, to prepare a primer adapted to first coats on concrete, cement, stucco and brick, controlling absorption qualities of the surface.

KEYSTONE LIDO GREENS

Exterior linseed oil paints, strictly permanent in color. For use on all surfaces where nonfading and extreme resistance to the elements is essential. Recommended for the finishing of trim. trellis, blinds, etc. Available in seven unusual shades of green.

KEYSTONE DEGRAH ENAMEL PORCH AND DECK PAINT

A deck paint recommended for both interior and exterior exposure on wood or cement floor surfaces. It is resistant to hot, cold, fresh, salt, or soapy water, also oils and alkalis. Available in ten colors.

KEYSTONE SHINGLE STAINS

Creosote base stains, furnishing preservation as well as decorative medium to shingles, roofs, and sidings. Available in eight colors. These stains do not conceal the grain of the wood, but rather bring the various graining effects into prominence and give warm and pleasing soft tones.

KEYSTONE METAL PROTECTIVE PAINTS

Particularly formulated products for proper protection of metal surfaces. Available in three distinct types of primers, three colors and black, as well as two graphite base paints.

KEYSTONE SLIKUP RAPID DRYING ENAMEL

A quick drying, hard, waterproof enamel. It dries with a high gloss, giving a durable finish that may be applied on either metal or wood surfaces. Available in a wide color range and especially adapted for use on furniture, machinery, pipe lines, metal lockers, etc. Not recommended for use as a house or trim paint.

KEYSTONE REFLEXALITE MILL FINISHES

This line of products represents the latest development in formulation and processing and is particularly designed for satisfactory service, based on extended durability, light reflection, and decorative value. Offered in gloss, semigloss, eggshell, and flat finishes, together with primers and dado enamels.

KEYSTONE ALUMINUM PAINTS

Offered in several types, including Olympic Aluminum Paint for both exterior and interior use. Silver Ray Aluminum Paint for rapid drying and decorative effects. Slikup Aluminum Enamel for interior and exterior work where a particularly smooth, glossy effect is desired. High Heat Resistant Aluminum Paint for surfaces where resistance to high heat is indicated.

Complete Specifications for Application and Color Charts are immediately available upon request, as well as Constructive Assistance in Selection of Proper Paints and Varnishes for all conditions of service. Write Keystone Varnish Company, 71 Otsego St., Brooklyn, N. Y.

HOCKADAY, INC.

The Famous Hockaday Body and Reducer—Also Varnishes and Ready Mixed Paints and Enamels

166 West Jackson Boulevard
CHICAGO, ILL.

WASHABLE WALL FINISHES

The Company—Its Reliability

Hockaday products are highly specialized materials which should not be confused either in price or quality when compared with ordinary lines of paints and varnishes. There is a suitable Hockaday product for every known surface-protecting and beautifying need. Each one of these products is made to fill a specific and exacting requirement.

All Hockaday materials, when properly used under good conditions and in accordance with directions, are certain to serve well the purpose for which they are made.

Scientific experiments and exhaustive practical tests have established the reliability of the Hockaday line, with the result that products of HOCKADAY, INC. are greatly favored and freely specified by architects.

Hockaday has been recognized for over thirty years as America's *premier wall finish*. It has been used in leading hotels, hospitals, schools, and public buildings and is a standard for beauty and durability.

Walls coated with Hockaday will wash after severe treatment for years.

7 Washable Wall Finishes

170—Hockaday Body and its Reducer
7000—Stippling Flat
7001—Stippling Semi-gloss
7002—Holland Enamel
7009—Heavy Bodied Flowing Flat
7020—Shelltone Semi-gloss Flowing
7352—Eggshell

A finish for every wall—white or colors. Ask for descriptive catalog.

Advantages of Hockaday

No sizing required.
Time and labor saved.
Lime burns blocked.
Air checks prevented.
Greater hiding power.
Greater spread.
Extra coat of paint saved.
Really washable.



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Products

SUNRAY WHITE; TRIPLE LEADKOTE PRIMER; "BREER'S" METAL COATING; "BREER'S" WALL FINISH; "BREER'S" METAL SASH PUTTY; "KINGLAZE" QUALITY WOOD SASH PUTTY; "BREER'S" CASEMENT SASH PUTTY.

Also various Interior Wall Paints.

Triple Leadkote, a Primer for Structural Steel and All Metal Work

This paint is designed as a primer for every class of steel construction where absolute protection from corrosion is required. It is composed of all pure lead pigments, which give the maximum adhesion, cohesion, and inhibition when properly incorporated with our specially processed oil vehicle.

Breer's Metal Coatings for Structural Steel and All Metals

Designed and proven to give the best steel protection, they stand the highest test when used over Triple Leadkote. Especially used for painting of bridges, standpipes, steel sash, structural steel, etc.

Over fifteen years of thoroughly satisfactory service on specified work have established irrefutably the excellent quality and entire dependability of Breer's Metal Coatings.

Specifications for Painting Steel

All steel shall be thoroughly cleaned and scraped of all metal scale, rust, grease and any other foreign substance at the shop, and shall be given one full priming coat of Triple Leadkote before erection.

After erection, the complete structure shall have two full coats of Breer's Metal Coating of colors to be selected. All surfaces which cannot be second-coated after erection shall have a field coat of Breer's Metal Coating before erection.

Specifications for Structural Steel—(1) Encased in Concrete—The steel shall be thoroughly cleaned and scraped, removing all loose metal scale or grease and other foreign substances, and shall be painted one shop coat of Breer's Metal Coating No. 202 Dark Gray. Any places where the paint film is ruptured or torn, shall be touched up after erection with No. 202 Dark Gray.

(2) Steel Encased in Brick, Terra Cotta and Limestone—Structural steel shall be thoroughly cleaned of all metal scale and grease and shall then receive one full coat of Breer's Metal Coating No. 202 Dark Gray, followed by two coats of Breer's Metal Coating, color to be selected by the architect after erection.

(3) Steel Standpipes, Tanks and Similar Structures—*Interior Painting*—Steel shall be thoroughly cleaned of all metal scale and grease and given three full coats of Triple Leadkote A, B, and C.

Exterior Painting—Apply one full coat of Triple Leadkote No. 3, followed by two full coats of Breer's Metal Coating, color to be selected.

Breer's Wall Finish

A durable flat, eggshell or gloss wall paint in twenty attractive shades. Can be washed repeatedly without impairing the color or finish.

Goes on very smoothly and freely, leaving no streaks or brush marks, and since it is an oil paint the danger of cracking and chipping is eliminated. This paint can be stippled immediately after application. One gallon covers 500 to 700 sq. ft. of surface, one coat. Put up in barrels, 5 and 1-gal. cans.

Specifications for Wall Finish

New Walls—Apply one priming coat of Breer's Wall Primer, allow to dry and then apply one or more coats of Breer's Wall Finish, either flat, eggshell or gloss. This Primer is pigmented, so that it not only stops all wall porosity, but is equal in covering to one full coat of paint.

Old Walls—All dust and dirt of a greasy nature should be removed by washing with gasoline or a solution of ½ lb. Metso in 1 gal. of water. Walls should then be cleaned with soap and water before the paint is applied. If painted walls are in good condition only one coat will be required, unless a light color is to be used over a dark color.

Sunray White—An Interior Coating

Adaptable to any interior surface material from brick to gypsum block, and to any and all types of construction. It is used extensively for offices, factories, public buildings, schools, hospitals, theaters, and wherever a durable, washable, light reflecting, brilliant, enduring surface is essential. Sunray White washes like a china dish and remains *white* an unusually long time. It will not chip, flake, or peel if applied according to our directions. For clarity, permanence, and longevity there is a record test of over 20 years behind this extraordinary Interior White.

Sunray White is furnished in undercoat and three finishes, flat, eggshell, or gloss.

Putty Should Be Specified

The failure of putty, due to cracking, wrinkling, sagging, and breaking away, can be avoided by specifying putty made to a definite formula by a special process and properly aged. The importance of putty specifications, from an architectural and engineering viewpoint, cannot be overstressed.

Breer's Metal Sash Putty

Proved by fifteen years of service and recognized by engineers as most durable. Manufactured for special use on industrial steel sash, marquises, etc. Our own special process of manufacture and aging produces a putty which works very freely under the knife, sets sufficiently on the surface for painting within a week. Will last indefinitely if properly painted.

Breer's Casement Sash Putty

For all casement sash glazing, use Breer's Casement Sash Putty.

"Kinglaze" Quality Wood Sash Putty

Widely known and used by large sash manufacturers and glaziers for bedding and setting glass in sash, doors, skylights, conservatories, etc. Guaranteed pure English chalk whiting and linseed oil, free from adulterants.

Manufactured and aged by our own special process and produces most satisfactory results.

JOHN W. MASURY & SON

Manufacturers of Paints, Varnishes, Lacquers, Enamels, Stains, Fillers, Undercoats and Property Preservatives

50 Jay Street, BROOKLYN, N. Y.

"MASTERY IN PAINTS" SINCE 1835

For five generations the mills of the Masury plant, the skilled hands of Masury craftsmen have created only those paint products which could measure up to the highest expectations of master painter and layman alike. . . . This constant adherence to the principles of manufacturing up to a standard, not down to a price, has earned for Masury the tradition of *"Mastery in Paints."* . . . The life of a Masury job is two to three times that of the ordinary paint job. Each Masury product mentioned below is made up to the highest standards and produced specifically for the purpose and the surface to be covered.

MASURY PAINTS FOR INTERIOR USE

Perfection Wall Primer and Sealer

The worth of any wall primer and sealer is measured by its ability to stick to the wall under all the surface conditions met in modern building practice; and, also, its ability to hold up and hold out the coats of paint applied over it. Coats of paint applied over Perfection Wall Primer and Sealer dry with their originally intended luster. There is no flashing or streaking due to uneven suction, because the Primer and Sealer has sealed the surface on which it was applied, no matter how porous.

Perfection Flat White (and Colors)

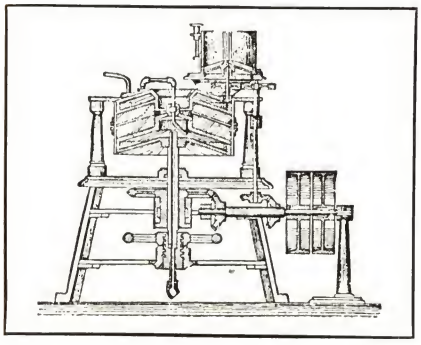
To insure the utmost economy in the use of flat wall paints, the following factors have been successfully worked out in Masury Perfection Flat White and Perfection Flat Colors: (1) Ease of mixing before application. (2) Ease of brushing. No pull is developed under the brush. (3) Minimum spray dust when sprayed; and the speed of spraying is greatly increased. (4) High spreading rate with solid hiding power. Because the white and the colors are especially strong, they will cover solidly in one coat under most conditions. (5) Slow build-up of paint thickness. The thin, strong coats of Masury's Perfection Flat Paint permit many recoatings without danger of that common type of failure which results solely from an excessive build-up of paint thickness. And the permanency of the White and the Colors, plus their washability, makes fewer coats necessary in the course of years.

Architectural White Enamel

When the painter wants unusually fine flow and mirrorlike smoothness, when he wants unusually high hiding power to enable him to cover in one coat, when he wants unusual ease in the brushing, he may turn to Architectural White Enamel with confidence. To withstand highly humid air, discoloring fumes, and other conditions of this nature which are more severe than an ordinary white enamel coating could be expected to bear, Masury's Architectural White Enamel may be specified. To this class of work it is ideally suited.

Nomar Quick Floor and Interior Varnish

Masury's Quick Floor and Interior Varnish combines three qualifications essential to the type of service for which it was designed: drying speed, resistance to abrasion, and ability to withstand alkaline washing waters. Although the drying is rapid (overnight) and the varnish coat speedily attains hardness, it remains tough and elastic over long periods under practically all conditions of indoor exposure.



Masury Paint Mill

The illustration at the left appears in the Century Dictionary. In 1870, John W. Masury was granted original patents on the first water-cooled paint grinding mill

MASURY PAINTS FOR EXTERIOR USE

Exterior White Priming Paint

This primer completely seals the surface and stops all suction —the uneven suction of winter and summer growth of wood, or the uneven suction of old paint jobs. It produces a hard, uniform surface, and gives an excellent foundation for subsequent coats. Due to these features, coupled with its extremely high hiding power, it is now possible to do a first-class two-coat job—one coat of primer and one coat of finish paint—on either new wood or old work. For exterior stucco and concrete, also, this paint is an efficient primer, and for white finishes may be used in two coats, both priming and finishing.

Masury's Outside White T

Masury's Outside White T is a high grade house paint especially designed as a finishing coat over Masury's Exterior White Priming Paint. Its outstanding qualities include ease of application, excellent leveling, exceptional hiding, high spreading, and brilliant permanent whiteness. In addition, it is exceptionally durable and shows unusual wearing qualities upon weathering.

Liquid House Paint

Masury Liquid House Paints are pure paints. They contain no inert extending pigments, and use only the best grades of linseed oil, turpentine, and dryers. Ease of mixing and brushing make Liquid House Paints desirable to the painter. Color retention and dependable durability make these paints favored by owners and agents who specify paints for properties under their supervision. White, black and 28 colors.

Permanent Greens (and Gray Underground)

Masury's Permanent Greens are oil paints of a special type. They may be applied with the simplicity and brushing ease of ordinary house paints, but the durability, and the everlasting quality of gloss and color exceed anything available in regular oil paints.

Colors—Brilliant Green, Light Green, Medium Green, Dark Green, Extra Deep Green, Olive Green. Gray underground.

Masur-Seal

Masur-Seal is a pale, durable, quick drying, flexible, high gloss finish for all surfaces. It is alkaliproof, and is not affected by water, either hot or cold. It is suitable as it comes from the can for use as a clear varnish on any surface to which varnish is usually applied. It is equally practical as a general mixing varnish for use with all types of paste pigments, as well as a reinforcing agent with ready-mixed paints.

Ideal for new wood floors, standing trim and furniture, table tops and linoleum floors. Masur-Seal may be used as a spar varnish on all exterior surfaces, such as doors and trim, porch ceilings, marine bright work of all kinds. For exterior work it is advisable to use at least two coats.

Masurite Marine Spar Varnish

Masurite Marine Spar attains the full protective virtues of Bakelite-bearing coatings, but, in doing so, sacrifices nothing in the way of depth and richness of appearance which characterized the old finishing varnishes. On such difficult exposure as encountered in marine use, it has been known to wear, without crazing of checking, for two seasons or longer, when properly applied.

Write Today for Special Specifications for Architects' Use.

MERKIN

PAINTS

AND

ARCHITECTURAL

F I N I S H E S



M. J. MERKIN PAINT COMPANY, INC., NEW YORK, U.S.A.

The MERKIN LABEL

IS AN ASSURANCE OF PAINT QUALITY

Since its inauguration, the policy of the M. J. MERKIN PAINT CO., INC., *has been to manufacture paint and varnish products of the highest quality. With quality as our standard, each product bearing the* MERKIN *label is recognized everywhere as material of exceptional value.*

Large scale production, strict laboratory supervision and careful selection of raw materials assure the uniform high quality of our entire line.

Our knowledge of the practical requirements of the master painter and consumer has enabled us to produce paints covering every painting requirement and specification.

The MERKIN *line of paint products covers the entire range of protective and decorative coatings for interior and exteriors. They have been selected by Architects and Owners for use on many of the outstanding buildings in the country—a few of which we are listing in this catalog. Our technical staff is at all times available and ready to cooperate in the selection or development of paint for any individual operation.*



M. J. MERKIN PAINT CO., Inc.

EXECUTIVE OFFICES—1441 BROADWAY

NEW YORK, U. S. A. • • • •

WORKS AND LABORATORIES, LYNDHURST, N. J.

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Structural Steel and Metal Protective Coatings

EXTERIOR AND INTERIOR

M. J. MERKIN PAINT COMPANY, INC., offers a full line of metal protective coatings for exterior and interior application, for either heated or unheated surfaces.

They are supplied in a wide range of color. They provide the maximum covering capacities, depending of course, on the surfaces and technique of application, and are being used every day with great success in doing what they are designed to do — protect and prolong the life of metal surfaces.

(*Quick drying, maximum resistance to exposure.*)

PRIMING OR SHOP COAT—MERLUX Quick Drying Red Lead applied evenly, full body with brush or spray.

FIRST FIELD COAT—MERLUX Quick Drying Red Lead tinted, applied full body with brush or spray.

SECOND FIELD COAT—MERLUX Quick Drying Finish Coat applied with brush or spray, one or two coats as desired.

PRIMING OR SHOP COAT (Alternate to Above) Slower Drying.

Metal Protective Coating No. 465 Red Lead or No. 62 Red Oxide applied full body as it comes from container.

FIELD COAT—Metal Protective Coating of color desired.

PAINTING STRUCTURAL STEEL TO BE ENCASED IN CONCRETE OR BRICK

PRIMING OR SHOP COAT—M.P.C. No. 465 Red Lead or No. 62 Red Oxide applied with brush or spray, one or two coats as desired, full body.

FIELD COAT—No. 62 Red Oxide applied full body, or No. 905 Hermetikote Black applied with brush or spray, full body.

PAINTING GALVANIZED IRON

PRIMING OR SHOP COAT—M.P.C. No. 289 Galvanized Iron Primer applied with brush, full body.

FIRST FIELD COAT—Any Merkin Metal Protective Coating as selected.

SECOND FIELD COAT—Any Merkin Metal Protective Coating as selected.

PAINTING HOT SURFACES

(Vents, Stacks, Pipes, Flues, etc.)

FIRST COAT—M.P.C. No. 2184 Heat Resisting Black applied in one or two coats. For surfaces carrying temperatures in excess of 200°F. and under 700°F.

SECOND COAT—M.P.C. No. 2184 Heat Resisting Black.

PAINTING METAL ROOFS

FIRST FIELD COAT—Merpaco Roof Paint, of color selected, applied by brushing, full body.

SECOND FIELD COAT—Merpaco Roof Paint of color selected, applied by brushing, full body.

PAINTING BRIDGES, ETC.— ALUMINUM FINISH

PRIMING COAT—M.P.C. No. 465 Red Lead.

FIRST FIELD COAT—M.P.C. No. 589 Structural Gray.

FINISH COAT—No. 2170 Exterior Aluminum.

Recent outstanding structures where MERKIN METAL PROTECTIVE COATINGS were used:

Triboro Bridge, New York City
Lincoln Tunnel, New York City and New Jersey
West Side Highway, New York City
Apex Building, Washington, D. C.
Federal Post Office Building
Vesey Street, New York City
Pulaski Skyway, New Jersey
Department of Interior Building, Washington, D. C.
Textile Building, New York World's Fair
Independent Subway System, New York City
Library of Congress, Washington, D. C.



North Grand Island Bridge, Buffalo, N. Y.

Waddell & Hardesty, Consulting Engineers. Taylor-Fichter Steel Construction Co., Steel Contractors.

Field Coat—N. Y. S. Aluminum

Painting Exterior Surfaces

MERKIN LEAD AND ZINC PAINT is a scientific mixture of pure Carbonate of White Lead, Zinc Oxide, titanium pigment and a small percentage of reinforcing inert pigment, pure linseed oil, driers and turpentine. Ground in modern machinery, expertly supervised and controlled, MERKIN LEAD AND ZINC PAINT is a proper combination of the above-mentioned ingredients producing a paint with a high oil gloss of remarkable covering capacity and extreme durability. Each ingredient is carefully tested before being used, to assure absolute uniformity and final satisfaction to the user.

Supplied in a choice of 28 popular shades. Covering capacity is approximately 360 sq. ft. per gallon, 2 coats on the average surface.

PAINTING EXTERIOR WOODEN SURFACES

FIRST COAT—Merkin Exterior Primer White thinned as directed by the manufacturer.

SECOND COAT—Merkin Lead and Zinc Paint in any color selected, thinned as directed by the manufacturer.

THIRD COAT — Merkin Lead and Zinc Paint in any color selected, thinned as directed by the manufacturer.

FOR EXTERIOR TRIM

FIRST COAT — Merkin Exterior Primer White (See directions.)

SECOND COAT—Merkin Permanent Trim and Trellis Colors, or Decorative Colors.

THIRD COAT — Merkin Permanent Trim and Trellis Colors, or Decorative Colors.

Alternate to Above

PAINTING EXTERIOR WOODEN SURFACES

FIRST COAT—Merkin Exterior Primer White.

SECOND COAT — Merkin T.O.B. (Titanium Oxide Base) thinned in accordance with manufacturer's directions.

THIRD COAT—Merkin T.O.B. (Titanium Oxide Base) thinned in accordance with manufacturer's directions.

PAINTING OF STUCCO EXTERIOR OR INTERIOR SURFACES

FIRST COAT—Merkin Cement and Stucco Paint in the color selected, thinned with Merkin Mixing Sealer as directed.

SECOND COAT—Merkin Cement and Stucco Paint in color selected, no thinner to be used.

THIRD COAT—Merkin Cement and Stucco Paint in color selected, no thinner to be used.

PAINTING EXTERIOR BRICK WALLS

(Flat Finish)

FIRST COAT—Merkin Cement and Stucco Paint in the color selected, thinned with Merkin Mixing Sealer as directed.

SECOND COAT—Merkin Cement and Stucco Paint in color selected, no thinner to be used.

THIRD COAT—Merkin Cement and Stucco Paint in color selected, no thinner to be used.

Alternate to Above

PAINTING EXTERIOR BRICK WALLS

(Gloss Finish)

FIRST COAT—Merkin Cement and Stucco Paint in the color selected, thinned with Merkin Mixing Sealer as directed.

SECOND COAT—Merkin Lead and Zinc Paint in the color selected.

THIRD COAT—Merkin Lead and Zinc Paint in the color selected.

STAINING SHINGLE WALLS AND ROOFS

FIRST COAT—Merkin Shingle Stain in color selected, direct from the container.

SECOND COAT—Merkin Shingle Stain in color selected direct from container.

PAINTING PORCH FLOORS

FIRST COAT — Merkin Wearite Floor-Porch-Deck-Enamel in color selected; thin slightly with turpentine as directed.

SECOND COAT—Merkin Wearite Floor-Porch-Deck-Enamel in color selected without thinning.

THIRD COAT — Merkin Wearite Floor-Porch-Deck-Enamel in color selected without thinning.

PAINTING CANVAS DECKS

FIRST COAT — Wearite Floor-Porch-Deck-Enamel in color selected (See Painting Porch Floors) thinned with small quantity of turpentine.

SECOND COAT—Wearite Floor-Porch-Deck-Enamel in color selected without thinning.

THIRD COAT—Wearite Floor-Porch-Deck-Enamel in color selected without thinning.

Varnishes

AERO VARNISHES represent a combination of the finest raw materials obtainable with utmost care and highest skill in manufacture. They have high resistance to water, do not turn white even in the presence of excessive moisture. They provide a smooth, even film that is highly elastic and won't scratch readily.

Architects may depend on AERO VARNISH quality and are assured that we adhere consistently to the policy of producing a higher grade of varnish and drier.

This line is represented by Aero Marine Spar Varnish, Aero Rubbing Varnish, Aero Flat Varnish and Aero Floor and Trim Varnish.

All Aero Varnishes are carefully put up in sealed packages bearing the MERKIN label and are guaranteed to be exactly as represented.

Interior Wall Finishes

Finishing the interiors of various kinds of buildings calls for a large variety of materials to meet the requirements of the various structural materials involved and the kind of decorative effect sought.

For all of these conditions Merkin Products offer suitable materials, including attractive flat finishes, gloss finishes, semi-gloss finishes, and other effects.

The Architect is invited to write to M. J. MERKIN PAINT COMPANY for their recommendation when special conditions arise on interior wall decorating as we are equipped to prepare special material in order to serve the Architect wherever necessary.

MERCOTONE FLAT FINISH

MERCOTONE FLAT FINISH is a pure oil paint especially prepared for all interior decoration. It is intended for use on plaster, wood, metal, wallboard, or over wall paper, canvas and burlap, for the decoration of interior walls and ceilings of residences, offices, schools, churches, hospitals, theatres, public buildings, etc.

MERCOTONE FLAT FINISH dries perfectly flat, forming a hard, non-porous, non-absorbent surface.

MERCOTONE FLAT FINISH can be easily and successfully applied by anyone. It flows out easily under the brush and sets slowly, leaving a smooth even finish. When soiled, an application of white soap and luke warm water will remove all dirt, spots, stains, finger marks, etc., making the finish as soft and beautiful as when first applied.

MERCOTONE FLAT FINISH is made in white and fourteen attractive pastel shades giving soft, beautiful tones which will harmonize perfectly with the latest designs and color schemes used in modern modes of interior decoration.

MERCOTONE BRUSHCOAT FLAT is a smooth flat finish.

MERCOTONE TRIPLE BODY FLAT is recommended for stippling.

MERCOTONE EGGSHELL FINISH

MERCOTONE EGGSHELL FINISH is especially created to meet the demands of modern requirements of interior decoration. The smooth, tough and durable film which MERCOTONE EGGSHELL produces, resists to a large extent the smudging and dirt adherence of ordinary paints. Grease, dirt, ink spots, soot, pencil marks, etc., can readily be removed from the MERCOTONE EGGSHELL FINISH by washing with white soap and water without in any way affecting the color or the appearance of the finish.

MERCOTONE EGGSHELL FINISH can be used very advantageously on walls and ceilings of plaster, wood and metal as a finishing coat where a velvetlike or Eggshell Finish is desired. It can be brushed on large walls and ceilings without showing flashes, shiners or brush marks. It can also be used as an enamel undercoat.

MERCOTONE EGGSHELL BRUSHCOAT FINISH produces a soft velvety sheen with the minimum of brush marks.

MERCOTONE EGGSHELL STIPPLE produces an even, softly rounded, pebbled finish with the absence of sharp edges and with a velvet sheen.

MERKIN INTERIOR GLOSS ENAMEL FINISH

Merkin Interior Gloss is an ideal finish for walls and woodwork of Hospitals, Public Buildings, School Rooms, Offices, Hotels and wherever a sanitary, washable, glossy, exceptional covering finish is desirable.

Woodwork and walls assume new life when coated with MERKIN INTERIOR GLOSS. The warm, cheery shades, of which there are six, brighten the kitchen, breakfast nook, bedroom, hallway and walls.

Color card on request.

MERKIN INTERIOR SEMI-GLOSS

This paint imparts a very desirable, soft and restful, semi-gloss finish to walls, ceilings and woodwork. It is washable and durable, particularly fine for kitchens and bathrooms. Dirt, finger marks and grease may be removed with soap and water.

MERKIN INTERIOR SEMI-GLOSS has the utmost hiding power and spreads smoothly under the brush. The colors are permanent and non-fading. There are six popular shades. Color chart on request.

MERLITE WHITE ARCHITECTURAL ENAMEL

An extremely white interior high gloss finish enamel that retains its whiteness indefinitely. For the best type of interior enameling. Brushes easily and flows out to a porcelain-like finish. Merlite has exceptional covering capacity and one coat usually suffices to produce a highly satisfactory job. Merlite is of the quick drying type and dries free of tack in 3 hours and hard over night.

MERKIN "77" ONE COAT INTERIOR WHITE ENAMEL

MERKIN "77" covers the surface in one coat. It is scientifically blended to meet the requirements of the modern interior when a pure white, high gloss finish is essential. This superlative enamel gives perfect coverage in one coat.

MERKIN "77" works easily under the brush and flows freely, leaving a fine, lustrous, dirt-resisting surface without brush marks, ridges or runs. Over previously painted or primed surfaces, "77" Enamel is an ideal finishing coat and the result is always a smooth, pure white finish that is washable and long lasting. This enamel must not be thinned with linseed oil.

MERKIN PRIMER-SEALER

This is a liquid white paint for general interior use as a primer-sealer on plaster, wallboard, brick, cement, wood, etc. It covers well and sizes in one operation. Due to its hard drying and exceptional sealing qualities, it insures to a large extent the evenness and uniformity of the finest coat.

MERKIN No. 57 ENAMEL UNDERCOAT

A flat white undercoat which covers thoroughly and dries to a hard, non-absorbing finish, giving a perfect smooth underbody for enamel.

CEILINGS AND WALLS OF ALL KINDS — WASHABLE FLAT SURFACE FINISH—PLASTER —TEXTURED OR PLAIN, PLASTER SANDED, COMPO-BOARD, CANVAS OR SMOOTH WALLBOARD

FIRST COAT—MERKIN PRIMER-SEALER applied without thinning.

SECOND COAT—MERCOTONE in any color selected, mixed as directed with MERKIN PRIMER-SEALER.

THIRD COAT—MERCOTONE, brush or stipple in the color selected, thinned as per directions and brushed and stippled as directed.

CEILINGS AND WALLS OF ALL KINDS — WASHABLE EGGSHELL FINISH — PLASTER, TEXTURED OR PLAIN PLASTER, SANDED, COMPO-BOARD, CANVAS OR SMOOTH WALLBOARD

FIRST COAT—MERKIN PRIMER-SEALER applied without thinning.

SECOND COAT — MERCOTONE EGGSHELL, thinned as directed.

THIRD COAT—MERCOTONE EGGSHELL, thinned as directed, and brushed or stippled as desired.

Note: Third coat may be omitted, if in the interest of economy the architect so decides.

WALLS OF ALL KINDS — SEMI-GLOSS FINISH —PLASTER, SAND FINISHED OR TEXTURED, COMPO-BOARD, CANVAS OR SMOOTH WALLBOARD

FIRST COAT—MERKIN PRIMER-SEALER applied without thinning.

SECOND COAT—MERKIN INTERIOR SEMI-GLOSS in color selected thinned as directed.

THIRD COAT—MERKIN INTERIOR SEMI-GLOSS in color selected, thinned as directed.

GLAZING

If a glazed effect is desired, wait until the last coat is dry, then apply MERKIN GLAZING LIQUID, tinted with MERKIN PURE OIL COLOR to a small section of the wall and stipple or wipe with a crushed cloth or sponge for the effect desired.

EXTRA FINE ENAMEL WALL FINISH

FIRST COAT—MERKIN PRIMER-SEALER.

SECOND COAT—MERKIN "57" ENAMEL UNDERCOAT, thinned as directed.

THIRD COAT—MERKIN "77" WHITE ENAMEL, thinned if desired as directed.



Lincoln Tunnel, New York — New Jersey

Port of N. Y. Authority. Taylor-Fichter Steel Construction Co., Steel Contractors. J. I. Haas, Painting Contractor.

Paints Used—Merlux Q. D. Red, Merlux Q. D. Bridge Gray Green



Apex Building, Washington, D. C.

McCloskey & Co., General Contractor.
Edw. W. Minte & Co., Painting Contractor.

Interior Painting—Merkin Specification Lead and Oil Paints

Merkin Paints, Varnishes and Specialties

LEAD AND ZINC READY MIXED HOUSE PAINT (Exterior)

Merkin Lead and Zinc Paint is a scientific mixture of pure carbonate of white lead, zinc oxide, high covering pigment and a small percentage of reinforcing inert pigment, pure linseed oil, driers and turpentine. Ground in modern machinery, expertly supervised and controlled, Merkin Lead and Zinc paint produces a high gloss finish of remarkable covering capacity and extreme durability on exterior and interior surfaces. Made in 28 modern colors, also Black and White.

EXTERIOR PRIMER WHITE

Merkin Exterior Primer White is a ready mixed paint for outside use as a primer on new or previously painted surfaces. Due to its exceptional sealing properties it corrects the faults in many surface conditions which often cause paint failures when the priming is not correct. Merkin Exterior Primer White because of its exceptional hiding qualities provides a better foundation for final coats.

PERMANENT TRIM AND TRELLIS GREENS

Permanent Greens made of non-fading pigments and treated Linseed Oil vehicle, were created to provide extra durability and permanency. The brilliant enduring shades of Permanent are particularly adapted for the painting of Building Trim, Trellises, Window Boxes, Lawn Furniture, Benches, etc. Permanent provides that extra lasting brilliance and serviceability not obtained with ordinary greens.

HALF MOON READY MIXED PAINT

Manufactured from fine pigments and pure linseed oil, Half Moon Ready Mixed paint is a durable, economical exterior and interior House Paint at a moderate price. Made in 22 popular colors, also Black and White.

PASTE PAINTS

T.O.B. SERVICE PASTE is a Titanium Oxide Base Paste Paint for exterior and interior use. Made from Titanox with Zinc Oxide in proper proportions, ground in linseed oil, it makes the whitest, most durable, best covering, easiest working and most elastic paint ever produced. In most cases T.O.B. Paste can be thinned more than gallon for gallon.

WEATHERWITE SERVICE PASTE, a Lead and Zinc Paste Paint which is reduced with linseed oil and turpentine according to the directions on the package. It can be thinned gallon for gallon and produces a white, durable finish on exterior and interior surfaces. Moderately priced Weatherwite Service Paste will meet the requirements of the master painter and layman.

MERPAZ FRENCH PROCESS ZINC OXIDE

Ground in refined linseed oil in accordance with the following formula: Green Seal Zinc Oxide 81%, Refined Linseed Oil 19%.

PURE OIL COLORS

These colors are composed of highest quality pigments, ground in pure linseed oil to exceptional fineness. Strong pigments giving clean tints were selected and the fine grind of Merkin's Extra Quality Pure Oil Colors produces color pastes of maximum tinting strength resulting in greater economy.

Merkin Extra Quality Pure Oil Colors can be used for all types of body color work and for tinting white lead, mixed paints, flat paints, enamels and stains.

CEMENT AND STUCCO PAINT

Merkin Cement and Stucco Paint is a perfect Waterproof Flat Finish for concrete, stucco and brick surfaces. It provides a high grade durable finish, the object being to impart uniformity and beauty in color effect and water-resistance. Made in White and ten colors.

Merkin Cement and Stucco Paint dries with a velvet finish. Also made in gloss where a gloss finish is required.

WEARITE FLOOR-PORCH-DECK ENAMEL

Expressly manufactured for wood floors, decks, porches, concrete and composition surfaces—inside and outside. Produces an extremely hard, glossy, quick drying floor coating. Also suitable for stairs, trim, dado, wainscoting baseboards, etc. Made in 9 colors and also Black and White.



Roosevelt Memorial Bldg., American Museum of Natural History, New York City
Bernard Brindze, Painting Contractor
Interior Painting—New York State Spec. Interior Paints

INTERIOR GLOSS PAINT

An interior enamel finish for woodwork and walls. Made in White and six colors. An ideal gloss for Hospitals, Public Buildings, School-rooms, Offices, Kitchens, Breakfast Nooks, Bedrooms and Hallways.

INTERIOR SEMI-GLOSS PAINT

A satin finish which produces a semi-lustre effect. Made in White and six colors. Attractive on walls and woodwork.

SHINGLE STAIN

Produced from permanent pigment colors, ground in pure linseed oil and reduced with special preserving oils, Merkin Shingle Stains preserve and protect all shingled surfaces giving full richness of color, imparting permanent beauty. Made in eight colors.

VARNISH STAIN—4 HOUR QUICK DRYING

While Merkin Varnish Stain dries quickly, it flows out smoothly and evenly under the brush. It dries with a tough gloss waterproof finish and may be obtained in Light Oak, Maple, Dark Oak, Walnut, Mahogany and Ground Color to produce beautiful effects on floors, furniture or woodwork.

JIGTIME SPEED ENAMEL

As the name implies, Jigtime is a speed enamel. It answers the modern demand for fast drying—dust free in four hours under normal conditions. The amateur as well as the professional painter can secure perfect results.

The modern home demands bright, cheerful colors. The 18 Jigtime Colors have been selected to meet this popular vogue. Lighter colors may be made with the addition of White. Innumerable new shades and tints can be secured by inter-mixing, as all colors blend perfectly. Jigtime flows and levels to a smooth hard glossy surface. It spreads and covers well and has over 1000 uses inside and outside of any home.

Where a natural wood finish is desired, Jigtime Varnish Stain colors reproduce the effects of wood. They are suitable for floors, old and new, furniture or woodwork.

Supplied in all colors also Black and White.



Kensington House, New York City
H. A. Hyman, Builder. Emery Roth & Sons, Architect.
Hyman Denker, Painting Contractor.
Paints Used—Primer-Sealer, Mercotone Flat Finish and 77 White Enamel

METAL PROTECTIVE COATINGS

For positive Protection and Long Service, these paints are made from the very best materials obtainable and specially prepared vehicles finely ground to insure maximum covering capacity and texture of film for use on bridges, structural steel, stacks, metal roofs, steel cars, tanks, piping and all metal surfaces.

No. 291 Black Graphite
No. 465 Red Lead
No. 330 Red Lead Graphite
No. 62 Oxide of Iron
No. 589 Structural Gray
No. 2123 Brown Oxide
No. 216 Olive Green
No. 2170 Aluminum (Ready Mixed)
No. 205 Carbon Black
No. 289 Galvanized Primer (made in Gray and White)
No. 905 Hermetikote Black
No. 2184 Heat Resisting Black
No. 2213 Interior Aluminum
No. 20 Flat Black

No. 2170 ALUMINUM PAINT SPAR VARNISH VEHICLE

A bright, lustrous, silvery enamel ready to mix, in compartment cans. The upper compartment contains in the proportion of 2 lbs. per gallon of vehicle. For general exterior and interior surfaces where surface does not become red hot.

PROTECTO

An exterior enamel paint which dries hard with a lustrous finish for use on all metal surfaces such as railings, fences and bridges. No. 2160 Gloss Green; No. 2150 Gloss Black.

MERZIN

Merzin is made ready for use and prepared for brush or spray application. Easily applied it has fine adherence and remarkable covering power. It offers absolute rust prevention. Merzin contains a large proportion of Zinc Dust together with Zinc Oxide. One ordinary coat can be depended on to obscure entirely a background of any color with an attractive battleship gray finish. Merzin overcomes the difficulty of painting new zinc and galvanized iron surfaces and can be used for priming and finishing.

AERO VARNISHES AND DRIERS

These varnishes represent a combination of the finest obtainable raw materials and the utmost care and highest skill in manufacture. They have high resistance to water and do not turn white even in presence of excessive moisture. They provide a smooth, even film that is highly elastic and does not scratch readily. They are fully described on page 5.

MARINE FINISHES

Merkin Marine Finishes are the result of years of experience and intensive research in the requirements of protecting surfaces above and below water. Each product has been produced to achieve a required result. The Topside paints are blends of the proper oil, and modern synthetic gums which have been so highly developed in the past few years. The Bottom paints form a combination of rust preventatives and repellants against barnacles and marine growth.

Merkin Marine Finishes include: Yacht White (Flat, Eggshell, Gloss), Yacht Black (Flat, Eggshell, Gloss), Gas-Proof White, Hull Black, Smokestack Paints, No. 2170 Aluminum Spar Varnish Vehicle, Barge and Lighter Paints, Aero Varnishes, Waterproof Seam Paint, Perfectseal Roof Coating and Cement, Marine Paste Paints.

PUBLIC SCHOOL PAINTS

Approved paint colors and varnishes for interior and exterior use as per specifications of the Board of Education of the City of New York.

P.S. No. 15 Lead, Zinc & Titanium, P.S. Flat (Ceiling and Wall), P.S. Gloss (Ceiling and Wall), P.S. Dado Gloss Brown, P.S. Dado Gloss Gray, P.S. Flat Dado Tan or Gray, P.S. No. 14 Cement Coating, P.S. Concrete Floor Paint, No. 2245 Aluminum, No. 465 Red Lead, No. 467 Iron Oxide, P.S. Green Graphite,



© N. Y. W. F.

Worlds Fair Textile Bldg., Flushing, L. I.

Paints Used—Merkin World's Fair Aluminum, Merkin Lead and Zinc Paint

P.S. No. 71 Prime Coater, P.S. No. 2269 White Enamel, P.S. Radiator Enamel, P.S. Black Graphite, P.S. Spar Varnish, P.S. Rubbing and Interior Spar Varnish and P.S. Flat Varnish.

MERTEX PLASTIC PAINTS

MERTEX PLASTIC PAINT is the last word in Textural Finish. The only limit to the finishes possible with Mertex is the limit of ingenuity of the human mind. The Beauty and Permanence and Economy of Mertex is for every type of interior.

MERKOTE GLAZE

This product is recommended for use as a mixing liquid to be mixed with oil colors. It will produce the



Triborough Bridge, New York City

Triboro Bridge Authority, Taylor-Fichter Steel Construction Co., Inc., Steel Contractors.

Shop Coat—Painted with Merkin Red Lead
Field Coat—Painted with Merkin No. 2802 Aluminum

most beautiful effects when applied and wiped over plastic paint finishes which have been properly sized.

INDUSTRIAL ENAMEL

For all purposes, interior and exterior; for furniture, engines, machinery, wagons and implements and all metal and wood surfaces.

BRITELITE MILL WHITE PAINT

BRITELITE MILL WHITE is an exceptionally fine light diffusing paint that retains its whiteness for a long time. Made in three types, Flat, Eggshell and Gloss.

WHITE GLOSS PAINTS

PLASTICOTE: An interior and exterior heavy bodied gloss white paint. It is pure white and can readily be tinted to any desired shade. Plasticote is adaptable for priming and finishing plastered walls, cement, woodwork and metal surfaces on old and new work. For priming and finishing interior surfaces and priming exterior surfaces.

MERKIN PRIMER-SEALER

A pigmented, hard drying primer for use on interior plaster, wood or metal surfaces. The perfect primecoat for gloss or flat paints.

STIPPLGLOSS WHITE produces a stippled or combed effect with a gloss finish. It can be tinted to any desired shade. The lustrous gloss finish which Stipplgloss produces will give charm and beauty to any interior.



Federal Office Bldg., Vesey Street, New York City
James Stewart & Co., General Contractor.
Bethlehem Steel Co., Steel Contractor.
Shop Coat—U.S.P.O. Red Lead.
Field Coat—Merkin No. 905 Hermetikote Black

WHITE ENAMELS

MERCOLITE ZINC ENAMEL: To produce this enamel, we use White Seal Zinc Oxide and specially treated refined linseed oil. Mercolite is adaptable for use on exterior and interior surfaces. Also made in Eggshell finish.

NAMOLITE ZINC ENAMEL: A long oil product made of pure White Zinc reinforced with high covering pigments. It can be used exterior or interior.

No. 77 ONE COAT ENAMEL: Scientifically blended to meet the requirements of the modern interior. Where a pure White high gloss finish is essential this superlative enamel will give perfect coverage in one coat. Also made in Eggshell finish.

No. 99 ONE COAT ENAMEL: An easy working, good covering enamel for dwelling and apartment use.

EBONIE BLACK—THE LIQUID PROTECTOR

A ready for use Trinidad Asphaltum and Gilsonite coating which flows on like paint and dries quickly to a glossy black durable elastic finish. Ebonie Black can be used on fence posts, fences, castings and pipings, machinery, fire escapes, water tanks, gutters, railings and grillwork, farm implements, screens and nettings, gasoline tanks for under ground use, fire hydrants, standpipes and windmills. For Marine work it can be utilized very handily on all wood and metal surfaces such as railings, brinkers, bilges, winches, wood hulls, etc.

SCREEN PAINTS

Made in Green or Black for painting screens and screen frames.

FILLERS—PASTE AND LIQUID

Made in Paste and Liquid form to fill the pores on new and old wooden surfaces preparatory to varnishing or using shellac.

TOUCH-IT-UP ENAMEL

MERKIN- TOUCH-IT-UP ENAMEL is a high grade fast drying enamel, with excellent hiding, easy brushing and good flowing qualities. MERKIN TOUCH-IT-UP ENAMEL is made expressly for repair painting on scarred or damaged finishes. Articles painted with MERKIN TOUCH-IT-UP ENAMEL are quickly put back in use because of the quick and hard drying properties of this product. MERKIN TOUCH-IT-UP ENAMEL dries to touch in a few hours and

hard overnight, producing a high gloss well wearing finish that withstands outside exposure.

AQUASEAL WATERPROOFINGS

Aquaseal Waterproofings are of two kinds:—Integral, for adding to Portland Cement mixtures to produce waterproof concrete or mortar, and colorless for exterior application to brick walls for the prevention or correction of water seepage.

AQUASEAL No. 95 INTEGRAL WATERPROOFING

A saturated solution of metallic salts which when added in definite proportions to the gauging water, produces concrete that is waterproof, dense and easily worked. It lowers the freezing point of the mixture, making it possible to work at temperatures much lower than would otherwise be possible. In addition, this material hastens the initial set of the concrete without affecting its ultimate strength.

No. 92 PERFECTSEAL CONCRETE HARDENING SOLUTION

Perfectseal Concrete Hardening Solution is a liquid mixture of fluosilicates which is used for the hardening and waterproofing of concrete floor surfaces.

This solution penetrates well into the concrete and by its action upon cement, causes the surface to become hard and dense. It will withstand the hardest traffic without dusting or disintegrating. Perfectseal Solution does not in any way affect the appearance of floors to which it is applied and renders cement floors acid proof.

AQUASEAL No. 91 TRANSPARENT WATERPROOFING

A light amber colored compound of stearates and penetrating oils, combined by a process that produces a material which when applied to brick walls, penetrates to a definite depth below the surface and seals the pores against the entrance of moisture. It prevents and checks effiorescence on the face of the brickwork.

AQUASEAL No. 97 COLORLESS WATERPROOFING

A colorless waterproofing which is applied to brick walls and concrete surfaces without affecting the color of light brick or concrete. It penetrates deeply into the surface and seals the pores. Its effect is immediate and lasting.

AQUASEAL ELASTIC CAULKING AND GLAZING COMPOUND

Ready for use, Aquaseal Caulking Compound can be applied with a knife or by means of a Caulking Gun. It is adapted for caulking around window and door frames; pointing up brick and tedda cotta joints, embedding glass in skylights and greenhouses, bedding slate and spanish tile roofs. It adheres firmly to wood, stone, concrete, steel, glass or any other building material. Being weatherproof and waterproof, Aquaseal Caulking Compound never dries hard or brittle. It expands and contracts with the surfaces it joins forming a permanent seal against air, dust and water. Supplied in the following colors: Black, Maroon, Gray, White, Red, Green.

PERFECTSEAL ROOF CEMENT (Liquid and Plastic)

Scientifically made from long fibre asbestos, pure natural asphalt and special waterproofing gums, Perfectseal forms a seamless, weather resisting covering on tin, tar, paper, felt, corrugated iron, canvas, shingles and concrete. It retains its elasticity indefinitely and therefore will not crack or chip off in cold weather or melt soft enough to run in the hot sun. Perfectseal Liquid and Plastic is manufactured in the following colors: Black, Maroon, Bright Red, Bright Green and Gray.

ASPHALT ROOF PAINT

A ready for use Black paint designed to protect roofs and similar surfaces of wood or metal against the action of sun, rain, snow and frost.

A COMPLETE LINE OF MERKIN PAINT MERCO PRODUCTS PROTECTIVE COATINGS



BRICKEN CASINO BLDG., New York City
Ely J. Kahn, Archt.
Ebonie on All Elevator Shafts, Interiors Finished with Plasticote and Mercotone, Structural Steel Painted with No. 905 Hermetikote Field Coat



LONDON TERRACE APARTMENTS, New York City
Farrar & Watmaugh, Archts.
Plasticote, Mercotone & Mercolite Enamel on Interiors



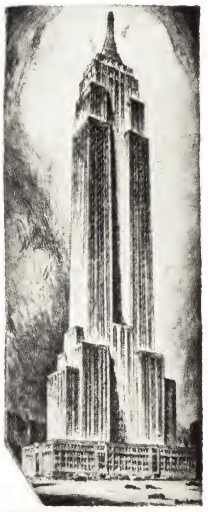
HOTEL NEW YORKER, New York City
Sugarman & Berger, Archts.
Plasticote, Mercotone, Mercolite Enamel and Wearite Floor Enamel on Interiors



WEST SIDE ELEVATED HIGHWAY, New York City
No. 330 Red Lead & Graphite Field Coat



COURT-MONTAGUE BLDG., Brooklyn, N. Y.
H. Craig Severence, Archt.
Damp-proofed with Aquaseal Mastic



EMPIRE STATE BLDG., New York City
Shreve, Lamb & Harmon, Archts.
Damp-proofed with Aquaseal Mastic



NEW WALDORF ASTORIA HOTEL, New York City
Schultze & Weaver, Archts.
All Windows Caulked with Aquaseal Caulking & Glazing Compound



No. 29 BROADWAY, New York City
Sloan & Robertson, Archts.
Structural Steel Painted with No. 62 Iron Oxide Shop Coat, No. 905 Hermetikote Black Field Coat



MARITIME EXCHANGE BLDG., New York City
Sloan & Robertson, Archts.
Structural Steel Painted with No. 62 Iron Oxide Shop Coat, No. 905 Hermetikote Black Field Coat

M. J. MERKIN PAINT COMPANY, INC.

NEW YORK — 1441 BROADWAY • PLANT: LYNDHURST, N. J.

MONROE, LEDERER & TAUSSIG, INC.

Manufacturing Paint Specialists

606-608 North American Street, PHILADELPHIA, PA.

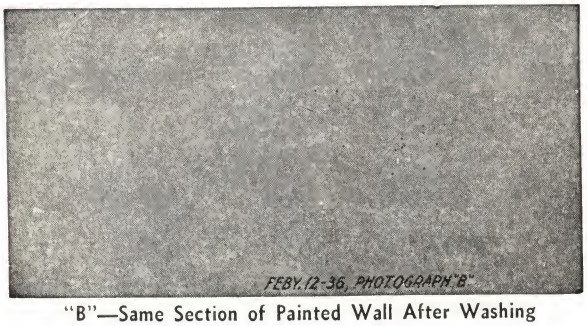
MOLETA FLAT WHITE E. S. FINISH—THE TRULY WASHABLE FLAT OIL PAINT

Moleta
"WASHABLE"



"A"—Section of Painted Wall Before Washing

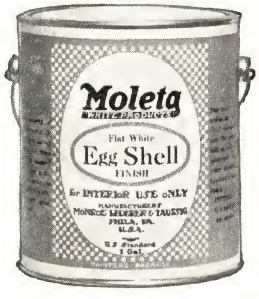
The fine hair lines shown on *"A"* are frequently noted on walls in buildings. The hair lines become pronounced by reason of the dirt accumulating on the walls, and where the hair lines exist the dirt penetrates into the hair lines, caused either by the law of gravity or by the breathing of the plaster, which results in less dirt on the actual hair line than the immediate surface bordering the hair line, with the result that hair lines become more visible as more dirt surrounds it on the balance of the surface.



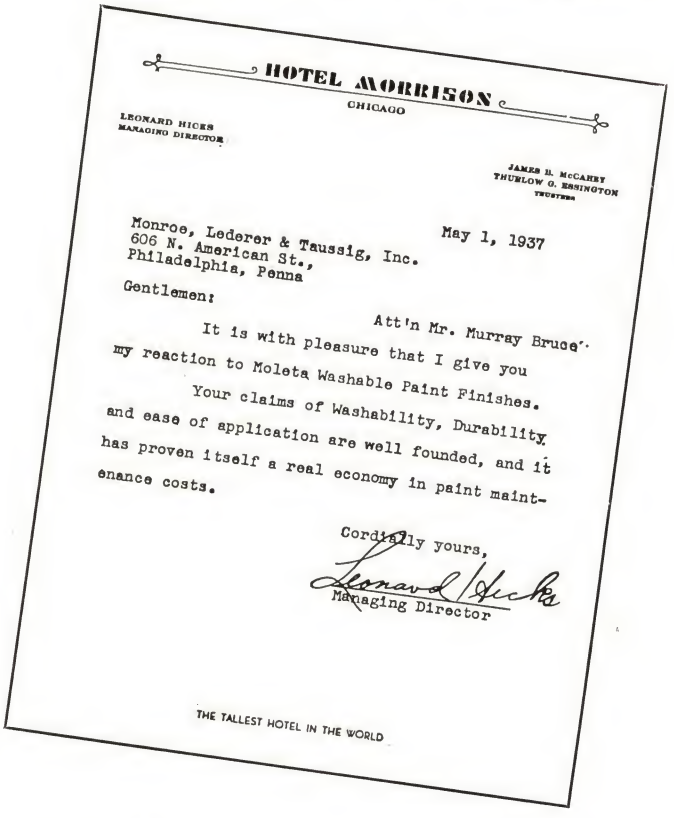
"B"—Same Section of Painted Wall After Washing

By having a washable paint upon the walls, when dirt is removed as illustrated in *"B,"* the hair lines are not apparent to the eye on ordinary inspection. This clearly illustrates one of the many reasons why it is important to apply *Moleta Washable Paints,* in addition to the necessary requirements demanded by sanitation.





What the World's Tallest, and One of the Most Beautiful, Hotels Says about Moleta



HOTEL MORRISON
CHICAGO

LEONARD HICKS
MANAGING DIRECTOR

JAMES H. McCARRY
THURLOW G. ESSINGTON
TRUSTEES

May 1, 1937

Monroe, Lederer & Taussig, Inc.
606 N. American St.,
Philadelphia, Penna

Gentlemen:

Att'n Mr. Murray Bruce.

It is with pleasure that I give you my reaction to Moleta Washable Paint Finishes.

Your claims of Washability, Durability and ease of application are well founded, and it has proven itself a real economy in paint maintenance costs.

Cordially yours,
Leonard Hicks
Managing Director

THE TALLEST HOTEL IN THE WORLD

Users

U. S. Naval Academy, Annapolis, Md.
Pennsylvania Railroad
Mt. Sinai Hospital, Philadelphia, Pa.
U. S. Veterans' Bureau Hospitals, Coatsville, Pa., Perry Point, Md., Danville, Ill., etc.
University Hospital, Philadelphia, Pa.
Howard University, Washington, D. C.
U. S. Military Academy, West Point, N. Y.
Walter Reed Hospital, Washington, D. C.
New York State Education Department, Albany, N. Y.
Central Islip State Hospital, Central Islip, N. Y.
Rockland State Hospital, Orangeburg, N. Y.
U. S. Marine Barracks, Quantico, Va., Fortress Monroe, Va.
Ambassador Apartments, Baltimore, Md.
U. S. Naval Air Station, Lakehurst, N. J.
Fitzsimmons General Hospital, Denver, Colo.
Agricultural and Technical College, Greensboro, N. C.
New York Navy Yard
Philadelphia Navy Yard
Department of Agriculture, Washington, D. C.
Northeastern Penitentiary, Lewisburg, Pa.
U. S. Penitentiary, Leavenworth, Kan.
North Carolina State College, Raleigh, N. C.
Morrison Hotel, Chicago, Ill.
Strawbridge & Clothier, Philadelphia, Pa.
L. Bamberger & Co., Newark, N. J.

Moleta Painting Specifications will be sent on request

THE MURALO COMPANY, INC.

Decorative Wall Coatings, Casein Paints, Calcimines, Texture Paints
Water Paints, Wall Paints, Cement Paints, Wall Sizes and Patching Plasters
570 Richmond Terrace, STATEN ISLAND, N. Y.

CAMBRIDGE, MASS., 200 First Street
CHICAGO, ILL., 320 North La Salle Street
ATLANTA, GA., 82 Central Avenue, S. W.
LOS ANGELES, CALIF., 2461 Porter Street
SAN FRANCISCO, CALIF., 447 Hampshire Street

MURAL-TONE—HIGH GRADE CASEIN WALL PAINT

A Scientific Achievement in Paint Manufacture

Mural-tone meets every decorating requirement—speed, beauty, economy, and durability. The principal paint pigments used in the manufacture of Mural-tone are noted for their extraordinary hiding and covering and intense whiteness. Casein, recognized as an excellent adhesive, is the vehicle, and in conjunction with certain chemical compounds completes a scientifically balanced paint formula.

Once Mural-tone is applied, the paint film remains in sound condition. At any future time, Mural-tone, or any other decorative material (flat paint, enamel, lacquer, calcimine, water paint, texture paint, wall paper and wall fabrics) can be applied over Mural-tone without any treatment of the surface.



Central Theatre, Yonkers, N. Y., Walls and Ceilings Finished with Mural-tone
ALWIN STUDIOS, N. Y.

Ideal for Unseasoned Plaster and Masonry

Mural-tone can be applied to fresh (not soaking wet) unseasoned plaster and masonry immediately after they have hardened (usually 48 hours), as it possesses the right degree of porosity to permit the escape of moisture and the free passage of air essential to the proper curing of the surfaces. All colors are permanently limeproof and alkaliproof. For *new* construction or *old* surfaces we believe there is no finer paint.

For Walls, Ceilings and Interior Surfaces

Mural-tone is especially suitable for use on walls, ceilings, and other surfaces where *good* decoration is an important factor. It is also widely used in factories, industrial and other buildings, where surfaces must be maintained in bright, clean condition, and where proper diffusion of light is essential. It functions perfectly on:

Acoustical Plaster.
Plaster—fresh or seasoned.
Plaster Boards and Blocks.
Concrete—green or cured.
Cement and Cinder Blocks.
Smooth Wood—if primed.
Rough Wood.
Brick, Stone, Tile.
Wall Boards—pulp or fibre.
Insulating Boards.
Steel, Iron—if primed.
Aluminum, Zinc.
Galvanized Iron, Tin.
Paint, Enamel, Varnish.
Wall Paper—some kinds.
Canvas, Wall Fabrics.

Mural-tone Exceeds Government Specifications

Mural-tone conforms to—in fact exceeds—the requirements for casein paste paint set forth in Federal Specifications TT-P-23 for Casein Binder Cold Water Paint, Grade B, Type 2, issued by the U. S. Government.

Special Advantages

(1) Beauty—Due to its clarity of tone, true flatness, and rich velvety finish (no trace of gloss), Mural-tone ranks high as a decorative medium.

(2) Speed—Mural-tone dries to the touch in 40 minutes, making it possible to do speedy painting jobs in the home without confusion, and in stores, factories, etc., without interfering with business. Has no unpleasant paint odors.

(3) Economy—Will save at least 25% on painting costs, due to the ease and speed with which it can be applied. It covers and hides with *one coat* on most surfaces.

(4) Remarkable Opacity—Because of its remarkable hiding capacity, Mural-tone does a complete paint job with only *one coat* where surface conditions are favorable.

(5) Exceptional Coverage—One gallon, when mixed with water, yields 1⅔ gallons of paint, with a covering capacity of 750 to 1000 sq. ft. (depending on surface conditions), on bare walls of smooth, hard finish plaster, or over flat paint.

(6) Intense Whiteness—A superfine, brilliant white, and clear, flawless tints of lasting beauty. Will not yellow with age. Exposure to strong light or darkness will not cause fading or graying. Acid fumes, vapor and heat will not affect it.

(7) 90% Light Reflective—Due to the high index of refraction possessed by the white pigments used, Mural-tone is over 90% light reflective. This reduces lighting costs substantially (one-third or more).

(8) Cleansable—Water, a mild neutral soap and a soft sponge are all that are necessary to clean the painted surface.

Range of Colors

Color range includes a brilliant white, ten beautiful pastel tints, sixteen Positive colors and black. An endless variety of other tints is easily obtainable by intermixing. We will be happy to send you the Mural-tone *Color Mixing Guide.*

Mural-tone Positive Colors

Finely ground, concentrated colors in casein vehicle, especially developed for tinting regular Mural-tone white and other casein-vehicle paste paints.

Positive Colors can also be used full strength, alone or intermixed, where strong, brilliant effects are desired. Because of their high tinting strength are very economical. They produce clear tints of unusual brilliancy.

Approved by Prominent Architects

Among those who have expressed approval are:

McKim, Mead & White
Shreve, Lamb & Harmon
C. C. Wendehack
Wm. L. Bottomley
Holland & White
Eric Gugler
William & Geoffrey Platt
Eugene De Rosa
H. O. Milliken





J. R. Coppin Department Store, Covington, Ky.—Before and After Painting with Mural-tone
"Tests prove all you said about 'Better White—Better Light'"

OTHER MURALO PROCESS PAINT PRODUCTS

Muralo Decorative Wall Coatings—High Grade Calcimine



The ideal water colors for decorating interior walls and ceilings in all manner of residences and public buildings where harmonious color treatments are essential factors. Made in white and a wide range of attractive tints. Manufactured in dry powder form and require only the addition of water to prepare them for immediate application on plaster, wall board, wood, canvas and burlap.

Decorative Value—Muralo Wall Coatings are perfectly adaptable to any type of decoration, no matter what the style, the general treatment or proposed color scheme may be. The dainty tints with their rich velvety finish, devoid of gloss or glare, afford unlimited possibilities to achieve color effects and harmonies that express cheerfulness and good taste in interior decoration.

Economy is often one of the deciding factors, when choosing the form of decoration for walls and ceilings, yet the finish must possess real decorative merit. That is why Muralo Wall Coatings are recommended and used everywhere by leading craftsmen who recognize the possibilities of wall coatings that are really decorative and at the same time economical to use.

Brands—Muralo, Calcimo, Dutch Kalsomine, Suntone, Cal-o-tint, Tinto, Victor, Murocal.

Hi-Tex Textural Finish—Plastic Paint



A plastic paint of modern invention by which a most interesting and unusual array of decorative effects in both texture and color may be obtained. Manufactured in dry powder form and requires only the addition of water to prepare it for immediate application on interior wall and ceiling surfaces.

Decorative Value—Hi-Tex Textural Finish provides a decorative medium which enables modern craftsmen to reproduce faithfully the interesting and attractive Old World textured walls easily and economically—also countless individual texture treatments to harmonize with and lend character to various decorative schemes.

Then, too, the opportunities for color in Hi-Tex are as varied as its textures, making it an unusually fine medium for artistic expression.

Brands—Hi-Tex, Mural-Tex, Marvel-tex.

Spackle Surfacing Compound



Properly prepared surfaces mean perfect paint jobs that give lasting satisfaction. Spackle is an efficient repair material for filling cracks, holes, dents, joints, and rough grain, and for building up surface irregularities before painting and decorating interior surfaces. It dries quickly to a smooth, hard snow-white surface, sands easily and takes any paint or decorative coating perfectly.

Spackle is packed in handy dry powder form, and is made ready for immediate use by the admixture of water. Varnish, white lead or colors-in-oil may be added to make the old-fashioned Swedish Putty.

Muralo Cement Paint



A special paint based on the cement principle, employing in its manufacture white portland cement as the basic raw material.

Adaptability — Especially designed for painting concrete, stucco, brick, building tile, hollow tile, cinder block, stone and porous masonry wall surfaces in general, both outside and inside. Aside from excellent wearing and lasting properties, it is decorative in every sense of the word, making it adaptable for any building where the preservation and decoration of masonry surfaces are important factors. Made in white and 10 attractive colors.

Special Advantages—Muralo Cement Paint, in addition to the usual properties of a good painting material, possesses the following advantages:

(1) It penetrates the pores of porous masonry.
(2) It forms a permanent bond with the wall, becoming an integral part of the wall.
(3) All colors are permanent, limeproof and alkaliproof.

Intensive studies of the requirements of a painting material that will function properly on masonry surfaces indicate conclusively that *portland cement* provides the ideal basis material for a protective coating that will embody the qualifications enumerated above.

King's Perfected Interior Cold Water Paint



A durable snow-white paint that possesses sanitary, fire-retarding and light-reflecting properties. Manufactured in dry powder form and requires only the addition of water to prepare it for immediate application on wood, brick, stone, concrete, cement wall board, plaster and other interior surfaces.

Adaptability—King's Cold Water Paint fills a specific need for a high grade painting material that compares favorably with expensive oil paints for the interior painting of certain types of buildings, and yet is low enough in cost to spell real economy. It is especially designed for the interior painting of factories, warehouses, garages and similar types of buildings.

Used in Many Notable Buildings

Leading building contractors and operators the country over have used Muralo Process Paint Products for years in the interiors of many notable buildings, some of which are listed herewith:

Chrysler Building, New York
Waldorf-Astoria Hotel, New York
Grand Central Terminal, New York
Harvard University, Cambridge
Newton City Hall, Newton
Florida State Hospital, Miami
Mayflower Hotel, Washington
Atlanta-Biltmore Hotel, Atlanta

Muralo Process Paint Products have the benefit of a background of more than 40 years' experience specializing in the manufacture of high grade Wall Coatings, Wall Paints, Water Paints and kindred products. This record of experience is reflected in the popularity of these paint products which enjoy a world-wide reputation for supreme quality.



Chrysler Building

NATIONAL CHEMICAL & MFG. CO.

GENERAL OFFICES AND FACTORY: 3617 South May Street, CHICAGO
EASTERN OFFICES AND FACTORY: 25 Forrest Street, BROOKLYN, N. Y.

SALES OFFICES

DETROIT, MICH., 6535 Third Avenue
ST. LOUIS, MO., 7352 LaVeta Avenue
LOS ANGELES, CAL., 912 E. Third Street
SAN FRANCISCO, CAL., 991 Tennessee Street

AUTHORIZED DEALERS IN OVER 2,000 CITIES
Manufactured in Canada by Standard Paint & Varnish Co., Ltd., Windsor, Ont.

LUMINALL—A PASTE CASEIN PAINT FOR INTERIORS

Luminall is a (paste) casein paint using casein emulsified with chinawood oil as a binder and lithopone as pigment. It has all the desirable qualities of any good flat paint and in addition greater beauty; higher light reflection; odorless; dries in 40 minutes; one-coat coverage.

The higher light reflection and the greater beauty of color in this paint is due to the fact that casein is used as a binder. Casein is substantially colorless and in no way changes or obscures the color value of the pigment. It does not yellow with age. The thinness of the binder film and the low index of refraction minimize refraction losses. Unlike oils, casein does not tend to rob pigment of opacity.

Added reasons for the effectiveness of Luminall are to be found in the fact that this paint has a higher ratio of pigment-to-binder and greater pigment exposure; giving pigment a value approaching 100% of its effective color value.

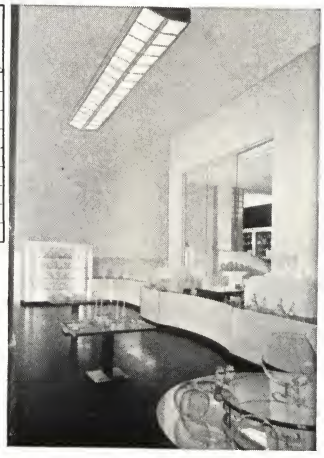
WHERE → / WHY ↓	STORES RESIDENCES	OFFICES	HOTELS	RESTAURANTS	HOSPITALS	SCHOOLS	FACTORIES	WAREHOUSES	REMODELING
GREATER BEAUTY	✓	✓	✓	✓	✓				✓
ONE COAT COVERS	✓	✓	✓	✓	✓	✓	✓	✓	✓
ECONOMY	✓	✓	✓	✓	✓	✓	✓	✓	✓
SPEEDY APPLICATION	✓	✓	✓	✓	✓	✓			✓
HIGH LIGHT REFL'TION	✓	✓	✓			✓	✓	✓	✓
DRIES IN 40 MINUTES	✓	✓	✓	✓	✓				✓
ODORLESS	✓	✓	✓	✓	✓	✓		✓	✓
NON-YELLOWING	✓					✓	✓	✓	✓
OK ON DAMP PLASTER									✓

Where to Use and Why Used in Finest Residences and Commercial Buildings



Coverage

Type of material	Square feet
Painted surface	700–750
Finish coat plaster	500
Concrete	400
Sand lime brick	250–350
Insulating Boards	200–225
Concrete Block	200–350
Sand finish plaster	175–250
Cinder block	150–175



Luminall Gives Unusual Beauty

Colors

Standard colors in addition to black and white are: gray, dark buff, blue, pink, buff, cream, green, orchid, ivory, tan. Deep colors are regularly manufactured for special decorative work in blue, bright red, yellow, dark brown, bright green, yellow green, raw umber, raw sienna, burnt sienna. Any other color can be produced if ordered in lots of 30 gals. or more.

Luminall is packed in quarts, gallons, 5-gallon and 30-gallon drums.

Tests—Reports of tests available showing resistance to acid fumes and alkalis; oxidation; violet ray. Also V. O. Knudsen's tests of Luminall on acoustical plaster.

Typical Users—Union Station, Cincinnati; Stevens Hotel, Chicago; University of Washington, Seattle; etc., etc.

Application—Same as ordinary paint. Luminall comes in paste form. Uses water as thinner. In mixing, add water sparingly and stir in thoroughly, repeating until proper consistency is reached.

"OUTSIDE" LUMINALL FOR MASONRY EXTERIORS

Type—The binder of "Outside" Luminall is synthetic resin and casein in combination with lithopone pigments. It reduces with water.

Where Recommended—"Outside" Luminall is recommended for use on exterior of concrete, brick, or Portland cement stucco. May be applied on new or previously painted surfaces.

Characteristics of Paint Film—When applied and thoroughly dried, the synthetic resin-and-casein binder retains life and elasticity.

Permanency—"Outside" Luminall has remarkable bonding power with masonry. *It will not chip or powder off.*

Coverage—One-coat coverage is sufficient in most cases and in all but exceptional cases a single coat will completely hide the surface over which it is applied. Where a thicker film is desired, two coats may be applied.





Cuneo Residence, Libertyville, Ill.

An Attractive Paint, Easily Applied



Coverage per Paste-Gallon—Coverage per paste-gallon varies with the roughness of the surface being painted. On ordinary concrete surfaces, approximately 225–350 square feet per paste-gallon is normal.

Economy of Labor—The economy of labor in applying "Outside" Luminall in conjunction with its large coverage per gallon makes it a most economical paint *on the wall.* Labor saving features are: (a) one-coat coverage in most cases; (b) no wetting down walls *before,* or curing *after* "Outside" Luminall is applied; (c) applications with wide brush or spray; (d) may be applied on either new surfaces or over old paint.

Drying Time—About 1 hour under normal conditions.

Weatherproofness—"Outside" Luminall seals the pores in masonry, tending to make it impermeable to water. Moisture within the masonry does not raise or blister the paint film.

Colors—Regularly made in ivory, gray, light gray, blue, buff, cream, green, brick red, black, and white. Especial attention is directed to the extreme whiteness of the white. Any color can be furnished in orders of 30 gallons or more.

Package Sizes—"Outside" Luminall is packed in quart cans; 1-gallon cans; 5-gallon pails; and 30-gallon drums.

Typical Users—New York World's Fair, on Administration and Communications Bldgs.; John Cuneo residence, Liberty, Ill.; Ector County (Tex.) Courthouse; etc., etc.

Available to Architects—On Luminall and/or "Outside" Luminall: (1) Complete descriptive literature and color cards; (2) Specifications; (3) Samples for testing purposes.



Painting SPECIFICATIONS

COVERING THE USE OF

DUTCH BOY PRODUCTS

DUTCH BOY

"GOOD PAINT'S OTHER NAME"



Trade Mark
Reg. U.S. Pat. Off.

"Good paint's other name" is a statement often made in referring to Dutch Boy white-lead. But it is more than just a slogan. Actually it expresses the experience of thousands of architects, owners and painting contractors who have specified or applied Dutch Boy white-lead on many thousands of buildings . . . who have watched Dutch Boy withstand years of weather exposure . . . who have seen Dutch Boy beautify the finest interiors.

Today, white-lead is accepted as the standard in quality paint. The specification of it is recognized as an assurance of a quality paint job—one that protects both an owner's property and his pocket-book.

THE PAINTING SPECIFICATIONS

The specifications for painting and finishing contained in this booklet are divided into two parts: Section A and Section B.

Section A contains those clauses which specify the materials to be used and outlines the general manner in which the work shall be carried forward.

Section B contains the directions for surface preparation and application of the paint on the particular surfaces to be painted.

In preparing specifications for the painting contractor, it will be necessary to include only those paragraphs that cover the exact work to be done. For the user's convenience we have employed letters and numerals to designate the sections, their main divisions and the paragraphs of the latter.

If desired, detail of work to be done as outlined in Section B is the only part which need be written out in full. The details of materials and workmanship may then be covered by the following clause:

All painting work under this contract, except as hereinafter specified, shall be executed in strict conformity with the Painting Specifications covering the use of Dutch Boy Products as issued by National Lead Company, which Specifications are hereby declared and made part of this specification, with the same force and effect as if written herein in full.

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NATIONAL LEAD COMPANY
111 BROADWAY, NEW YORK
Branch addresses are listed on back cover.

THE DUTCH BOY LINE

A QUALITY LINE OF PAINT PRODUCTS

A quality line of paint products is marketed under the Dutch Boy trademark. It includes nearly all the materials needed for painting any type of surface, interior or exterior.

To the architect this Dutch Boy line offers a definite check on the quality of every brushful of paint. Inferior materials—even those used as sparingly as colors in oil or liquid drier — sometimes impair a paint's protective or decorative qualities to a degree out of all proportion to their volume percentage.

The full Dutch Boy line simplifies the preparation of specifications—they can be made "Dutch Boy" throughout. Furthermore, the presence on the job of the brilliant orange and black containers facilitates inspection.

DUTCH BOY WHITE-LEAD

Dutch Boy white-lead is sold in two forms, heavy paste and soft paste. Both are pure white-lead. Both sell for the same price. Heavy paste white-lead has been used for many years. Soft paste, a more recent development, is a white-lead which can be thinned to paint more quickly and easily than heavy paste.

Both forms of white-lead can be used for all jobs . . . on interior as well as exteriors . . . for flat or eggshell as well as gloss finishes . . . are sold in 100-lb. steel kegs and 50, 25 and 12½-lb. steel pails.

DUTCH BOY LINSEED OIL

Dutch Boy linseed oil is clear, uniform and well settled. Since it is easy to adulterate linseed oil but difficult to detect the adulteration, the safest procedure in preparing specifications is to specify a brand of known purity and quality. Three types of strictly pure linseed oil — raw, boiled and stand-oil type are marketed under the Dutch Boy trademark.

All three types are sold in 1 and 5 gallon cans—*sealed at the factory* as a guarantee of purity.

DUTCH BOY LEAD MIXING OIL

Dutch Boy Lead Mixing Oil is a companion vehicle to Dutch Boy linseed oil. It was developed for a particular purpose—to provide an oil which would mix perfectly with white-lead for the sealing and decoration of plaster, wallboard, concrete and stucco —whether on the interior or exterior.

It dries to a soft flat finish. The surface is free from brushmarks or shiners. It retains its good appearance, despite frequent washing and everyday wear and tear.

Dutch Boy Lead Mixing Oil is available in *sealed* 1 gallon cans and 5 gallon drums.

DUTCH BOY COLORS IN OIL

Dutch Boy colors in oil are specially made for tinting white-lead paint. They come in a soft paste form and can be mixed into the paint without thinning. They disperse rapidly. There is no lumping or streaking. Thus they save time and labor for the painter.

There is a wide range of colors in the Dutch Boy line. They come in airtight, friction top 1 gallon, 1 quart and ½ pint cans and in 2-ounce tubes.

DUTCH BOY WALL PRIMER

For the first coat on interior plaster, Dutch Boy wall primer is the best possible recommendation. Not only does it effectively stop the surface suction and seal fine fire cracks, but it hides the surface as well, providing an ideal foundation for the succeeding coats of white-lead flat. Dutch Boy wall primer is sold in 1 quart and 1 gallon cans and 5 gallon kits.

DUTCH BOY LIQUID DRIER

Dutch Boy liquid drier is a dependable drier made especially for use with Dutch Boy white-lead. Its action is neither too fast nor too slow. It is sold in ½ pint, pint, quart and gallon cans.

DUTCH BOY RED-LEAD

Just as pure red-lead excels other paint materials as a protection for metal, so does highly-oxidized red-lead—that is, red-lead containing more than 97% Pb_3O_4—excel other red-leads with a lower true red-lead content. Paint made from highly oxidized red-lead has better keeping qualities. It is easier to apply and has a greater spreading capacity. It produces a uniform film of greater density and thus is more durable and more resistant to destructive atmospheric influences.

Only this better type of red-lead, containing more than 97% Pb_3O_4, is used in the paste or ready-to-use red-lead paints sold under the Dutch Boy trademark.

DUTCH BOY PASTE RED-LEAD—Is highly oxidized red-lead ground in pure linseed oil. It is sold in 100-lb. kegs, 50, 25, and 12½ lb. steel pails.

DUTCH BOY LIQUID RED-LEAD No. 1 (ORANGE RED), No. 6 (LIGHT BROWN), No. 7 (DARK BROWN), No. 5 (BLACK)—are ready-to-use red-lead paints unexcelled for all metal surfaces exposed to the weather. Sold in 20-gallon drums, 5 gallon kits and quart and gallon cans.

DUTCH BOY QUICK-DRYING RED-LEAD—Is a special type of red-lead paint designed for use when the available drying time is short. It dries for recoating in from four to six hours, may be painted over the same day if necessary. It contains nothing but pure highly-oxidized red-lead ground in a synthetic resin vehicle. Sold in 20 gallon drums, 5 gallon kits and gallon cans.



PAINTING SPECIFICATIONS

Covering the Use of

DUTCH BOY PAINT PRODUCTS

Notes Regarding Specifications

If desired, the general requirements and workmanship, as set down in Section A, can be omitted in detail and covered by the following clause: All painting work under this contract, except as hereinafter specified, shall be executed in strict conformity with the Painting Specifications covering the use of Dutch Boy Products as issued by National Lead Company, which Specifications are hereby declared and made part of this specification, with the same force and effect as if written herein in full.

SECTION A • PART I

GENERAL REQUIREMENTS

1. GENERAL CONDITIONS

The General Conditions of the American Institute of Architects, latest edition, shall form a part of these specifications, and all work shall be subject to the provisions thereof, insofar as they apply to work under these specifications.

2. WORK INCLUDED

(*a*) The painting contractor shall supply all labor, materials, tools, staging, and equipment necessary and shall perform all painting and finishing work in connection with the building described as follows:
(*b*) (Here describe generally the work which is to be painted.)
(*c*) (Here also describe work which is to be primed under other specifications but finished under these specifications.)

3. DRAWINGS

(*a*) The painting contractor shall be furnished with all drawings, details and other information necessary for the painting of all classes of work which are to receive a painted finish.
(*b*) In the event of any doubt or question, respecting the drawings and/or specifications, reference shall be made to the architect whose decision thereon shall be final.

4. SAMPLES

(*a*) Samples of all finishes shall be submitted to the architect for approval before applying, and finished work shall match same.
(*b*) The painting contractor shall carefully inspect each surface before applying any finish and, if same is not in proper condition, he shall notify the architect in writing. Otherwise the contractor will be held responsible for any defects in the finish arising therefrom.

5. INSPECTION

(*a*) The architect, or his duly authorized representative shall have access at all times to the stock of materials and shall be furnished with every reasonable facility for ascertaining that the workmanship is in accordance with the requirements and intent of these specifications.
(*b*) Defective work shall be made good and unsuitable materials may be rejected. The architect reserves the right to replace both at the expense of the painting contractor.

6. ALTERATIONS AND REMODELING

All present work that is removed and reset or that is affected in any way by the alterations and remodeling, shall be refinished to match the finished surfaces adjacent thereto.

7. STORAGE

The painting contractor shall store his materials in one place in the building, and such storage place shall be kept neat and clean and all damage thereto or to its surroundings shall be made good; care being taken in the storage of paints, oils, etc. to prevent all danger of fire. Oily rags shall be removed from the building every day upon the stopping of work.

8. CLEANING

Upon completion of the building, the painting contractor shall remove all paint spots from all finished work, and shall leave the entire premises free from rubbish caused by his work; and shall remove his equipment from the premises. He shall present the work clean and free from blemish.

(Washing glass is not intended to be included in this specification. If the architect wishes it to be included, he should specifically mention it.)

9. EXTRAS

The painting contractor shall not be entitled to payment in excess of the amount agreed upon in his contract for any extra work over and above that specified herein, unless authorized in writing by the architect or his superintendent.

10. PROTECTION OF WORK

It shall be the painting contractor's responsibility to protect his work, and the work of all other contractors during the time his work is underway. He shall be responsible for any and all damage to the work or property of others caused by his employees or himself.

11. WORKMANSHIP

(*a*) Before any painting is done, all surfaces shall be clean, smooth and free from dust, dirt, grease, mortar, rust and other foreign substances and all parts where paint remover has been used shall be washed off with turpentine or benzine.
(*b*) All paint shall be evenly spread and thoroughly brushed out.
(*c*) No coat of paint shall be applied on a wet or damp surface and in no case until preceding coat is dry and hard.
(*d*) No painting shall be done on outside work in extremely cold, frosty, foggy or damp weather. Painting done in winter weather shall be done only when the temperature is above 50°F. and when all surfaces are dry.

SECTION A • PART II • MATERIALS

12. GENERAL

All materials for painting shall be delivered at the building in unbroken packages, bearing the manufacturer's brand and name, and shall be used without adulteration.

The following materials are covered in these specifications: white-lead, colors in oil, linseed oil, Lead Mixing Oil, flatting oil, wall primer, turpentine, drier, varnish, shellac varnish, putty and red-lead.

13. MIXING

All paint shall be mixed at the job in a manner to assure the proper incorporation of the ingredients and in conformity with formulas as given hereinafter.

14. MATERIALS

(*a*) WHITE-LEAD—All white-lead shall be pure white-lead of Dutch Boy brand which conforms to the latest specifications of the American Society for Testing Materials.

(*b*) RED-LEAD—All red-lead shall be pure red-lead of Dutch Boy brand which conforms to the latest specifications of the American Society for Testing Materials.

(*c*) COLORS IN OIL—All colors in oil shall be of Dutch Boy brand.

(*d*) LINSEED OIL—All linseed oil shall be pure linseed oil of Dutch Boy brand which conforms to the latest specifications of the American Society for Testing Materials.

(*e*) LEAD MIXING OIL—All Lead Mixing Oil shall be Dutch Boy Lead Mixing Oil.

(*f*) FLATTING OIL—All flatting oil shall be Dutch Boy flatting oil.

(*g*) WALL PRIMER—All wall primer shall be Dutch Boy wall primer.

(*h*) TURPENTINE—All turpentine shall be pure gum spirits of turpentine or pure steam-distilled turpentine and shall conform to the latest specifications of the American Society for Testing Materials.

(*i*) DRIER—All drier used shall be pure drier of Dutch Boy brand which conforms to Type I of the latest Federal Specifications for liquid paint drier.

(*j*) VARNISH—All varnish shall be the best grade of floor varnish, the product of an approved manufacturer and suitable for mixing with white-lead as specified.

(*k*) SHELLAC VARNISH—All shellac varnish shall be free from rosin and composed of pure gum shellac cut in pure denatured alcohol, using four pounds of gum to the gallon.

(*l*) PUTTY—Putty shall be composed of pure white-lead and whiting, mixed with pure linseed oil to proper consistency, and shall conform to white-lead whiting putty, Class B, of the latest specifications of the American Society for Testing Materials. For metal sashes, the pigment may include 10% powdered litharge.

SECTION B • APPLICATION

1. PAINTING NEW EXTERIOR WOOD

(*a*) (Here list and describe surfaces to be painted.)

(*b*) Door and window casings, mullions, etc. shall be sanded to remove loose edges left by sanding machine. All surfaces shall be free from slivers, splinters, etc.

(*c*) After priming coat is dry, knots and sappy streaks shall receive one coat of shellac varnish brushed out thin and all cracks, nail holes, etc. shall be puttied with white-lead putty.

(*d*) All painting work shall be allowed to dry from four to six days before the next coat is applied.

(*e*) All surfaces, except shingles, shall be primed with Formula No. 1 and receive two additional coats, using Formulas No. 2 and No. 3, respectively.

(*f*) Wood shingles shall be primed with Formula No. 1, and receive two additional coats, using Formulas No. 4 and No. 5, respectively.

(*g*) Where colors other than white are to be used, the necessary tinting materials shall be added to the last two coats of paint. (Specifications of colors and where they are to be used should be stated here.)

FORMULA No. 1
Priming Coat—New Exterior Wood

MATERIALS	SOFT PASTE	HEAVY PASTE
Dutch Boy white-lead	100 pounds	100 pounds
Dutch Boy linseed oil	4 gallons	4 gallons
Pure turpentine	1¾ gallons	2 gallons
Dutch Boy liquid drier	*1 pint	*1 pint

The above formula makes 9 gallons of paint which covers about 600† square feet per gallon, one coat.

†On wood shingles the average coverage is about 200 square feet per gallon, one coat.

*If boiled oil is used, reduce drier to ½ pint.

FORMULA No. 2
Second Coat—New Exterior Wood

MATERIALS	SOFT PASTE	HEAVY PASTE
Dutch Boy white-lead	100 pounds	100 pounds
Dutch Boy linseed oil	1½ gallons	1½ gallons
Pure turpentine	1¼ gallons	1½ gallons
Dutch Boy liquid drier	*1 pint	*1 pint

The above formula makes 6 gallons of paint which covers about 700 square feet per gallon, one coat.

FORMULA No. 3
Finish Coat—New Exterior Wood

MATERIALS	SOFT PASTE	HEAVY PASTE
Dutch Boy white-lead	100 pounds	100 pounds
Dutch Boy linseed oil	3 gallons	3 gallons
Pure turpentine	.....	1 quart
Dutch Boy liquid drier	*1 pint	*1 pint

The above formula makes 6¼ gallons of paint which covers about 700 square feet per gallon, one coat.

FORMULA No. 4
Second Coat—New Exterior Wood Shingles

MATERIALS	SOFT PASTE	HEAVY PASTE
Dutch Boy white-lead	100 pounds	100 pounds
Dutch Boy linseed oil	2 gallons	2 gallons
Pure turpentine	¾ gallon	1 gallon
Dutch Boy liquid drier	*1 pint	*1 pint

The above formula makes 6 gallons of paint which covers about 400 square feet per gallon, one coat.

FORMULA No. 5 (Flat Finish)
Finish Coat—New Exterior Wood Shingles

MATERIALS	SOFT PASTE	HEAVY PASTE
Dutch Boy white-lead	100 pounds	100 pounds
Dutch Boy Lead Mixing Oil	4 gallons	4 gallons

The above formula makes 7 gallons of paint which covers about 600 square feet per gallon, one coat.

*If boiled oil is used reduce drier to ½ pint.

2. REPAINTING EXTERIOR WOOD

(*a*) (Here list and describe surfaces to be painted.)

(*b*) (If any portions of old paint must be removed and surface re-primed, here list and describe such surfaces and their treatment.)

(*c*) After the first coat has dried sufficiently, nailholes, cracks, etc. shall be puttied with white-lead putty.

(*d*) All painting work shall be allowed to dry from four to six days before the next coat is applied.

(*e*) All surfaces, except shingles, shall receive two coats of paint, using Formulas No. 6 and No. 7, respectively.

(*f*) Wood shingles that are to be repainted shall receive two coats of paint, using Formulas No. 8 and No. 9, respectively.

(*g*) Where colors other than white are to be used, the necessary tinting materials shall be added to both coats of paint. (Specifications of colors and where they are to be used should be stated here).

FORMULA No. 6
First Coat—Repainting Exterior Wood

MATERIALS	SOFT PASTE	HEAVY PASTE
Dutch Boy white-lead	100 pounds	100 pounds
Dutch Boy linseed oil	2 gallons	2 gallons
Pure turpentine	1¾ gallons	2 gallons
Dutch Boy liquid drier	*1 pint	*1 pint

The above formula makes 7 gallons of paint which covers about 700 square feet per gallon, one coat.

FORMULA No. 7
Finish Coat—Repainting Exterior Wood

MATERIALS	SOFT PASTE	HEAVY PASTE
Dutch Boy white-lead	100 pounds	100 pounds
Dutch Boy linseed oil	3 gallons	3 gallons
Pure turpentine	.....	1 quart
Dutch Boy liquid drier	*1 pint	*1 pint

The above formula makes 6¼ gallons of paint which covers about 700 square feet per gallon, one coat.

FORMULA No. 8
First Coat—Repainting Exterior Wood Shingles

MATERIALS	SOFT PASTE	HEAVY PASTE
Dutch Boy white-lead	100 pounds	100 pounds
Dutch Boy linseed oil	2½ gallons	2½ gallons
Pure turpentine	1¼ gallons	1½ gallons
Dutch Boy liquid drier	*1 pint	*1 pint

The above formula makes 7 gallons of paint which covers about 500 square feet per gallon, one coat.

FORMULA No. 9 (Flat Finish)
Finish Coat—Repainting Exterior Wood Shingles

MATERIALS	SOFT PASTE	HEAVY PASTE
Dutch Boy white-lead	100 pounds	100 pounds
Dutch Boy Lead Mixing Oil	4 gallons	4 gallons

The above formula makes 7 gallons of paint which covers about 600 square feet per gallon, one coat.

3. PAINTING BRICK

(*a*) (Here list and describe surfaces to be painted.)

(*b*) UNPAINTED BRICK—COMMON TYPE—shall be brushed vigorously with a wire brush to remove efflorescence or other foreign substances. If any mortar has become loose or damaged, all such places shall be pointed with mortar before paint is applied. After priming, small defects in the surface should be corrected with putty.

(*c*) UNPAINTED BRICK—ALL TYPES—which has not been allowed to age for a period of six months or longer, shall be treated with a solution made by dissolving two pounds of zinc sulphate in one gallon of water. After the zinc sulphate solution has been applied, sufficient time shall be allowed for the brick and mortar to dry before priming.

(*d*) UNPAINTED BRICK—COMMON TYPE—shall be primed with Formula No. 10, and shall receive two additional coats, using Formula No. 12 and Formula No. (14, *flat finish;* or 15, *gloss finish*), respectively.

(*e*) UNPAINTED BRICK—FACE or DE-AIRED TYPE—shall be primed with Formula No. 11 and shall receive two additional coats, using Formula No. 13, and Formula No. (14, *flat finish;* or 15, *gloss finish*), respectively.

(*f*) PREVIOUSLY PAINTED BRICK—ALL TYPES—shall be dry brushed before painting. If the old paint is blistered, cracking or scaling, the surfaces should be brushed vigorously with a wire brush before painting.

The surface shall then receive two coats of paint, using Formula No. 14 (or Formula No. 15). Ample time shall be allowed to elapse between coats for drying and hardening.

(*g*) (If brick is to be lined, it should be so specified here.)

(*h*) INTERIOR BRICK—ALL TYPES—shall be painted in the same manner as interior plaster. See paragraph (*f*), page 8.

(*i*) Where colors other than white are to be used, the necessary tinting materials shall be added to the last two coats of paint. (Specifications of colors and where they are to be used should be stated here.)

FORMULA No. 10
Priming Coat—Brick (Common Type)

MATERIALS	SOFT PASTE	HEAVY PASTE
Dutch Boy white-lead	100 pounds	100 pounds
Dutch Boy linseed oil	5 gallons	5 gallons
Pure turpentine	¾ gallon	1 gallon
Dutch Boy liquid drier	*1 pint	*1 pint

The above formula makes 9 gallons of paint which covers about 200 square feet per gallon, one coat.

*If boiled oil is used, reduce drier to ½ pint.

FORMULA No. 11
Priming Coat—Brick (Face or De-aired Type)

MATERIALS	SOFT PASTE	HEAVY PASTE
Dutch Boy white-lead	100 pounds	100 pounds
Dutch Boy linseed oil	4 gallons	4 gallons
Pure turpentine	¾ gallon	1 gallon
Dutch Boy liquid drier	*1 pint	*1 pint

The above formula makes 8 gallons of paint which covers about 200 square feet per gallon, one coat.

FORMULA No. 12
Second Coat—Brick (Common Type)

MATERIALS	SOFT PASTE	HEAVY PASTE
Dutch Boy white-lead	100 pounds	100 pounds
Dutch Boy linseed oil	3 gallons	3 gallons
Pure turpentine	1 gallon	1¼ gallons
Dutch Boy liquid drier	*1 pint	*1 pint

The above formula makes 7¼ gallons of paint which covers about 400 square feet per gallon, one coat.

FORMULA No. 13
Second Coat—Brick (Face or De-aired Type)

MATERIALS	SOFT PASTE	HEAVY PASTE
Dutch Boy white-lead	100 pounds	100 pounds
Dutch Boy linseed oil	2½ gallons	2½ gallons
Pure turpentine	1 gallon	1¼ gallons
Dutch Boy liquid drier	*1 pint	*1 pint

The above formula makes 6¾ gallons of paint which covers about 400 square feet per gallon, one coat.

FORMULA No. 14 (Flat Finish)
Finish Coat—Brick (All Types)

MATERIALS	SOFT PASTE	HEAVY PASTE
Dutch Boy white-lead	100 pounds	100 pounds
Dutch Boy Lead Mixing Oil	4 gallons	4 gallons

The above formula makes 7 gallons of paint which covers about 600 square feet per gallon, one coat.

FORMULA No. 15 (Gloss Finish)
Finish Coat—Brick (All Types)

MATERIALS	SOFT PASTE	HEAVY PASTE
Dutch Boy white-lead	100 pounds	100 pounds
Dutch Boy linseed oil	3 gallons	3 gallons
Pure turpentine	.....	1 quart
Dutch Boy liquid drier	*1 pint	*1 pint

The above formula makes 6¼ gallons of paint which covers about 600 square feet per gallon, one coat.

*If boiled oil is used reduce drier to ½ pint.

4. PAINTING STUCCO, STONE OR CONCRETE

(*a*) (Here list and describe surfaces to be painted.)

(*b*) UNPAINTED STUCCO OR CONCRETE—which has not been allowed to age for a period of six months or longer, shall be treated with a solution made by dissolving two pounds of zinc sulphate in one gallon of water. After the zinc sulphate solution has been applied, sufficient time shall be allowed for the stucco or concrete to dry before priming.

(*c*) PREVIOUSLY PAINTED STUCCO, CONCRETE, OR STONE SURFACES—shall be dry-brushed before painting. If the old paint is blistered, cracking or scaling, the surfaces shall be brushed vigorously with a wire-brush before painting.

(*d*) UNPAINTED EXTERIOR STUCCO, STONE OR CONCRETE SURFACES—or all such surfaces which have been wire-brushed to remove completely the old paint, shall be primed with Formula No. 16 and shall receive two additional coats, using Formula No. 17 for the second coat and Formula No. (18, *flat finish; or* 19, *gloss finish*) for the finishing coat.

(*e*) Previously painted surfaces on which the old paint is in good condition shall receive two coats of paint, using Formulas No. 17 and No. 19, respectively.

(*f*) INTERIOR BRICK, STUCCO, STONE OR CONCRETE SURFACES—should be painted the same as interior plaster. See paragraph (*f*), Page 8.

(*g*) Where colors other than white are to be used, the necessary tinting materials shall be added to the last two coats of paint. (Specifications of colors and where they are to be used should be stated here.)

FORMULA No. 16
Priming Coat—Stucco, Stone or Concrete

MATERIALS	SOFT PASTE	HEAVY PASTE
Dutch Boy white-lead	100 pounds	100 pounds
Dutch Boy Lead Mixing Oil	2½ gallons	2½ gallons
Dutch Boy linseed oil*	2½ gallons	2½ gallons

The above formula makes 8 gallons of paint which covers about 200 square feet per gallon, one coat.

FORMULA No. 17
Second Coat—Stucco, Stone or Concrete

MATERIALS	SOFT PASTE	HEAVY PASTE
Dutch Boy white-lead	100 pounds	100 pounds
Dutch Boy Lead Mixing Oil	4 gallons	4 gallons

The above formula makes 7 gallons of paint which covers about 400 square feet per gallon, one coat.

FORMULA No. 18 (Flat Finish)
Finish Coat—Stucco, Stone or Concrete

MATERIALS	SOFT PASTE	HEAVY PASTE
Dutch Boy white-lead	100 pounds	100 pounds
Dutch Boy Lead Mixing Oil	4 gallons	4 gallons

The above formula makes 7 gallons of paint which covers about 600 square feet per gallon, one coat.

FORMULA No. 19 (Gloss Finish)
Finish Coat—Stucco, Stone or Concrete

MATERIALS	SOFT PASTE	HEAVY PASTE
Dutch Boy white-lead	100 pounds	100 pounds
Dutch Boy linseed oil	3 gallons	3 gallons
Pure turpentine		1 quart
Dutch Boy liquid drier	**1 pint	**1 pint

The above formula makes 6¼ gallons of paint which covers about 600 square feet per gallon, one coat.

5. PAINTING INTERIOR WOOD

(*a*) (Here list and describe surfaces to be painted.)

(*b*) New woodwork shall be cut smooth with sandpaper where required and dusted clean before priming.

(*c*) Old painted or varnished woodwork that shows bad cracking, checking or scaling shall be stripped by means of a good paint and varnish remover, and then cleaned with benzine or turpentine. Woodwork that is greasy or coated with wax should be scrubbed clean with turpentine or benzine before painting.

(*d*) All nail holes, cracks, dents or other defects shall be filled with white-lead putty after the priming coat has dried.

(*e*) All unpainted wood, or surfaces from which the paint has been removed completely, shall be primed with Formula No. 11 and shall receive two additional coats, using Formula No. 12 for the second coat and Formula No. (13, *flat finish;* or 14, *semi-gloss finish*) for the finishing coat. (Previously painted surfaces on which the old paint is in good condition do not require the priming coat.)

(*f*) (If a gloss finish is wanted on interior wood, specify a prepared enamel for the third or finishing coat.)

(*g*) Where colors other than white are to be used, the necessary tinting materials shall be added to the last two coats of paint. (Specifications of colors and where they are to be used should be stated here.)

FORMULA No. 20
Priming Coat—Interior Wood

MATERIALS	SOFT PASTE	HEAVY PASTE
Dutch Boy white-lead	100 pounds	100 pounds
Dutch Boy linseed oil	3 gallons	3 gallons
Pure turpentine	1¾ gallons	2 gallons
Dutch Boy liquid drier	1 pint	1 pint

The above formula makes 8 gallons of paint which covers about 700 square feet per gallon, one coat.

FORMULA No. 21
Second Coat—Interior Wood

MATERIALS	SOFT PASTE	HEAVY PASTE
Dutch Boy white-lead	100 pounds	100 pounds
Dutch Boy Lead Mixing Oil	3 gallons	3 gallons

The above formula makes 6 gallons of paint which covers about 800 square feet per gallon, one coat.

FORMULA No. 22 (Flat Finish)
Third Coat—Interior Wood

MATERIALS	SOFT PASTE	HEAVY PASTE
Dutch Boy white-lead	100 pounds	100 pounds
Dutch Boy Lead Mixing Oil	3 gallons	3 gallons

The above formula makes 6 gallons of paint which covers about 800 square feet per gallon, one coat.

FORMULA No. 23 (Semi-Gloss Finish)
Third Coat—Interior Wood

MATERIALS	SOFT PASTE	HEAVY PASTE
Dutch Boy white-lead	50 pounds	50 pounds
Dutch Boy Lead Mixing Oil	1½ gallons	1½ gallons
Dutch Boy wall primer	3 gallons	3 gallons

The above formula makes 6 gallons of paint which covers about 800 square feet per gallon, one coat.

*Either raw or boiled.
**If boiled oil is used, reduce the drier to ½ pint.

6. PAINTING INTERIOR PLASTER

(*a*) (Here list and describe surfaces to be painted.)

(*b*) Before any paint is applied, plaster surfaces, either new or old, shall be made clean and smooth.

(*c*) All cracks and holes shall be filled with plaster of paris or approved patching plaster. Large cracks before filling shall be opened up in dovetail shape clear to the lath and soaked with water. The filling plaster shall be leveled off even with the adjoining plaster surfaces, and when dry shall be sandpapered smooth.

(*d*) Walls that have been calcimined shall be washed until all calcimine is removed before applying any paint.

(*e*) Where new plaster to be painted is not properly aged, the surfaces shall be treated with a solution made by dissolving two pounds of zinc sulphate in one gallon of water. After the zinc sulphate solution has been applied, sufficient time shall be allowed for the plaster to dry before priming.

(*f*) All plaster not previously painted shall be primed with Formula No. 24 and shall receive two additional coats, using Formula No. 25 for the second coat and Formula No. (26, *flat finish;* 26-1, *Special flat finish for stippling;* or 27, *semi-gloss finish*) for the finishing coat. (Plaster previously painted does not require the priming coat.)

(*g*) (If a gloss finish is wanted on interior plaster, specify a prepared enamel for the third or finishing coat.)

(*h*) Where colors other than white are to be used, the necessary tinting materials shall be added to the last two coats of paint. (Specifications of colors and where they are to be used as well as any instructions as to special decorative finishes should be stated here.)

FORMULA No. 24
Priming Coat—Interior Plaster
*DUTCH BOY WALL PRIMER
(or)

MATERIALS	SOFT PASTE	HEAVY PASTE
Dutch Boy white-lead	100 pounds	100 pounds
Dutch Boy Lead Mixing Oil	**4 to 5 gallons	**4 to 5 gallons

The above formula makes 7 to 8 gallons of paint which covers about 800 square feet per gallon, one coat.

FORMULA No. 25
Second Coat—Interior Plaster

MATERIALS	SOFT PASTE	HEAVY PASTE
Dutch Boy white-lead	100 pounds	100 pounds
Dutch Boy Lead Mixing Oil	**3 to 4 gallons	**3 to 4 gallons

The above formula makes 6 to 7 gallons of paint which covers about 800 square feet per gallon, one coat.

FORMULA No. 26
Third Coat—Interior Plaster (Flat Finish)

MATERIALS	SOFT PASTE	HEAVY PASTE
Dutch Boy white-lead	100 pounds	100 pounds
Dutch Boy Lead Mixing Oil	**3 to 4 gallons	**3 to 4 gallons

The above formula makes 6 to 7 gallons of paint which covers about 800 square feet per gallon, one coat.

FORMULA No. 26-1
Third Coat—Interior Plaster (Special Flat Finish for Stippling)

MATERIALS	SOFT PASTE	HEAVY PASTE
Dutch Boy white-lead	100 pounds	100 pounds
Dutch Boy Lead Mixing Oil	2 gallons	2 gallons

The above formula makes 5 gallons of paint which covers about 600 square feet per gallon, one coat.

NOTE: For a stipple with a somewhat sharper texture, Dutch Boy flatting oil instead of Lead Mixing Oil may be used. The quantity should be lowered to 1½ gallons per 100 pounds of soft paste and 1¾ gallons for heavy paste.

FORMULA No. 27
Third Coat—Interior Plaster (Semi-Gloss Finish)

MATERIALS	SOFT PASTE	HEAVY PASTE
Dutch Boy white-lead	50 pounds	50 pounds
Dutch Boy Lead Mixing Oil	1½ gallons	1½ gallons
Dutch Boy wall primer	3 gallons	3 gallons

The above formula makes 6 gallons of paint which covers about 800 square feet per gallon, one coat.

*Dutch Boy wall primer should always be specified when walls are extremely porous or in an otherwise poor condition. It covers about 800 square feet per gallon, one coat.

**The minimum amount of Lead Mixing Oil should be used when the maximum amount of hiding is wanted.

7. PAINTING WOOD FLOORS

(*a*) (Here list and describe surfaces to be painted.)

(*b*) All wood floors shall be cleaned and sandpapered smooth before painting. If the old paint on a previously painted floor is in bad condition, it should be removed by planing, scraping or by the use of a liquid paint remover.

(*c*) All work shall be allowed to dry for at least four days before the next coat is applied.

(*d*) All floors not previously painted, or from which the paint has been removed, shall be primed with Formula No. 28, and shall receive two additional coats, using Formulas No. 29 and 30, respectively.

(*e*) All floors previously painted shall be touched up on worn places using Formula No. 29, after which they shall receive two coats, using Formulas No. 29 and No. 30 respectively.

(*f*) (Specifications of colors should be stated here. The necessary tinting materials should be added to the last two coats.)

(*g*) Underside of all new porch floors and the tongued and grooved edges of the boards shall receive one coat, using Formula No. 31.

FORMULA No. 28
Priming Coat—Wood Floors

MATERIALS	SOFT PASTE	HEAVY PASTE
Dutch Boy white-lead	100 pounds	100 pounds
Dutch Boy linseed oil	*3 gallons	*3 gallons
Pure turpentine	2¼ gallons	2½ gallons
Dutch Boy liquid drier	**1 pint	**1 pint

The above formula makes 8½ gallons of paint which covers about 600 square feet per gallon, one coat.

*If the floor is of hardwood, reduce the linseed oil to 2½ gallons.

**When boiled oil is used, reduce the drier to ½ pint.

FORMULA No. 29
Second Coat—Wood Floors

MATERIALS	SOFT PASTE	HEAVY PASTE
Dutch Boy white-lead	100 pounds	100 pounds
Dutch Boy linseed oil	½ gallon	½ gallon
Pure turpentine	2¼ gallons	2½ gallons
Dutch Boy liquid drier	½ pint	½ pint

The above formula makes 6 gallons of paint which covers about 700 square feet per gallon, one coat.

FORMULA No. 30
Third Coat—Wood Floors

MATERIALS	SOFT PASTE	HEAVY PASTE
Dutch Boy white-lead	100 pounds	100 pounds
Dutch Boy linseed oil	½ gallon	½ gallon
Pure turpentine	¾ gallon	1 gallon
Floor varnish†	1 gallon	1 gallon
Dutch Boy liquid drier	½ pint	½ pint

The above formula makes 5½ gallons of paint which covers about 700 square feet per gallon, one coat.

FORMULA No. 31
Underside of Porch Floors

MATERIALS	SOFT PASTE	HEAVY PASTE
Dutch Boy white-lead	100 pounds	100 pounds
Dutch Boy linseed oil	3 gallons	3 gallons
Pure turpentine	.....	1 quart
Dutch Boy liquid drier	1 pint	1 pint

The above formula makes 6¼ gallons of paint which covers about 600 square feet per gallon, one coat.

†If the floor is exposed to the weather, use spar varnish instead of a floor varnish.

8. PAINTING CONCRETE FLOORS

(*a*) New concrete floors shall be aged at least six months before being painted. If necessary to paint before that time, they may be aged artificially by washing with a solution of two pounds of zinc sulphate to a gallon of water.

(*b*) Previously painted concrete floors shall be wire-brushed to remove all loose paint.

(*c*) All work shall be allowed to dry at least four days before the next coat is applied.

(*d*) Unpainted concrete floors shall be primed with Formula No. 32 and receive two additional coats, using Formula No. 33 for the second coat and finished as specified in Paragraph (*e*). (Previously painted floors do not require the priming coat.)

(*e*) (Here specify whether floors are to be finished with floor enamel or waxed or varnished. If waxing or varnishing is specified, a third coat of paint mixed according to Formula No. 33 should first be applied.)

(*f*) The undercoat of paint shall be brought to an approximate match with the desired finish coat color by the addition of the necessary tinting materials. (Specifications of colors should be stated here.)

FORMULA No. 32
Priming Coat—Concrete Floors

MATERIALS	SOFT PASTE	HEAVY PASTE
Dutch Boy white-lead	100 pounds	100 pounds
Dutch Boy Lead Mixing Oil	2½ gallons	2½ gallons
Dutch Boy linseed oil*	2½ gallons	2½ gallons

The above formula makes 8 gallons of paint which covers about 200 square feet per gallon, one coat.

FORMULA No. 33
Second Coat—Concrete Floors

MATERIALS	SOFT PASTE	HEAVY PASTE
Dutch Boy white-lead	100 pounds	100 pounds
Dutch Boy Lead Mixing Oil	4 gallons	4 gallons

The above formula makes 7 gallons of paint which covers about 400 square feet per gallon, one coat.

*Either raw or boiled.

9. PAINTING METAL

(*a*) (Here list and describe surfaces to be painted.)

(*b*) All metal surfaces before priming shall be cleaned thoroughly with steel scrapers, wire brushes or by means of sandblasting where necessary.

(*c*) Galvanized iron, or all metal surfaces where solder fluids have been used, shall be carefully cleansed with petroleum spirits before any paint is applied.

(*d*) All metal work shall receive three coats of paint as follows: (Here specify paint to be used for each coat; writing in the formulas if Dutch Boy paste red-lead is to be used; designating by name and number in the case of the Dutch Boy Liquid Red-Lead Paints. If a light-colored finish is wanted on exterior metal, specify for the second and third coat Formulas No. 2 and No. 3 (Page 5), respectively. If a light-colored finish is desired on interior metal, specify for the second and third coat, Formulas No. 25 and No. 26, No. 26-1 or No. 27 (Page 8), respectively.)

FORMULA No. 34

Priming Coat—Metal Surfaces

(Orange-Red)

MATERIALS	QUANTITIES
Dutch Boy paste red-lead	100 pounds
Dutch Boy raw linseed oil	1⅞ gallons
Pure turpentine	1½ pints
Dutch Boy liquid drier	1½ pints

The above formula makes 4½ gallons of paint which covers about 600 square feet per gallon, one coat. This paint weighs 26.1 pounds per gallon and contains 33 pounds of dry red-lead to the gallon of oil.

(or)

DUTCH BOY LIQUID RED-LEAD No. 1

(Orange-Red)

This paint weighs 28 pounds per gallon, contains 33 pounds of dry red-lead to the gallon of oil and covers about 600 square feet per gallon, one coat.

FORMULA No. 35
Second Coat—Metal Surfaces
(Light Brown)

MATERIALS	QUANTITIES
Dutch Boy paste red-lead	100 pounds
Dutch Boy linseed oil	1⅞ gallons
Dutch Boy lampblack	¾ pint
Pure turpentine	1½ pints
Dutch Boy liquid drier	1½ pints

The above formula makes 4⅝ gallons of paint which weighs 25.9 pounds per gallon and covers about 600 square feet per gallon, one coat.

(or)

DUTCH BOY LIQUID RED-LEAD No. 6
(Light Brown)

This paint weighs 26.8 pounds per gallon and covers about 600 square feet per gallon, one coat.

FORMULA No. 36
Third Coat—Metal Surfaces
(Black)

MATERIALS	QUANTITIES
Dutch Boy paste red-lead	25 pounds
Dutch Boy lampblack	1⅞ gallons
Dutch Boy C. P. prussian blue	½ gallon
Dutch Boy linseed oil	2¼ gallons
Pure turpentine	3 pints
Dutch Boy liquid drier	3 pints

The above formula makes 6 gallons of paint which weighs 11.6 pounds per gallon and covers about 700 square feet per gallon, one coat.

(or)

DUTCH BOY LIQUID RED-LEAD No. 5
(Black)

This paint weighs 11.6 pounds per gallon and covers about 700 square feet per gallon, one coat.

NOTE: The red-lead priming coats offered in these specifications are mixed on the basis of 33 pounds of dry red-lead to the gallon of linseed oil. Experience has shown that a primer of this composition gives maximum durability and service, particularly where exposure conditions are severe as in warm, moist climates or near the seacoast.

If, however, exposure conditions are not so severe it is frequently possible to use a lighter weight primer containing a lower percentage of pigment and secure perfectly satisfactory results.

For this purpose, National Lead Company offers Pure Red-Lead Paint No. 25 and Pure Red-Lead Paint No. 16. Both are 100% pure red-lead paints, the former mixed on the basis of 25 pounds of dry red-lead to one gallon of vehicle, the latter on the basis of 16 pounds of dry red-lead to one gallon of vehicle.

9-A. PAINTING METAL WHEN QUICK DRYING IS REQUIRED

Whenever conditions demand quick drying Dutch Boy Quick-Drying Red-Lead Primer should be specified.

Dutch Boy Quick-Drying Red-Lead Primer is a straight red-lead paint weighing 19.3 pounds to the gallon. Its quick drying properties are obtained through the use of a synthetic resin vehicle. It dries for recoating in from two to six hours. It is specially adapted for use in painting ships, water tanks and other equipment which cannot be conveniently kept out of service for an extended period.

Dutch Boy Quick-Drying Red-Lead Primer dries to a hard, firm, yet elastic film, uniform in thickness. It adheres tightly to metal, holds well the paint coats applied over it, and will stand severe rubbing. On exposure, it is resistant to the softening action of water. It may be used for all coats. For inspection purposes succeeding coats can be tinted to brown by the addition of from ⅛ to ½ pint of lampblack per gallon. If the proportion is increased beyond ½ pint to a gallon, the lampblack should be ground in japan.

GOOD PAINTING AND HOW TO ASSURE IT

The preceding specifications are based not only on our own constant testing of paints and painting methods under actual service conditions but also upon the practical knowledge and experience of skilled painters. But no matter how carefully worked out they may be, the usefulness of these specifications to any particular individual depends chiefly on his acceptance of white-lead and red-lead as satisfactory paints for the job he is considering at the time.

In other words, the specifications represent standard practices and it seems only logical to devote a portion of the space to a discussion of the facts upon which the recommendations are founded. In this way the picture will be complete. It will include the "why" as well as the "how" of specifying Dutch Boy paint products.

NOTES ON EXTERIOR PAINTING

Paint is specified for exterior surfaces to bring about a combination of benefits including preservation and better appearance. The exterior surfaces for which it is fittingly specified include practically all the common building materials . . . wood, concrete, brick, stucco, stone, metal. But no matter what the purpose nor what the surface, the man who pays the bill wants the paint that is specified and used to function longer than any other paint that might have been used. In short he wants maximum paint life and, usually, minimum paint cost.

So it becomes the problem of those responsible for the specifications to merge these two requirements into realization. This can be done and has been done on numberless occasions through the selection of white-lead.

That is to say—white-lead has a long, proved background of practical use behind it. It takes years, as a rule, to prove whether a paint or a painting method is sound. There are plenty of instances where trouble has developed ten years after the wrong materials were employed or the wrong method followed. But white-lead has been used for many generations. Its qualities have been attested by thousands upon thousands of actual paintings and repaintings. Its performance thus becomes a matter of past knowledge and not a matter for future speculation.

This is why we can say that white-lead is a safe paint to specify and a safe paint to use, a statement which remains true not only under ideal laboratory conditions but in practical, everyday situations as well. In other words, white-lead is a paint with a generous margin of safety. Factors that may be beyond the specifiers control, such as poor weather conditions at the time of painting, are rendered less hazardous. Of course, such unfortunate happenings do affect the life and the appearance of any paint job but the more foolproof the paint, the less the damage.

Another fact that should never be forgotten is that today's painting governs tomorrow's repainting. Paint must wear out . . . must be replaced sooner or later. How soon and how inexpensively depends on what is done now.

It is a simple, arithmetical truth that the longer repainting can be postponed safely, the less the cost per year for the original painting. It is likewise true that the cost of the repainting will be much less if the old surface requires no more preparation than dusting off loose dirt. That's all a white-lead job needs. White-lead wears down slowly and evenly . . . an action known as "chalking." One of its great advantages is that the surface is smooth and unbroken when it is time to repaint.

The specifications contained in this booklet also cover the use of red-lead for painting iron and steel surfaces. It requires little argument to prove that exposed surfaces of iron and steel need continual paint protection. Frequently, a few hours in the weather is enough to start rust on bare metal and once started rust never rests. Rust spots soon develop into damage spots and in a few months can seriously endanger an expensive structure.

Pure red-lead paint has the faculty of sticking so tight to metal that it becomes almost a part of the surface it covers. Red-lead has long been as prominent in the protec-



This photograph of the siding on a double house tells its own story about paint. The owner of the left side of this double house "saved" money on the initial cost of his paint job. He paid $16 less than the owner on the right side who got a white-lead job. Both jobs were two years old when the picture was taken. The "cheap" paint job is through. The white-lead job is still good for plenty of service.

tion of metal as white-lead is in the preservation of wood and other surfaces. Most of the important structures in the world have had red-lead protection ever since the metal left the mill.

The long wear and resultant economy of Dutch Boy red-lead is a matter of record and the same arguments we have used to justify the specifying of white-lead apply with equal truth and force to this standard metal protecting paint. It is always to the best interests of the architect or engineer, the owner and the structure itself to specify red-lead paint—Dutch Boy red-lead paint—of proper type and formulation to fit the job to be done.

NOTES ON INTERIOR PAINTING

To properly choose an interior paint the standard for judging it must first be determined. On many jobs—probably on most jobs—the standard is appearance.

In this respect, white-lead is really in a class by itself. There is no other paint that gives quite the same effect—an effect which can best be described as a solid, rich beauty of finish. For many generations this quality has made white-lead the unquestioned choice for fine interiors. The elaborate decorations of church interiors, the impressive treatments of the important rooms in hotels and public buildings, the best effects in homes, all have been achieved with white-lead paint.

White-lead must necessarily bring this same beauty of finish, this same fine appearance to all interiors for which it is used.

Another factor related to appearance is color. So often it is imperative that an exact shade or tint of color be employed to effect the architect's purpose or to fit in with a particular structural design. White-lead, being a custom-made paint mixed on the job, can be tinted to just the right color with Dutch Boy colors in oil. The architect, the decorator and the owner will all receive the effect they want, not just something approximately like it.

On the other hand, the standard for judging the value of an interior paint might be durability. That is, the type of durability that will successfully withstand cleaning with soap and water as well as the ordinary wear and mechanical abrasion to which most interior surfaces are subject.

Here again, white-lead mixed as recommended in these specifications has unique advantages. The resulting flat paint produces a thoroughly "cleanable" surface—one that can be scrubbed as frequently as necessary to keep it in good condition. It is a flat paint that is daily demonstrating its durability under actual service conditions.

There are times, just as in the specifying of outside paint, when cost becomes the all-important factor. Even on this basis white-lead has nothing to fear if all the phases of cost are considered. There are interior "flats" sold for a lower price per gallon, of course, but application has a vital influence on interior painting costs. Dutch Boy goes on so easily and levels out so smoothly that a man can paint more surface per hour. Thus the labor charge per square foot applied is lowered. Also, Dutch Boy white-lead covers at least 800 square feet per gallon on smooth plaster which makes it an economical paint from the standpoint of the quantity needed for the job.

So, no matter what the yardstick for selecting an interior paint may be, Dutch Boy white-lead will work out to the advantage of the man who foots the bill. It is a flat paint that will stand out against the field in any reasonable and fair test and one that the architect can specify with perfect confidence both as to its immediate satisfaction and its future performance.



WALKED ON - - -



SMEARED - - -

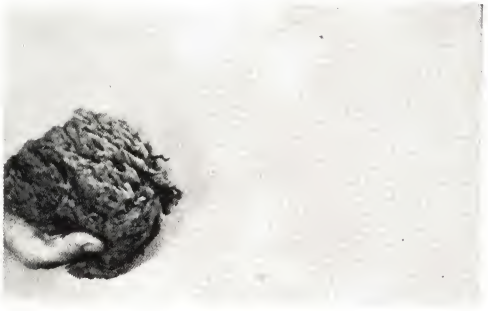
Just to prove the remarkable sturdiness of white-lead flat paint we put it through a special gruelling test. Instead of painting it on a wall we used a square of wallboard that could be walked on. For a full week, lying on the floor in a busy doorway, this paint was tramped upon by hundreds of feet. Back and forth . . . heel and toe . . . grind and crush went these feet until the original white became a very dirty gray.

Even this wasn't all. Walls aren't walked on but many of them are soiled with such things as grease, lipstick, iodine, shoeblacking, ink and pencil marks. So all of these were streaked on this already mistreated painted surface. Then it was washed. Water and washing powder cleaned this paint so that it looked practically new again.

This, we respectfully submit, is PAINT WEAR *. . . the kind of wear that you should get from the flat paint you specify . . . or else your client is not getting everything from his paint dollar.*



WASHED - - -



- - - CLEANED!

NATIONAL LEAD COMPANY

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Paints, Varnishes and Enamels

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A complete line of architectural paints, varnishes and enamels.

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Olo-Speed—Highest quality universal varnish. Dries in four hours.

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There is an Olo Product for Every Surface. When you insist that Olo Products are used, your client is getting more paint value for each dollar he spends.

We invite your inquiries.

Exterior Specifications

Shingle Stain—At least two coats on all jobs.

House Paint—Prime coat use Olo Exterior House Paint Primer. (Assures better adhesion, denser covering and longer gloss retention of finish coat.)

Finish Coat—Apply Olo 70-30.

House Paint—(70-30 is a pure lead and zinc paint) or where a house paint made with titanium pigment is desired, specify Olo Pure Linseed Oil House Paint.

Interior Specifications

Unpainted Plaster—

First Coat—Olo Seal—(Olo Seal is a heat treated China wood oil size. It contains no rosin or glue. Will prevent lime burning through succeeding coats.)

Second Coat—Olo pigmented primer and sealer. (A dense covering, white, hard drying primer. Stops suction and is an ideal undercoat for any desired finish coat.)

Finish Coat—Olo Egg Shell Flat, Olo High Gloss Enamel, Olo Satinamel (a first quality semi-gloss finish) or any other Olo product depending on type of finish desired.

Previously Painted Surfaces—

Follow second and third coat specifications.



New Watervliet High School, Watervliet, N. Y.

Architect: Chas. F. Egan, Troy, N. Y. Engineers: Solomon & Keis, Troy, N. Y.

General Contractors: Turner Construction Company, Amsterdam, N. Y. Painting Contractor: Chas. W. Morrison & Sons, Saratoga, N. Y.

All Paints, Varnishes and Architectural Finishes used were Olo Products manufactured by the Passonno-Hutcheon Co.

154J

MEMORANDA

PITTSBURGH PAINTS

Smooth as Glass



of the PITTSBURGH PLATE GLASS COMPANY

A LIST OF PITTSBURGH PAINT PRODUCTS

EXTERIOR PAINTS

EXTERIOR PRIMER ●

Wallhide Exterior Primer—The "Vitolized Oil" Paint

Designed for use on any exterior standing wood surface. Its use results in an undercoat that effectively counteracts the causes of exterior paint failures. Because of its flexible nature it is not suited for use on floors or steps.

It will improve appearance and durability of any suitable finish-coat paint. The "Vitolized Oil" gives it new properties—overcoming dead flat spots, fading of tints, and premature chalking. It provides unusual resistance to blistering and peeling.

Available in two colors: White and Neutral.

White should be used under white and light colored finish coats, and Neutral under darker colors. White and Neutral may be intermixed to produce intermediate shades.

Wallhide Exterior Primer is a liquid paint which should be thinned to brushing consistency with not to exceed one pint of Leptyne or Turpentine per gallon.

Much superior in hiding to ordinary Lead and Oil Primer. Hiding of predominating lead pigment has been considerably increased by addition of Titanium White. Therefore, a two-coat job consisting of Wallhide Exterior Primer and a suitable finish coat is equal in appearance to the average three-coat job obtained when ordinary or penetrating primer is used.

Depending upon the kind of surface, the following figures may be used for estimating purposes:

Coverage—*New Work—400 sq. ft. per gal.*
Old Work—600 sq. ft. per gal.

EXTERIOR VEHICLE ●

Vitoloil

A paint oil that, when added to exterior paste or liquid paints, will impart many desirable qualities that add to durability and general success of painting operations. It improves flowing and leveling properties, decreasing brush marks and producing a more uniform coating. Color retention is also improved due to proper degree of sealing and the elasticity that Vitoloil imparts. Pigments are strengthened to function properly and fading of color is retarded considerably.

Vitoloil contains no resins or gums. A specially processed vegetable oil that adds life to paints and improves appearance.

GENERAL EXTERIOR ●

Sun-Proof Paint

Unfailing in uniform quality. Built on time tested formula which all usage has proven gives satisfactory results. Its use assures protection through extreme durability, economy, through long service, and beauty because of the thirty-two modern colors (in addition to White and Black) in which it is made.

Coverage—*350-400 sq. ft., two coats, or 250-275 sq. ft., three coats.*

Snolite—White Paint

A super-quality, semi-paste intensely white which permits of quick reduction at a minimum expense of time and labor. When ready for application, Snolite has fully one-half greater opacity than standard, many paints considered, which makes it economical to use. Can be tinted any shade and mixed with other pigments. Dries to a smooth surface which chalks moderately and leaves surface in excellent condition for repainting.

Plasco—Ready Mixed—a lower priced paint

Suitable for exterior surfaces. Works easily, hides exceptionally well, good body and dries to an oil gloss.

Twenty-four colors, also Black and White.

Coverage—*250-300 sq. ft., two coats.*

MOISTURE RESISTANT ●

Cementhide—A subdued gloss coating

For dampproofing, preserving and beautifying standing surfaces of stucco, concrete, brick, stone or plaster, exteriors of residences, business buildings, warehouses, etc. Made in eight colors and white. Proper pigment selection and treatment of oil used in the liquid results in remarkable wearing properties. Cementhide works very easily and dries overnight.

Coverage—Cementhide reduced for priming—100-200 sq. ft. per gal. Cementhide reduced for finishing coats will cover 200-450 sq. ft. per gal. depending upon surface.

Porchide—where temperature change is frequent

Designed to give utmost durability where temperature changes are frequent and exposure to weather, moisture and sunlight are severe. Withstands traffic and abrasion, will hold color and retain its gloss. May be recoated in six to eight hours. Overnight drying is recommended.

Coverage—*One gallon of Porchide will cover approximately 250-275 sq. ft. of surface, two coats, depending on type of surface.*

Ironhide—A tough, elastic, ready-mixed paint

Mixed ready for use. It is tough and elastic. Bonds firmly to the metal. Gives long, rust-protective service. It dries for recoating overnight when brushed, or in six to eight hours when sprayed.

Coverage—*600-800 sq. ft., one coat.*

Colors—Made in Red, Brown, Green, Black, Light Gray and Dark Gray.

Tor-On—Liquid Shingle Stain

A combination of penetrating and preserving oil and pigments which fill the pores and fibres, keeping out moisture and thus protecting surfaces from fungus, warping, splitting or decay. Made in nine colors.

Coverage—*2½ gal. will dip 1000 shingles, ⅔ their length. 3 gal. will suffice for dipping, spraying, or brushing 1000 shingles. 1 gal. will brush coat 60-70 sq. ft. of surface, two coats.*

VARNISH AND ENAMEL ●

Waterspar—83-200—Transparent

Designed to give complete satisfaction on all surfaces, where an exterior varnish is specified. Pale in color; does not yellow or darken when exposed to sunlight. Has twice the durability of varnishes previously offered for exterior use. Dries dust-free in one hour; may be recoated in six hours or overnight.

Waterspar Auto Enamel

A quick drying enamel of high quality for exterior surfaces. Produces a high gloss, durable finish that will hold its color. Suitable for wood and metal surfaces exposed to the elements. Sets dust free in two to four hours and dries overnight.

EXTERIOR AND INTERIOR PAINTS

ALUMINUM PAINTS ●

Metaleaf—For general requirements

Designed to meet all general requirements as a priming coat for wood and as a finishing coat for all surfaces. Both the liquid and the aluminum portion are of the highest quality and combined in Metaleaf show definite advantages during application and in service. Furnished with the aluminum portion in paste or powdered form for preference. Packed in convenient two-compartment cans, one for holding liquid and the other the aluminum portion. Freshly mixed Aluminum Paint has a distinct advantage in leafing action over the same paint prepared in ready mixed form and kept for considerable time before use.

Aluminum Liquids Nos. 20, 30, 40

These mixing liquids are made to hold the powdered or paste aluminum in proper suspension for painting. The liquids cause the paint to adhere well to the surface and retain elasticity without becoming brittle from use or exposure.

CLASSIFIED ACCORDING TO USES

INTERIOR PAINTS

GENERAL INTERIOR

Alba-Lux (White-Light) Smooth, Durable, Washable

Smooth, impervious, washable, durable, non-poisonous, economical and sanitary. For use in mills, creameries, shops, factories, etc., on all types of interior surfaces—wood, brick, plaster, concrete. May be applied with brush or spray gun.

Coverage—*New Work—First Coat Flat—300-500 sq. ft. one coat. Second Coat Gloss—600-800 sq. ft. one coat.*

Old Work—First Coat Flat—450-650 sq. ft. one coat. Second Coat Gloss—600-800 sq. ft. one coat.

Plastic Velumina—For Decorative Effects

A plastic, paste-like material which may be applied to any surface to which paint or varnish may be applied, new or old work. It offers opportunity to show skill and individuality in producing various plastic effects in swirls, imitation stone, etc.

WALL PAINTS

Wallhide Interior Wall Paint—The "Vitolized Oil" Paint for Interiors

The outstanding characteristic of Wallhide, the "Vitolized Oil" Paint, is its ability to produce a satisfactory paint job under difficult conditions.

Wallhide Interior First Coater—A "Vitolized Oil" Paint

Designed primarily for plaster walls, for either new work or repainting, but is equally suitable for use on standing interior wallboard, wood, brick, and cement surfaces under any type of oil or varnish base finishing material—flat, eggshell, or gloss. The "Vitolized Oil" in this product gives it superior properties of sealing, stopping suction, and overcoming effects of hot spots. May be used also under other interior paints.

Wallhide Interior Flat Wall Paint—A "Vitolized Oil" Paint

Wallhide Interior Wall Paint, in colors, is a "Vitolized Oil" Paint, of the same type as Wallhide Interior First Coater. It possesses unusual characteristics—the most outstanding of which are:

(1) Finished walls in one day, one or two coats—old or new walls.
(2) Unsurpassed hiding; one coat over old paint; two coats on new walls.
(3) Washable: Easy washing replaces redecorating.
(4) Perfect light diffusion.
(5) Modern, soft, pleasing colors.
(6) Easy to apply.
(7) Proof against peeling or cracking.
(8) No brush marks.
(9) Tough, adherent, non-absorbent film.

Made in 15 colors and white, and blending and glazing liquid.

Wallhide Interior Semi-Gloss

For the busy rooms, where cooking and washing are the daily activity, and where children play, Wallhide Semi-Gloss, the impervious, dirt-resistant finish, offers excellent service. A finish that resists grease, ink and pencil marks, is washable with a minimum of effort, and this same washability makes Wallhide Semi-Gloss the practical material for baths and laundries.

Wallhide Semi-Gloss is also recommended for use in certain hospital rooms, corridors in public buildings, schools, hotels, hospitals, office buildings, and stores.

Twelve shades, White and Gloss White.

WALLHIDE PRODUCTS FOR THE MASTER PAINTER

There are available, in addition to Wallhide Interior First Coater and Interior Wall Paint, two other Wallhide products, as follows:

(1) Wallhide P. B. X.—White.
(2) Wallhide Finishing Coat—Stipple White.

These products enable master painters to do their own tinting, producing shades not found in the regular Wallhide Interior Wall Paint line.

Wallhide Stipple White is a semi-paste which can be manipulated to produce a fine or coarse stipple finish.

Wallhide P. B. X. White was developed especially for use in schools, hospitals, public buildings, etc., where walls are subjected to frequent washings. It will withstand this treatment to an unusual degree without showing streaks and spotting. This finish results in a slightly higher sheen than regular Wallhide Finishing Coats.

ENAMELS, STAINS AND VARNISHES

Florhide Enamel

The Florhide film is hard and tough. It resists wear and water. Frequent mopping and scrubbing with soap solutions of varying strength are injurious to many floor enamels. Florhide withstands this treatment to an exceptional degree. Made in ten colors.

Dries dust free in two hours and is hard enough for recoating in four to six hours.

May also be used on upright surfaces of wood, concrete, stone, plaster or metal. 250 to 275 sq. ft. per gallon two coats.

Utility Enamel

Produces a tough, high gloss, durable finish, proof against harm from water or oil. Ideal for use over larger surfaces when cost of the highest grade enamel would be prohibitive.

Banzai Quick Drying Enamel

Perfect body: Ideal flowing. Furnished in Gloss White Enamel, Eggshell White Enamel, and Double Cover Undercoater—for interior or exterior finishing. Banzai Enamel possesses individuality and distinction seldom approached by other enamels.

Waterspar Quick Drying Enamel

Waterspar Quick Drying Enamels are full-bodied and hide solidly in one coat. These bright colored enamels are intended for all home decorative purposes.

Note: Quick Drying has been secured without sacrifice of durability, brushing, hiding, or adhesion.

Pitcairn Wood Stains

For use in staining wood, tinting fillers, and coloring varnishes for interior use. Equally effective on hard or soft woods.

Pitcairn Wood Stains penetrate open or closed grained woods without causing objectionable raising of grain. Suitable for use on all interior wood surfaces. All Colors mix readily with varnish, except 74-16 Silver Gray, which is an acid stain. They contain no water, alcohol, acid, or alkali—except 74-16. They set slowly enough that surplus may be easily removed by wiping, without laps.

Pitcairn Aged Varnishes

In the "Balanced" Line of Pitcairn Aged Varnishes there is a quality product to meet every varnish requirement. While some special quality may have been emphasized in certain varnishes to meet special needs, it has not been at the expense of other properties which are essential to quality results in application and service. The completeness and conciseness of the "Balanced" Line will be apparent from the listing of the individual products:

1. Marine Spar.
2. Compo Drier
3. Finishing Spar.
4. Master Painters' Spar.
5. Satin Finish.
6. Floor Spar.
7. Cabinet Rubbing and Polishing Spar.
8. Pure Batavia Damar.
9. Church Pew and Seat.
10. Utility Spar.
11. Dull Finish.
12. Gym Spar.

Waterspar 83-400 Floor Varnish

A durable quick drying varnish especially for use on interior floors. It will withstand extreme hard wear from foot traffic and abrasion. Produces a transparent finish of high gloss that is resistant to moisture and alkali. Dries dust free in one hour and may be recoated in six hours or overnight.

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GENERAL CONDITIONS

Instructions to Bidders

The general conditions and instructions to bidders as applied on the general contract, apply also on the painting contract.

Scope of Work

The work to be done by the painting contractor includes the furnishing of all material, labor, tools and equipment which shall be required to complete the painting and finishing of the buildings as specified.

Exceptions—Painting contract does not include shop coats.

Workmanship

All work shall be done in a workmanlike manner and by skilled mechanics. All materials shall be evenly spread and smoothly flowed on and shall be free from runs or sags, and no paint, varnish or enamel shall be applied until preceding coat is thoroughly dry and hard.

No exterior painting shall be done in rainy, damp or frosty weather or until surface is thoroughly dry.

No interior painting or finishing shall be permitted until building has been thoroughly dried out by artificial heat.

In general and unless otherwise recommended and specified, exterior oil paints shall be allowed to dry at least forty-eight hours between coats and interior paints shall be allowed to dry at least twenty-four hours between coats.

Enamels and varnishes shall be allowed to dry at least forty-eight hours between coats unless noted in the detail specifications and shall be sanded lightly between coats with No. 0 sandpaper and dusted before succeeding coat is applied.

After applying paste wood fillers, excess shall be carefully and neatly cleaned from surface by rubbing across grain. All nail holes shall be filled with putty, tinted to match finish.

Preparation of Surfaces

Painting contractor shall be wholly responsible for finish of his work, and therefore, shall not commence any part of it until surface is in proper condition in every respect. If painting contractor considers any surface so unsuitable for proper finish of his work that it cannot be rectified by slight sanding, he shall notify the Architect of this fact in writing before any materials are applied and he shall not apply any material until the unsuitable surfaces have been made satisfactory, or the Architect has instructed him to proceed.

All knots or sappy spots shall be given one coat of shellac at least ten hours before painting.

All necessary puttying of nail holes, cracks and blemishes shall be done after priming coat has become hard and dry and before second coat is applied, and putty shall match the shade of finish coat.

On old paint the surface shall be first brushed with a wire brush or sandpapered and where it is scaling badly, shall be scraped or burned off.

All greasy or oily metal surfaces shall be cleaned with turpentine or benzine before applying any materials. All scale or rust shall be removed by scraping, wire brushing or sandblasting.

Materials

All materials used under painting contract shall be as manufactured by the Pittsburgh Plate Glass Company and shall be delivered on the work in the original sealed containers.

All mixing required shall be done on premises, and materials shall be thoroughly stirred and agitated. No materials shall be reduced or changed in any way except as and when specified, and thinners must be pure.

Any tinting or matching of colors shall be done under the supervision of the Architect. In all cases a sample shall be applied on the job and the Architect must give his approval of it before work is actually begun.

Protection of Property

Painting contractor shall be responsible for condition of building in his charge. He shall protect adjacent work and materials as well as his own.

Inspection

Every facility shall be provided for inspection of work at any time by the Architect or his authorized representative. Any work not conforming to these specifications shall be cleaned off and repainted at expense of contractor.

Removal

When work is completed, the painting contractor shall remove all surplus materials, scaffold, etc., and he shall clean off all misplaced paint, varnish, etc., so as to leave premises in perfect condition, acceptable to the Architect.

SPECIFICATIONS FOR PAINTING AND VARNISHING

METAL PROTECTIVE COATINGS—Exterior and Interior

1 EXTERIOR and INTERIOR, IRON, STEEL, and ORNAMENTAL IRON (Not Galvanized)

Three Coat Work

1st. Apply Inhibitive Red Ironhide. If brushed, allow overnight drying. If sprayed, succeeding coat can be applied in 6 to 8 hours. Use as received for brush work. For spraying add not to exceed one pint of Leptyne or Turpentine. It is advisable that first or shop coat be applied at shop before metal is shipped to site or exposed to weather.

Note: Any portion of surface that may have become scuffed off during handling or transportation should be touched up with Inhibitive Red Ironhide before applying second coat.

2nd. Apply Inhibitive Brown Ironhide. If brushed, allow overnight drying. If sprayed, succeeding coat can be applied in 6 to 8 hours. Use as received for brush work. For spraying add not to exceed one pint of Leptyne or Turpentine.

3rd. Apply Finishing Black, Dark Green, Light or Dark Gray Ironhide as received for brush work. If sprayed, add not to exceed one pint of Leptyne or Turpentine.

Note: If Gray Ironhide is selected for Third Coat, it is advisable that second coat be Gray also to insure proper hiding.

Two Coat Work

Eliminate second coat from above directions.

2 ALTERNATE TO SPECIFICATION NO. 1

Three Coat Work

1st. Apply Ironhide Inhibitive Red as received in the package.

2nd. Pittsburgh Liquid Graphite as received in the package.

3rd. Same as second coat.

Two Coat Work

Eliminate third coat from above directions.

3 EXTERIOR and INTERIOR GALVANIZED IRON, PROCESSED METALS and METALBOARDS

Two Coat Work

PREPARATION OF SURFACE

(1) Clean surface thoroughly with naphtha using a stiff brush to remove all oil, grease and dirt. (2) Treat all surfaces with a wash coat consisting of one pound of Copper Sulphate dissolved in a gallon of water. Application may be made by spray, sponge, brush or any other convenient method. If surface turns black, it signifies that it is clean. (3) Rinse off thoroughly with clear water using a brush, if necessary, to insure removal of sludgy deposit. The rinsing may be done immediately after application. After surface is dry proceed as follows:

1st. Apply a coat of 20811 Galvanized Iron Primer after mixing the powder which is in a separate compartment with paint liquid in liquid compartment. After mixing the material is ready for use but may be reduced slightly with Leptyne or Turpentine if necessary. Allow twenty-four to thirty-six hours for drying.

2nd. Apply any suitable brushing coat such as Black or Dark Green Ironhide or selected color of Sun-Proof Paint or Waterspar Auto Enamel as received in the package.

Note: 20811 Galvanized Iron Primer should be used on all galvanized iron or processed metals under any finishing coats after preparing surface as directed above.

4 EXTERIOR and INTERIOR, IRON and STEEL ALUMINUM PAINT

1st. Apply Ironhide Inhibitive Red as received in the package.

2nd. Apply Metaleaf Aluminum Paint per directions on the package.

3rd. Same as second coat.

Note: Metaleaf Aluminum Paint is furnished in a two-compartment package to permit mixing of aluminum portion just before use. This assures greater smoothness, brilliance and adds to durability.

5 EXTERIOR and INTERIOR HOT SURFACES of IRON and STEEL

When repainting old work it is especially important that all old scale and burnt paint are thoroughly removed by scraping and using a wire brush.

One coat only is recommended to permit a film which is not too thick, as a thick film would have a tendency to blister and peel off.

Use one coat of Aluminum Paint made by mixing two pounds of aluminum powder or paste to one gallon of Pitcairn Aluminum Liquid. Use No. 40 Liquid for interior use and No. 20 Liquid for exterior use.

Note: For surfaces where temperature reaches over 600 degrees F. write PITTSBURGH PLATE GLASS COMPANY *for recommendations.*

6 EXTERIOR ENAMELS for METAL SURFACES (Not Galvanized)

1st. Select proper Waterspar Primer-Surfacer. Use 55-55 White under White and light colors and 55-56 Red Oxide under dark colors. Apply as received or reduced slightly with Leptyne or Turpentine. After overnight drying, sand smooth.

2nd. Apply a coat of selected color of Waterspar Auto Enamel as received in the package or reduced slightly with Leptyne or Turpentine.

3rd. Same as second coat.

Note: Galvanized or processed metal surfaces should be prepared and first coated as directed in Specification No. 3 and followed by above three coats.

7 PAINTING METAL ROOFS (Not Galvanized)

New or Old Work

1st. Apply Ironhide Inhibitive Red as received in the package.

2nd. Apply Ironhide Inhibitive Red, Dark Green, or Finishing Black depending on preference.

Alternate

As an alternate system to above use the following:

1st. Apply a mixture of one gallon Pittsburgh Barn and Roof Paint (Red or Gray) and one-half gallon Boiled Linseed Oil.

2nd. Apply Pittsburgh Barn and Roof Paint (Red or Gray) as received in the package.

Note: Galvanized or processed metal surfaces should be prepared and first coated with 20811 Galvanized Iron Primer as directed in Specification No. 3 and followed by the two coats as directed in either of above two systems.

8 INTERIOR WHITE ENAMEL—METAL TRIM and CEILINGS, ORNAMENTAL IRON

1st. Banzai Quick Drying Undercoater reduced slightly with Leptyne or Turpentine if necessary. Dry overnight. Sand lightly.

2nd. Same as first coat. If final finish is to be gloss, greater depth may be secured by using a mixture of equal parts of Banzai Quick Drying Undercoater and Quick Drying Gloss Enamel for second coat. After overnight drying, sand lightly and dust thoroughly.

3rd. Banzai Quick Drying Gloss White or Eggshell White depending on type of finish desired. Dry overnight. Sand lightly.

4th. Same as third coat.

Note: Banzai Quick Drying Undercoater and Enamels may be tinted to light shades with Pittsburgh Fluid Oil Colors.
Galvanized Iron or processed metal surfaces should be prepared and first coated with 20811 Galvanized Iron Primer as directed in Specification No. 3 and followed by second, third and fourth coat as recommended above.

9 INTERIOR—WHITE and COLORED ENAMELS, ORNAMENTAL IRON

1st. Wallhide Interior First Coater, each gallon reduced with one quart of Leptyne or Turpentine.

2nd. and 3rd. Waterspar Quick Drying Enamel of shade selected, applied as received in the package.

STYLING WITH PAINT

Styling with paint consists of selecting colors that are currently in demand and using them in the painting of a home in a manner that follows current style trends. From the analyses of the different exteriors and interiors recently surveyed, it has been possible to develop certain rules with respect to color that should be applied in the painting of houses, if styling is to be achieved.

COLONIAL TYPE

The roof is usually a conservative color, Black or Gray. The body customarily consists of brick, clapboard or, on occasion, a combination of both. It is generally White, although natural brick Red, Cream or Gray are sometimes employed. Windows, doors, sash and downstairs shutters correspond with the body color, while the upstairs shutters present different colors, such as Dark Green, Olive, Dark Blue or medium Green.

SMALL COTTAGE TYPE

The roof is usually composition shingle in variegated colors, or it may be the traditional dark Red, Green, Gray or Black. White, followed by Ivory and Light Gray, are the leading body colors. Trim, including front door, is usually like the body or else a shade lighter or darker. The sash repeats the trim color. Shutters bring in a color fresh to the general scheme, such as Olive, Red, Chocolate Brown, Maroon or Black.

LARGE COTTAGE TYPE

Roofs are most frequently Gray, Black or Dark Green, although the composition shingle ones showing bright Spanish mixtures are also popular. White is still the leading body color with Gray, Greenish Gray, Ivory, Buff and Lemon Yellow close seconds. The trim, including door, window trim and sash, corresponds with the body or may be a little lighter, such as White or off White. Shutters are in gayer colors—Green, Electric Blue, Deep Gray and Maroon hold the field.

ENGLISH TYPE

A dark roof, such as Gray, Brown, Deep Red or Black, is most popular here although multi-colored composition shingles are often seen. The English type house usually combines brick with stucco and should be painted in one solid color. White, Cream, Light Gray, Ivory and Taupe are the leading shades. A trim darker than the body is in good taste and Dark Brown is still favored. Black or Dark Brown are featured sash colors. Shutters are seldom found but when present are generally seen on one story only. Dark Blue or Deep Green are the usual shutter colors. Brown as a shutter color is no longer popular. The door is most often White, Ivory, Medium Green or even Light Blue, and the Brown door stained to match the half timbers is still in good taste.

FRENCH TYPE

The roof color is usually developed to avoid light, bright effects and should favor Black, Dark Green, Dark Red, Dark Gray, Dark Brown or variegated colors of low brightness. White is the most popular body color with Light Gray, Cream and Grayish Green also in good taste. Trim, including sash, usually follows the body color, although it is darker than the body in some instances. Shutters are usually found on one floor only and are in bright colors—such as Green or Blue or else Black. Doors usually match the trim or else add a French note by wearing two related colors.

SPANISH TYPE

Tile roofs are unquestionably the choice with brightly stained wood shingles next in popularity. The body is invariably of stucco construction painted a single color with White, Cream, Buff, Ivory, Light Gray and Taupe the accepted mode. The trim can be darker, though in some dwellings the same color for both surfaces is used. Colors favored for trim are Dark Brown, Medium Gray and Black. Shutters are seldom encountered on the Spanish type house and when found are on the windows of one floor only. Dark Brown, Medium Green, Red, Cream, Medium and Dark Blue are among the popular shades. The doors as a rule are painted in a single color to match the trim.

MODERN TYPE

The roof of the flat-top modern house is usually treated as a deck or porch. Where the roof is visible the natural finish of the construction material is untreated except when wood shingled and these are painted or stained to Red, Dark Gray, Silver, Dark Brown, Black or Maroon. The body, of stucco or brick, is usually painted in a single color. White or light tints, such as Ivory, Pink, Gray, Cream or Buff, are the popular colors for body use. The trim can either be darker than or the same color as the body. It should seldom be lighter. Shutters are rarely used on the modern type house. If present, they can be carried out in the trim color or if desirable in a color of their own, independent of the other color treatment. The door is usually in one color and can either be in the trim or shutter color.

LIVING and DINING ROOMS

The ceiling is usually lighter than the side wall with the trend showing White, Light Gray, Light Lemon, Ivory and Medium Gray. The plain painted wall is most popular with all walls the same color. The practice of paneling all walls of a room is now followed to a certain extent and when employed the panel color should match the color of the stile. The dado is only occasionally used. White, Light Green, Light Fawn, Medium and Light Lemon are among popular wall colors. The trim is customarily lighter or the same color as the walls and White, Ivory, Light Lemon, Medium and Light Gray, Light Green, Medium Lemon and Sand are still favorites.

HALLS

Halls are being finished with ceilings in a tone darker than the side walls and preferably a different color, with Light Gray, White, Medium Gray, Light Azure, Rose Beige and Deep Green favorite colors. The plain one-color wall is still popular with Medium Gray, White, Light Fawn, Pink, Deep Buff and Medium Blue in demand. The trim, while customarily lighter than the wall color, is now tending toward increased depth of tone. While White continues as the most generally used trim color, such shades as Medium Green, Light Fawn, Light Lemon, Sand, Deep Grays and Tans are coming forward.

BEDROOMS

The ceilings remain lighter than the walls with White continuing in most general use, but colors such as Light Lemon, Light Gray, Ivory, Chocolate, Sand, Dark Blue and Dark Fawn are on the increase. The walls are most often treated in a single color, though occasionally one wall will be styled in a different color from the others. The range of popular colors appears very broad, including White, Light and Nile Green, Light Gray, Light Fawn, Dusty Pink, Dark Azure, Pink, etc. The trim remains lighter than the wall with the trend toward matching the wall color becoming more popular.

KITCHENS and BREAKFAST ROOMS

The ceiling is generally the same color as that used on the side wall with, however, a pronounced trend becoming apparent for using a lighter tint on the ceiling than on the walls. Such colors as White, Light and Deep Lemon, Sand, Light Buff and Light Gray are the mode. The walls should be similar in color, favoring deeper shades of the above mentioned tints, in addition to Nile and Deep Green, Chrome Yellow, etc. The trim has, for some time, been carried out in a color different from that used on the wall, and of about the same brightness. The colors in most popular use are Light Lemon, Chocolate, Black, Red, Light Gray and Light Cinnamon.

BATHROOMS

The ceiling has quite generally, in the past, been accorded the side wall color. There is now evident a trend toward lighter ceiling treatments in colors different from those used on the walls. Medium Gray, White, Light Lemon, Medium Green, Orchid and Apricot are quite popular. The walls carry, in most instances, tiled dadoes, and these determine the color of the upper wall. White, Medium and Deep Lemon, Black, Medium Gray and Light Cinnamon appear to be popular. The trim is usually of tile, or is painted to match it. No trend away from this practice is evident, save in the White tiled bathroom.

10 INTERIOR—RADIATORS

The most pleasing and satisfactory way to finish radiators is to make them inconspicuous by painting them the same color as the surrounding wall as follows:

1st. Wallhide Interior First Coater, each gallon reduced with one quart of Leptyne or Turpentine.

2nd. Wallhide Interior Wall Paint of same shade as wall.

11 INTERIOR—FLAT or SEMI-GLOSS PAINT—Metal Trim and Ceilings

Same as Specification No. 27.

12 ABNORMAL EXPOSURES

Recommendations should be secured from PITTSBURGH PLATE GLASS COMPANY *by describing in detail conditions involved in individual cases.*

EXTERIOR PAINTING AND VARNISHING

13 HOUSES, GARAGES, FENCES and WOOD SURFACES in GENERAL

New Work—Body or Light Colors

1st. Wallhide Exterior Primer thinned to brushing consistency with Leptyne or Turpentine or Sun-Proof with at least ½ gallon of Vitoloil or linseed added to each gallon.

2nd. Add ⅛ gallon of Leptyne or Turpentine and ⅛ gallon of Vitoloil or linseed oil to each gallon of Sun-Proof.

3rd. Add not less than ¼ gallon of Vitoloil or linseed oil to each gallon of Sun-Proof.

Repainting

Eliminate 2nd coat from above directions.

Drying

Allow at least 72 hours between coats.

New Work—Trim or Darker Colors

1st. Wallhide Exterior Primer thinned to brushing consistency with Leptyne or Turpentine or mixture of 1 gallon Sun-Proof, ⅜ gallon linseed oil and ⅛ gallon Leptyne or Turpentine.

2nd. Add ⅛ gallon Leptyne or turpentine to each gallon Sun-Proof.

3rd. Sun-Proof as received.

Repainting

If in fair condition with some gloss and mild chalking use above 2nd and 3rd coat. If badly weathered use 1st and 3rd coat.

Drying

Allow at least 72 hours between coats.

14 HOUSES, GARAGES, FENCES and WOOD SURFACES in GENERAL

1-56 Titanic Semi-Paste White is furnished in semi-paste consistency for the use of the Professional Painter and can be reduced, tinted and manipulated by him for many diversified uses. The following formulas are furnished as a general guide, but ratio of drier to oil should be adhered to:

Formula No. 1	*Formula No. 2*	*Formula No. 3*
1 gal. 1-56 Sun-Proof	*1 gal. 1-56 Sun-Proof*	*1 gal. 1-56 Sun-Proof*
1¼ gal. Vitoloil or linseed oil	*⅜ gal. Vitoloil or linseed oil*	*⅞ gal. Vitoloil or linseed oil*
¼ gal. Leptyne or turpentine	*⅜ gal. Leptyne or turpentine*	*⅛ gal. Leptyne or turpentine*
¼ pint Pitcairn Compo Drier	*¼ pint Pitcairn Compo Drier*	*¼ pint Pitcairn Compo Drier*

New Work

1st. Wallhide Exterior Primer thinned to brushing consistency with Leptyne or Turpentine, or Formula No. 1.

2nd. Formula No. 2.

3rd. Formula No. 3.

Repainting

Eliminate second coat from above directions.

Note: Three coats are preferable on outside painting of new work, but in specifications No. 13 and No. 14, the second coat may be eliminated if two-coat work is specified.

15 BARNS, ROOFS, WAREHOUSES, GRAIN ELEVATORS, ETC.

New or Old Work

1st. Apply a coat of Pittsburgh Barnhide (Red or Green) as received in the package for brush or spray. If desired it may be reduced slightly with Leptyne or Turpentine but not to exceed ⅛ gallon per gallon of paint. Dry overnight.

2nd. Same as first coat.

Note: Directions for White Barnhide are somewhat different. See package label.

16 INTERIOR FLOORS, STEPS, DADOS, ETC., OF WOOD, STONE, BRICK, CONCRETE or METAL Where a High Gloss Enamel of Superior Wearing Quality Is Required

Two coats of Florhide Enamel are recommended for all old work. Three coats should be used on all new work.

1st. Add one pint of Leptyne or Turpentine to each gallon of Florhide of selected color. Allow six hours drying.

2nd. and 3rd. Florhide Enamel as received in the package.

17 EXTERIOR FLOORS, DECKS, PORCHES and STEPS of ALL TYPES of SURFACE for Use Where Severe Weather Conditions or Extreme Foot Traffic and Abrasion Are Encountered

1st. Add one pint of Leptyne or Turpentine to each gallon of Porchide. Dry overnight.

2nd. and 3rd. Apply Porchide as received in the package.

Note: For painting Canvas Decks for first coat apply Plasco Primer Sealer reduced with one quart of Leptyne or Turpentine to the gallon. Follow with three coats of Porchide as directed above. Third coat may be omitted if desired.

18 STAINING WOOD SHINGLES

New Work

1st. Dip shingles for two-thirds their length in a mixture of one quart of Boiled Linseed Oil and one gallon of Tor-On Shingle Stain of color selected. Allow to remain immersed fifteen minutes to secure proper penetration.

2nd. Apply Tor-On Shingle Stain by brush or spray from package.

Old Work

Brush or spray mixture of one quart of Boiled Linseed Oil and one gallon of Tor-On Stain. If second coat is necessary use as received in the package.

19 STANDING EXTERIOR SURFACES OF CONCRETE, BRICK, STUCCO and CEMENT

New or Old Work

1st. For porous surfaces reduce Cementhide with an equal part of Cementhide Reducer.
For well sealed surfaces reduce each gallon of Cementhide with ½ gallon of Cementhide Reducer.

2nd. For porous surfaces reduce each gallon of Cementhide with ½ gallon of Cementhide Reducer. For surfaces which are completely sealed less Reducer is required for 2nd coat.

3rd. If required repeat 2nd coat. *In no case add Cementhide Reducer to White Cementhide for finishing coat. On white jobs use White Cementhide as received or reduce slightly if necessary with Leptyne or Turpentine.*

Note: Three coats are always preferable on outside painting of new work. but if two coats are specified third coat may be eliminated.

Repainting

When one coat work is specified over old well sealed surfaces, 2nd coat directions above will produce a satisfactory job.

20 ENAMEL for EXTERIOR WOOD SURFACES

1st. Select proper Waterspar Primer-Surfacer. Use 55-55 White under White and light colors and 55-56 Red Oxide under dark colors. Apply as received or reduced slightly with Leptyne or Turpentine. After overnight drying sand smooth.

2nd. Apply a coat of selected color of Waterspar Auto Enamel as received in the package or reduced slightly with Leptyne or Turpentine.

3rd. Same as second coat.

21 ABNORMAL EXPOSURES

Recommendations should be secured from the PITTSBURGH PLATE GLASS COMPANY by describing in detail conditions involved in individual cases.

EXTERIOR VARNISHING OF STANDING SURFACES

Two products in the line of varnishes are especially suitable for exterior use and either may be specified in the following specifications with assurance of satisfactory results.

83-200 Transparent Waterspar is recommended for general use on exterior surfaces. It has double the durability of varnishes previously offered for this use, is pale in color, retains brilliance and resists darkening or yellowing on exposure.

Marine Spar is designed for exterior use where the maximum in durability and water resistance is demanded. It produces a tough, flexible finish for all marine work. For use on surfaces subject to severest exposures.

22 EXTERIOR NATURAL VARNISH FINISH, OPEN GRAIN WOOD

1st. Apply Pitcairn Natural Paste Wood Filler reduced to brushing consistency with Benzine. Work across grain well into pores of wood and allow to dry overnight. Sand smooth with fine sandpaper.

2nd. Apply 83-200 Waterspar Transparent or Marine Spar reduced at rate of one quart of Leptyne or Turpentine per gallon.

3rd. and 4th. Apply 83-200 Waterspar Transparent or Marine Spar as received in the package. Sand lightly between coats.

23 EXTERIOR NATURAL VARNISH FINISH, CLOSE GRAIN WOOD

1st. Apply 83-200 Waterspar Transparent or Marine Spar *reduced at rate of one quart Leptyne or Turpentine per gallon.*

2nd., 3rd., and 4th. Apply 83-200 Waterspar Transparent or Marine Spar as received in the package. Sand lightly between coats.

24 EXTERIOR STAINED and VARNISHED FINISH, OPEN GRAIN WOOD

1st. Apply Pittsburgh Paste Wood Filler of desired shade tinted with Pittsburgh Fluid Oil Colors if necessary and reduced to brushing consistency with Benzine or Leptyne. Work across grain well into pores of wood and allow to dry overnight.

2nd. Apply 83-200 Waterspar Transparent or Marine Spar reduced at rate of one quart of Leptyne or Turpentine per gallon.

3rd. and 4th. Apply 83-200 Waterspar Transparent or Marine Spar as received in the package. Sand lightly between coats.

25 EXTERIOR STAINED and VARNISHED FINISH, CLOSE GRAIN WOOD

1st. Select desired shade of Pittsburgh Fluid Oil Color and reduce with about two parts of Leptyne or Turpentine by volume to one part of oil color. Apply with brush or lintless rag. Remove surplus by wiping with lintless rag with grain of wood before it sets. Dry overnight and sand lightly to smooth surface.

2nd., 3rd. and 4th. Apply 83-200 or Marine Spar as received in the package.

EXTERIOR VARNISHING OF FLOORS

26 NATURAL VARNISH FINISH, OPEN or CLOSE GRAIN WOOD

Fill open grain woods with Pittsburgh Natural Paste Wood Filler. Close grain woods need no filling.

1st. Reduce 83-200 Transparent Waterspar or Marine Spar with one quart of Leptyne or Turpentine.

2nd. and 3rd. 83-200 Transparent Waterspar or Marine Spar as received in the package.

INTERIOR PAINTING AND DECORATING

27 FLAT WALL PAINT and SEMI-GLOSS WALL PAINT for Use on Plaster, Bricks, Cement, Metal Trim and Ceilings, Interior Wood Trim

Two Coat Work

1st. Wallhide Interior First Coater, each gallon reduced with one quart of Leptyne or Turpentine. Tint this mixture with one quart of the material of color selected for finishing coat, either Wallhide Interior Flat or Wallhide Interior Semi-Gloss, depending on the type of finish desired.

2nd. Wallhide Interior Flat or Wallhide Interior Semi-Gloss of color selected for finish coat, as received in package.

Three Coat Work

1st. Wallhide Interior First Coater, each gallon reduced with one quart of Leptyne or Turpentine.

2nd. Use a mixture of equal parts of Wallhide of selected color and Wallhide Interior First Coater, reduced wtih one quart of Leptyne or Turpentine to the gallon.

3rd. Wallhide Interior Flat or Wallhide Interior Semi-Gloss of color selected for finish coat as received in package.

Note: If stipple finish is desired, use Wallhide Stipple White for last finishing coat

Wallhide P. B. X. White—(In natural color or tinted with Pittsburgh Fluid Oil Colors) is recommended on jobs which will require frequent washing such as schools, public buildings, hospitals, etc. It should be used with Wallhide Interior First Coater for second coat on three-coat system as directed above, and for finishing coat on both two and three-coat systems.

Wallhide Toners—Occasionally deep tints or solid colors are required in decorative schemes to produce modernistic, unusual or artistic effects. Wallhide Toners answer this need and may be used alone or intermixed with any of the above flat finishes. The directions for use are the same as regular Wallhide Interior Flat Finishes.

28 FUMEPROOF WHITE FINISHING SYSTEM FOR USE IN BAKERIES, BREWERIES, DAIRIES, ETC., Where Gases or Fumes Cause Discoloration to Painted Surfaces

1st. Apply one coat of 52-20 Snotex Primer reduced with one quart of Leptyne to the gallon. Allow to dry overnight.

2nd. Apply one coat of 52-21 Undercoater as received in the package. Allow overnight drying.

3rd. Apply one coat of 52-22 Finishing Flat White, 52-23 Finishing Eggshell White or 52-24 Finishing Gloss White as received in the package.

29 ENAMEL for INTERIOR WOOD TRIM

Open grain woods should be filled with Pittsburgh Natural Paste Wood Filler.

Close grain woods should be sanded with fine sandpaper and all knots and sappy places given a coat of shellac.

Three Coat Work

1st. Banzai Quick Drying Double Cover Undercoater reduced with a small amount of turpentine if necessary.

2nd. Banzai Quick Drying Double Cover Undercoater from package.

3rd. Apply Banzai Quick Drying Gloss or Eggshell Enamel as received in the package.

Note: A mixture of equal parts of Quick Drying Double Cover Undercoater and Enamel in place of second coat as above, adds to the gloss of the finishing coat. Banzai Undercoater and Enamels may be tinted with Pittsburgh Fluid Oil Colors if desired.

30 COLORED ENAMELS for INTERIOR WOOD TRIM

Open grain woods should be filled with Pittsburgh Natural Paste Wood Filler.

Close grain woods should be sanded with fine sandpaper and all knots and sappy places given a coat of shellac.

Enamel Coats—Apply two coats of Waterspar Quick Drying Enamel allowing four hours drying between coats.

Note: Waterspar Quick Drying Enamel is furnished in a variety of colors especially suitable for interior wood trim with Wallhide color combinations for ceilings and walls.

31 WALLBOARD and ACOUSTICAL BOARD, FLAT or SEMI-GLOSS FINISH

Plasco Primer Sealer was developed to give satisfactory results as a primer and sealer on various types of Wallboard and Acoustical Board. It primes and seals spongy, porous surfaces without raising the grain of the fibre.

Two Coat Work

1st. Reduce Plasco Primer Sealer with one quart of Leptyne or Turpentine and add one quart of Wallhide Interior Flat or Wallhide Interior Semi-Gloss of color selected for finish coat.

2nd. Wallhide Interior Flat or Wallhide Interior Semi-Gloss of color selected for finish coat.

Three Coat Work

1st. Plasco Primer Sealer, each gallon reduced with one quart of Leptyne or Turpentine.

2nd. Reduce Plasco Primer Sealer with one pint of Leptyne or Turpentine to each gallon and mix with an equal part of Wallhide Interior Flat or Wallhide Interior Semi-Gloss of color selected for finish coat.

3rd. Wallhide Interior Flat or Wallhide Interior Semi-Gloss of color selected for finish coat, used from the package.

32 PLASTIC PAINT for PLASTER, CEMENT, BRICK and WOOD

1st. Wallhide Interior First Coater, each gallon reduced with Leptyne or Turpentine.

2nd. Plastic Velumina applied with a well-worn flat wall paint brush or plasterer's trowel.

Note: On Keene's Cement Plaster apply an additional coat of Wallhide First Coater the same as directed in first coat.

33 TIFFANY, GLAZED or MULTITONE EFFECTS

1st. Reduce one gallon of Wallhide Interior First Coater with one quart of Leptyne or Turpentine and apply untinted. Allow overnight drying.

2nd. Apply 26-29 Wallhide Glazing Undercoat tinted to desired shade with Pittsburgh Fluid Oil Colors. No reduction necessary. Allow to dry overnight.

3rd. Use a mixture of Wallhide Finishing Coat of selected color (different from but harmonizing with the color used in the second coat) and 26-28 Wallhide Blending and Glazing Liquid. This mixture must be left to the judgment of the person doing the work and may be as much as equal parts, depending on color or effect desired. The less color coat added to Blending and Glazing Liquid the more delicate or transparent the final result. If deeper effects are required more color coat should be added.

Immediately following final coat surface should be rolled with a carelessly crumpled chamois, light weight paper or tool selected for the purpose. This operation should not be performed too uniformly but should be varied crossways from corner to corner and from top to bottom, to avoid formation of repeated patterns and produce most pleasing effects.

Note: Other effects may be secured by substituting mixtures of Pittsburgh Fluid Oil Colors and Blending and Glazing Liquid (ordinarily from ¼ to ½ pint of color to the gallon of liquid) for final coat.

34 COLD WATER PAINT—PLASTER and WALLBOARD

1st. Kalkomo Wall Size as directed.

2nd. Kalkomo Wall Finish as directed.

Note: For acoustical surfaces or surfaces designed for sound deadening, Kalkomo is an ideal product.

35 ENAMEL for INTERIOR PLASTER, CEMENT and BRICK WALLS

1st. Wallhide Interior First Coater, each gallon reduced with one quart of Leptyne or Turpentine.

2nd. Banzai Quick Drying Double Cover Undercoater from package.

3rd. Banzai Quick Drying Gloss White or Eggshell Enamel.

Note: Banzai Enamel or Double Cover Undercoater may be tinted with Pittsburgh Fluid Oil Colors, if desired.

36 INTERIOR INDUSTRIAL WALL PAINT for PLASTER, CEMENT, and WOOD

1st. Alba-Lux Flat, each gallon reduced with one quart of Boiled Linseed Oil. Allow to dry twenty-four hours.

2nd. Apply Alba-Lux Gloss White or Eggshell from package.

37 INTERIOR FLOORS, WOOD, STONE, CONCRETE, BRICK

Same as Specification No. 16.

38 ALUMINUM PAINT for INTERIOR and EXTERIOR WOOD SURFACES

1st. Metaleaf Aluminum Paint used according to directions.

2nd. Same.

Note: See note on Metaleaf Aluminum Paint at end of Specification No. 4.

INTERIOR VARNISHING OF STANDING SURFACES

39 INTERIOR NATURAL VARNISH FINISH, WOOD TRIM, OPEN GRAIN

1st. Pittsburgh Natural Paste Wood Filler reduced to brushing consistency with Leptyne or Benzine and rubbed across grain well into pores of wood. Dry overnight. Sand smooth with fine sandpaper.

2nd. Pitcairn Finishing Spar reduced at rate of one quart of Leptyne or Turpentine per gallon. Allow to dry twenty-four hours.

3rd. and 4th. Pitcairn Finishing Spar. Allow to dry twenty-four hours between coats.

5th. (Optional)—Pitcairn Finishing Spar. Sand lightly between coats.

Note: If dull finish is required, last coat should be rubbed with pumice stone and rubbing oil. Dull finish may also be secured by using Pitcairn Dull Finish or Satin Finish in place of last coat as specified above.

40 INTERIOR NATURAL VARNISH FINISH, WOOD TRIM, CLOSE GRAIN

1st. Pitcairn Finishing Spar reduced at rate of one quart of Leptyne or Turpentine per gallon. Dry twenty-four hours.

2nd. and 3rd. Pitcairn Finishing Spar. Allow to dry twenty-four hours between coats.

4th. (Optional)—Pitcairn Finishing Spar.

Note: If dull finish is required, follow recommendations in note at end of Specification No. 39.

41 INTERIOR NATURAL WAX FINISH, WOOD TRIM, OPEN GRAIN

1st. Pittsburgh Natural Paste Wood Filler reduced to brushing consistency with Leptyne or Benzine and rubbed across grain well into pores of wood. Allow to dry overnight. Sand smooth with fine sandpaper.

2nd. Pitcairn Finishing Spar reduced at rate of one quart of Leptyne or Turpentine per gallon. Dry twenty-four hours.

3rd. Waterspar (Paste) Polishing Wax or Waterspar Liquid Wax.

4th. (Optional)—Same as third coat.

Note: Secure final luster by polishing with dry woolen cloth.

42 INTERIOR NATURAL WAX FINISH, WOOD TRIM, CLOSE GRAIN

1st. Pitcairn Finishing Spar reduced at rate of one quart of Leptyne or Turpentine per gallon. Dry twenty-four hours.

2nd. Waterspar (Paste) Polishing Wax or Waterspar Liquid Wax.

3rd. (Optional)—Same as second coat.

Note: Secure final luster by polishing with a dry woolen cloth.

43 INTERIOR STAINED and VARNISHED SURFACES, WOOD TRIM, OPEN GRAIN

1st. Pitcairn Wood Stain, shade as selected. Apply with brush or lintless rag. Remove surplus by wiping with lintless rag with grain of wood before it sets. Dry four hours.

2nd. Thin wash coat of Pitcairn Spirit Lacquer or Pure Shellac.
3rd. Pittsburgh Paste Wood Filler of shade selected reduced to brushing consistency with Leptyne or Benzine. Allow to set, wipe clean across grain of wood. Dry overnight.
4th. and 5th. Pitcairn Finishing Spar. Allow twenty-four hours between coats.
6th. (Optional)—Pitcairn Finishing Spar.
Note: If dull finish is required, follow recommendations in note at end of Specification No. 39.

44 INTERIOR STAINED and VARNISHED SURFACES, WOOD TRIM, CLOSE GRAIN

1st. Pitcairn Wood Stain, shade as selected. Apply with brush or lintless rag. Remove surplus by wiping with lintless rag with grain of wood before it sets. Dry four hours.
2nd. Thin wash coat of Pitcairn Spirit Lacquer or pure Shellac.
3rd. and 4th. Pitcairn Finishing Spar. Allow to dry twenty-four hours between coats.
5th. (Optional)—Pitcairn Finishing Spar.
Note: If dull finish is required, follow recommendations in note at end of Specification No. 39.

45 INTERIOR STAIN and WAX, WOOD TRIM, OPEN GRAIN

1st. Pitcairn Wood Stain, shade as selected. Apply with brush or lintless rag. Remove surplus by wiping with lintless rag with grain of wood before it sets. Dry four hours.
2nd. Thin wash coat of Pitcairn Spirit Lacquer or Pure Shellac.
3rd. Pittsburgh Paste Wood Filler of shade selected, reduced to brushing consistency with Leptyne or Benzine. Allow to set, remove excess by wiping across grain of wood. Dry overnight.
4th. Waterspar (Paste) Polishing Wax or Waterspar Liquid Wax.
5th. (Optional)—Same as fourth coat.
Note: Secure final luster by polishing with dry woolen cloth.

46 INTERIOR STAIN and WAX, WOOD TRIM, CLOSE GRAIN

1st. Pitcairn Wood Stain, shade as selected. Apply with brush or lintless rag. Remove surplus by wiping with lintless rag with grain of wood before it sets. Dry four hours.
2nd. Thin wash coat of Pitcairn Spirit Lacquer or Pure Shellac.
3rd. Waterspar (Paste) Polishing Wax or Waterspar Liquid Wax.
4th. (Optional)—Same as third coat.
Note: Secure final luster by polishing with dry woolen cloth.

INTERIOR VARNISHING OF WOOD FLOORS

47 INTERIOR FLOORS, NATURAL VARNISH FINISH, HARDWOOD, OPEN GRAIN

1st. Pittsburgh Natural Paste Wood Filler reduced to brushing consistency with Leptyne or Benzine. Allow to set, remove excess by wiping across grain of wood. Dry overnight. Sand smooth.
2nd. and 3rd. Pitcairn Aged Floor Spar or 83-400 Waterspar Floor Varnish. Allow to dry overnight between coats.
4th. (Optional)—Same as second and third coats.
Note: If dull finish is required, follow recommendations in note at end of Specification No. 39.

48 INTERIOR FLOORS, NATURAL VARNISH FINISH, HARD and SOFTWOOD, CLOSE GRAIN

1st. Pitcairn Aged Floor Spar or 83-400 Waterspar Floor Varnish reduced one quart of Leptyne or Turpentine to each gallon. Allow to dry overnight. Sand lightly.
2nd. and 3rd. Pitcairn Aged Floor Spar or 83-400 Waterspar Floor Varnish. Allow to dry overnight between coats.
4th. (Optional)—Same as third coat.
Note: If dull finish is required, follow recommendations in note at end of Specification No. 39.

49 INTERIOR FLOORS, NATURAL WAX FINISH, HARDWOOD, OPEN GRAIN

1st. Pittsburgh Natural Paste Wood Filler, reduced to brushing consistency with Leptyne or Benzine. Allow to set, remove excess by wiping across grain of wood. Dry overnight. Sand smooth.
2nd. Pitcairn Aged Floor Spar or 83-400 Waterspar Floor Varnish reduced a quart of Leptyne or Turpentine to each gallon. Allow to dry overnight.
3rd. Waterspar (Paste) Polishing Wax or Waterspar Liquid Wax.
4th. (Optional)—Same as third coat.
Note: Secure final luster by polishing with weighted brush or polishing machine.

50 INTERIOR FLOORS, NATURAL WAX FINISH, HARD or SOFTWOOD, CLOSE GRAIN

1st. Pitcairn Aged Floor Spar or 83-400 Waterspar Floor Varnish reduced a quart of Leptyne or Turpentine to each gallon. Allow to dry overnight.
2nd. and 3rd. Waterspar (Paste) Polishing Wax or Waterspar Liquid Wax.
Note: Secure final luster by polishing with weighted brush or polishing machine.

51 INTERIOR FLOORS, STAINED and VARNISHED, HARD and SOFTWOOD, OPEN GRAIN

1st. Pitcairn Wood Stain shade as selected. Apply with brush or lintless rag. Remove surplus by wiping with lintless rag with grain of wood before it sets. Dry four hours.
2nd. Thin wash coat of Pitcairn Spirit Lacquer or Pure Shellac.
3rd. Pittsburgh Paste Wood Filler of shade selected, reduced to brushing consistency with Leptyne or Benzine. Allow to set, wipe clean across the grain of the wood. Allow to dry overnight.
4th. and 5th. Pitcairn Aged Floor Spar or 83-400 Waterspar Floor Varnish. Allow to dry overnight between coats.
Note: If dull finish is required, follow recommendations in note at end of Specification No. 39.

52 INTERIOR FLOORS, STAINED and VARNISHED, HARD and SOFTWOOD, CLOSE GRAIN

1st. Same as Specification No. 51.
2nd. A thin wash coat of Pitcairn Spirit Lacquer or Pure Shellac.
3rd. and 4th. Pitcairn Aged Floor Spar or 83-400 Waterspar Floor Varnish. Allow to dry overnight between coats.
Note: If dull finish is required, follow recommendations in note at end of Specification No. 39.

53 INTERIOR FLOORS, STAIN and WAX, HARDWOOD, OPEN GRAIN

1st. Same as Specification No. 51.
2nd. A thin wash coat of Pitcairn Spirit Lacquer or Shellac.
3rd. Pittsburgh Paste Wood Filler of shade selected, reduced to brushing consistency with Leptyne or Benzine. Allow to set. Remove excess by wiping across grain of wood. Dry overnight.
4th. Waterspar (Paste) Polishing Wax or Waterspar Liquid Wax.
5th. (Optional)—Same as fourth coat.
Note: Secure final luster by polishing with weighted brush or polishing machine.

54 INTERIOR FLOORS, STAIN and WAX, HARD and SOFTWOOD, CLOSE GRAIN

1st. Same as Specification No. 51.
2nd. A thin wash coat of Pitcairn Spirit Lacquer or Pure Shellac.
3rd. and 4th. Waterspar (Paste) Polishing Wax or Waterspar Liquid Wax.
Note: Secure final luster by polishing with weighted brush or polishing machine.

55 INTERIOR FLOORS, such as GYMNASIUMS, BASKETBALL COURTS, PUBLIC BUILDINGS

New Work

Where a finish with considerable depth is desired, apply one coat of Pitcairn Gym Spar as received in the package by mop or brush. After eight hours sand first coat enough to cut gloss and follow with a second coat.

In many instances, for this type of floor finishing a thick film is not desired but only a sufficient coating to seal the wood fibres against an accumulation of dirt and to penetrate to the proper degree to cause a hardening action. In such instances apply a coat of Gym Spar reduced at rate of one quart of Leptyne or Turpentine to the gallon by mopping or brushing. After six or eight hours follow with a second coat same as first coat.

Old Work

Use same system as for New Work, except that in most cases only one coat will be necessary.

Note: In instances where the sealing type of finish only is desired, floors may be maintained in excellent condition by recoating with one coat once a year with Gym Spar reduced as directed above.

Distributing and Manufacturing Facilities of the

Paint • PITTSBURGH PLATE GLASS COMPANY • Glass

THE PITTSBURGH PLATE GLASS COMPANY, since its inception, has consistently maintained the highest standard of quality in the products it offers to the building trade. This high quality is no mere advertising claim. It is, and has always been, an established fact in the industry. To make it so and keep it so, millions of dollars have been expended.

To assist members of the architectural profession in any question which may arise concerning the use of Pittsburgh Products, a corps of highly trained specialists is maintained, who work in co-operation with the regular warehouse field forces. Problems concerning Paint Products may be referred to a Board of Technical Engineers at the Milwaukee and Newark factories.

A Continuous Research Program on All Products

The exhaustive research carried on in connection with all products, the field tests, the development and perfection of the most modern and efficient manufacturing methods and machinery, the integration of facilities which in many cases permits the PITTSBURGH PLATE GLASS COMPANY to exercise complete control of its products from raw material to the finished article . . . these are a few of the reasons why Pittsburgh Products have earned by actual performance an enviable reputation for their quality and dependability.

Outstanding Distribution Facilities

In the service rendered to the trade, the PITTSBURGH PLATE GLASS COMPANY is also outstanding. Twenty-six plants, operating in strategic locations, manufacture Pittsburgh Products. The products thus made are distributed through a system of seventy-two warehouses in principal trading centers, direct from the factories, and, through progressive jobbers. With an organization like this, it is obvious that the Company is particularly well equipped to provide prompt, efficient service throughout the country.

AKRON, Ohio
674 Carroll Street
ALBANY, N.Y.
47 North Ferry Street
ALLENTOWN, Pa.
827 North 12th Street
AMARILLO, Texas
720 East 13th Street
ATLANTA, Ga.
172 Marietta Street, N. W.
BALTIMORE, Md.
8 South Paca Street
BIRMINGHAM, Ala.
912 North 20th Street
BOSTON, Mass.
300 Babcock Street
BRONX, N. Y.
441 Exterior Street
BROOKLYN, N. Y.
Jay, Water & Plymouth Sts.
BUFFALO, N. Y.
101 Seneca Street
BUTTE, Mont.
840 Utah Avenue
CHARLOTTE, N. C.
216 East Sixth Street
CHICAGO, Ill.
451 St. Clair Street
CINCINNATI, Ohio
B'way, Court & Eggleston Aves.
CLEVELAND, Ohio
3849 Hamilton Avenue
COLUMBUS, Ohio
324 East Second Avenue
DALLAS, Texas
Santa Fe Terminal Bldg.
DAVENPORT, Iowa
414 Scott Street
DENVER, Colo.
2519 Walnut Street
DES MOINES, Iowa
108 East 4th Street
DETROIT, Mich.
6045 Hamilton Avenue
EL PASO, Texas
1106 East Overland Street
FORT WORTH, Texas
1825 Main Street
GRAND RAPIDS, Mich.
21 Ionia Avenue, S. W.
HARRISBURG, Pa.
611 South 17th Street
HARTFORD, Conn.
40 Chapel Street
HIGH POINT, N. C.
1 South Hamilton Street
HOUSTON, Texas
101 Crawford Street
INDIANAPOLIS, Ind.
59 South State Avenue
JACKSONVILLE, Fla.
601 North Myrtle Avenue
KANSAS CITY, Mo.
125 West Fifth Street
KNOXVILLE, Tenn.
207 Humes Street
LITTLE ROCK, Ark.
112 North Scott Street
LOS ANGELES, Cal.*
P. O. Box S. Florence Branch
LOUISVILLE, Ky.
1601 West Main Street
MEMPHIS, Tenn.
435 Madison Avenue
MIAMI, Fla.
1200 Biscayne Blvd.
MILWAUKEE, Wis.
820 North Market Street
MINEOLA, N. Y.
49 Windsor Avenue
MINNEAPOLIS, Minn.
616 South Third Street
MT. VERNON, N. Y.
556 South Fulton Avenue
NASHVILLE, Tenn.
1102 Grundy Street
NEWARK, N. J.
290 Elizabeth Avenue
NEW HAVEN, Conn.
26 Mill Street
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FOUNDED 1867

PEASLEE-GAULBERT PAINT & VARNISH CO.

Incorporated

Interior and Exterior Paints, Enamels, Stains, Varnishes, Lacquers Special Finishes for Industrial and Maintenance Purposes

EXECUTIVE OFFICES

LOUISVILLE, KENTUCKY

BRANCHES

ATLANTA, GA. HOUSTON, TEX. DALLAS, TEX.

Pee Gee STABILIZED TWO-COAT SYSTEM

For Exterior Painting



Pee Gee Mastic Undercoat is designed to go next to the wood or old paint film. It seals the surface perfectly and because of *"controlled penetration"* provides a non-brittle foundation for the Finishing Coat.

Pee Gee Mastic Topcoat bonds properly with the Undercoat but does not lose its oil into the surface, which means the pigment-vehicle in this Finishing Coat remains constant, affording maximum resistance to exposure and weather.

Specifications—New Work

	Thinning Per Gallon	
Undercoat:	*Cool Weather*	*Warm Weather*
Soft wood.	¾ pint turpentine.	½ pint turpentine.
Hard wood.	1 pint turpentine.	¾ pint turpentine.
Finish Coat:	¾ pint turpentine.	½ pint raw linseed oil.

Specifications—Old Work

	Thinning Per Gallon	
Undercoat:	*Cool Weather*	*Warm Weather*
Surfaces in poor condition.	¾ pint turpentine and ½ pint raw linseed oil.	½ pint turpentine and ½ pint raw linseed oil.
Surfaces in good condition.	1 pint turpentine and ½ pint raw linseed oil.	¾ pint turpentine and ½ pint raw linseed oil.
Finish Coat:	¾ pint turpentine.	½ pint raw linseed oil.

BAY STATE BRICK & CEMENT COATING



Bay State Brick & Cement Coating has been specified for many years by architects in all parts of the country. It is an outstanding finish for all masonry, brick, stucco and concrete surfaces. Coverage varies from 130 to 200 sq. ft. per gallon, one coat, depending on the porosity of the surface. Follow application directions on the label.

Bay State Brick & Cement Coating is especially recommended for swimming pools.

PEE GEE PORCH & FLOOR ENAMEL



Pee Gee Porch & Floor Enamel is a fast-drying, extremely durable, full-gloss finish for interior or exterior wood, concrete or linoleum floors. This enamel is alkali-resistant and withstands wide climatic variations. Coverage varies from 375 to 700 sq. ft. per gallon, one coat, depending on surface porosity.

On new, exterior porches (or old porches in very bad condition) an initial coat of Mastic Undercoat (see above) will assure extra durability.

PEE GEE FLATKOATT



Pee Gee Flatkoatt is an oil-base, flat finish for interior walls and ceilings. Flatkoatt has unusual hiding quality and since it will spread approximately 600 sq. ft. per gallon, one coat, on smooth surfaces is an economical finish to specify. Works easily, does not show brush marks, dries with a very slight sheen and can be washed repeatedly. Available in white and a wide range of attractive colors.

PEE GEE VARNISHES



Pee Gee Varnishes embrace all the usual types required in Architectural finishing. Of primary importance are Pee Gee Quick Drying Floor Varnish for interior floors, Pee Gee Dulshine for rubbed effect finish, Pee Gee Q. D. V. Varnish for interior trim, and Pee Gee Wonder Spar for all exterior surfaces. These varnishes are all manufactured under the most exacting scientific control and each is outstanding in its own field.

Since 1867 Pee Gee Paints have been manufactured in Louisville, Ky. They have been used successfully since that time throughout all the southern states. It can truly be said that Pee Gee Paints, made in the South, are right for southern conditions.

PRATT & LAMBERT-INC.

Paint & Varnish Makers

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73-97 Tonawanda Street
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320-338 West 26th Street
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Telephone: VICtory 1800

IN CANADA: 254 Courtwright Street, FORT ERIE NORTH, ONTARIO

Experience

In the following condensed specifications this company embodies the fruits of almost a century of experience in studying wood finishing conditions and in working out materials and methods which best fulfill requirements. The attainment of success is evident from the use of Pratt & Lambert Paint and Varnish in and on some of the world's best known buildings.

Co-operative Service

Sample panels showing standard effects obtainable with Pratt & Lambert stains, fillers, varnishes, enamels and paints will be sent on request. If some distinctive finish is required, specify the wood to be used and the general color desired, and the architect's ideas will be carried out on specially made sample panels. Address your request to the Architectural Service Department at the nearest office. The opportunity to be of service will be welcomed.

Specification Manual

Most wood finishing problems are solved in the Pratt & Lambert Specification Manual (A. I. A. File No. 25c), which gives complete specifications for every kind of finish.

Write for a copy.

CONDENSED SPECIFICATIONS

Exterior Work—House Painting

Siding—1 coat P&L House Paint Exterior Primer; 2 coats P&L House Paint.

Trim and Shutters—1 coat P&L House Paint Exterior Primer; 2 coats Verdura Trim & Shutter Finish.

Shingles—2 coats P&L Creosote Shingle Stain.

Shingles (White)—2 coats P&L Shingle White.

Half Timber Construction, Natural—1 coat Okene Floor Preservative.

Half Timber Construction, Stained—1 coat Okene Floor Preservative, with P&L Oil Stain added.

Metal Work and Gutters—1 coat P&L Red Lead Metal Primer; 2 coats P&L House Paint.

Cement, Concrete, Stucco and Brick—1 coat P&L House Paint Exterior Primer; 1 coat P&L Cement & Stucco Paint.

Floors—Wood and Concrete—2 coats P&L Floor and Deck Paint.

Exterior Work—Varnish Finish

Hard Woods, Open Grain

(Oak, Mahogany, Walnut, Ash, Chestnut, etc.)

Filled, Varnish Finish — 1 coat P&L Paste Filler; 3 coats "61" Quick Drying Spar Varnish.

Filled, Stained, Varnish Finish—1 coat P&L Paste Filler; 1 coat P&L Oil Stain; 3 coats "61" Quick Drying Spar Varnish.

Hard and Soft Woods, Close Grain

(Birch, Maple, Beech, Cherry, Pine, Fir, Spruce, Gum, Poplar, etc.)

Natural, Varnish Finish — 3 coats "61" Quick Drying Spar Varnish.

Stained, Varnish Finish—1 coat P&L Oil Stain; 3 coats "61" Quick Drying Spar Varnish.

Exterior Work—Enamel Finish

Wood, Metal, Cement, Concrete, Stucco and Brick

Enamel Finish—1 coat P&L House Paint Exterior Primer; 2 coats Vitralite Enamel Gloss.

Interior Work—Enamel Finish

Wood and Metal

Enamel Finish—Gloss or Rubbed—1 coat P&L Interior Trim Primer; 1 coat Vitralite Enamel Undercoating; 2 coats Vitralite Enamel Gloss (specify if to be rubbed).

Enamel Finish—Eggshell—1 coat P&L Interior Trim Primer; 1 coat Vitralite Enamel Undercoating; 1 coat Vitralite Enamel Gloss; 1 coat Vitralite Enamel Eggshell.

Plaster, Cement, Stucco and Brick

Enamel Finish—Gloss—1 coat Lyt-all Double Duty Primer; 1 coat Vitralite Enamel Undercoating; 2 coats Vitralite Enamel Gloss.

Enamel Finish—Eggshell—1 coat Lyt-all Double Duty Primer; 1 coat Vitralite Enamel Undercoating; 1 coat Vitralite Enamel Gloss; 1 coat Vitralite Enamel Eggshell.

Plaster Walls—Wall Coating

Stippled Finish—Gloss—1 coat Lyt-all Double Duty Primer; 1 coat Lyt-all Stippling Gloss, stippled.

Stippled, Glazed, Starched Finish—Eggshell—1 coat Lyt-all Double Duty Primer; 1 coat Lyt-all Stippling Eggshell, stippled; 1 coat Lyt-all Glazing Liquid (specify tint and treatment); 1 coat starch, stippled.

Stippled, Starched Finish—Eggshell—1 coat Lyt-all Double Duty Primer; 1 coat Lyt-all Stippling Eggshell, stippled; 1 coat starch, stippled.

Stippled Finish—Eggshell — 1 coat Lyt-all Double Duty Primer; 1 coat Lyt-all Stippling Eggshell, stippled.

Stippled, Starched Finish—Flat—1 coat Lyt-all Double Duty Primer; 1 coat Lyt-all Stippling Flat, stippled; 1 coat starch, stippled.

Stippled Finish—Flat—1 coat Lyt-all Double Duty Primer; 1 coat Lyt-all Stippling Flat, stippled.

Flat — 1 coat Lyt-all Double Duty Primer; 1 coat Lyt-all Flowing Flat.

Canvased Walls—Wall Coating

Stippled Finish — Gloss — 2 coats Lyt-all Double Duty Primer; 1 coat Lyt-all Stippling Gloss, stippled.

Stippled, Glazed, Starched Finish—Eggshell—2 coats Lyt-all Double Duty Primer; 1 coat Lyt-all Stippling Eggshell, stippled; 1 coat Lyt-all Glazing Liquid (specify tint and treatment); 1 coat starch, stippled.

Stippled, Starched Finish—Eggshell—2 coats Lyt-all Double Duty Primer; 1 coat Lyt-all Stippling Eggshell, stippled; 1 coat starch, stippled.

Stippled Finish—Eggshell — 2 coats Lyt-all Double Duty Primer; 1 coat Lyt-all Stippling Eggshell, stippled.

Stippled, Starched Finish — Flat — 2 coats Lyt-all Double Duty Primer; 1 coat Lyt-all Stippling Flat, stippled; 1 coat starch, stippled.

Stippled Finish—Flat—2 coats Lyt-all Double Duty Primer; 1 coat Lyt-all Stippling Flat, stippled.

Flat—2 coats Lyt-all Double Duty Primer; 1 coat Lyt-all Flowing Flat.

Industrial Walls—Wall Coating

Wood, Plaster, Brick and Tile

Gloss—1 coat Lyt-all Undercoating; 1 coat Lyt-all Gloss.

Eggshell—1 coat Lyt-all Undercoating; 1 coat Lyt-all Eggshell.

Flat—One coat Lyt-all Undercoating; 1 coat Lyt-all Flat.

Cement and Concrete

Gloss—1 coat Lyt-all Cement Coating; 1 coat Lyt-all Gloss.

Eggshell—1 coat Lyt-all Cement Coating; 1 coat Lyt-all Eggshell.

Flat—1 coat Lyt-all Cement Coating; 1 coat Lyt-all Flat.

Industrial Walls—Fume Proof Wall Coating

Wood, Plaster, Brick and Tile

Gloss—1 coat Lyt-all Undercoating; 1 coat Lyt-all Fume Proof Gloss.

Flat—1 coat Lyt-all Undercoating; 1 coat Lyt-all Fume Proof Flat.

Cement and Concrete

Gloss—1 coat Lyt-all Cement Coating; 1 coat Lyt-all Fume Proof Gloss.

Flat—1 coat Lyt-all Cement Coating; 1 coat Lyt-all Fume Proof Flat.

Interior Trim—Varnish Finish

Hard Woods, Open Grain

(Oak, Mahogany, Walnut, Ash, Chestnut, etc.)

Filled, Varnish Finish—Gloss or Rubbed—1 coat P&L Paste Filler; 1 coat shellac; 2 coats "38" Preservative Varnish (specify if to be rubbed).

Filled, Varnish Finish—Satin Finish—1 coat P&L Paste Filler; 1 coat shellac; 1 coat "61" Quick Drying Floor Varnish Clear Gloss; 1 coat "61" Quick Drying Floor Varnish Satin Finish.

Filled, Varnish Finish—Dull Finish—1 coat P&L Paste Filler; 1 coat shellac; 1 coat "61" Quick Drying Floor Varnish Clear Gloss; 1 coat "61" Quick Drying Floor Varnish Dull Finish.

Natural, Varnish Finish—Flat—1 coat shellac; 1 coat Tonetic Flat Varnish.

Stained, Filled, Varnish Finish—Gloss or Rubbed—1 coat P&L Acid Stain; 1 coat P&L Paste Filler; 1 coat shellac; 2 coats "38" Preservative Varnish (specify if to be rubbed).

Stained, Filled, Varnish Finish—Satin Finish—1 coat P&L Acid Stain; 1 coat P&L Paste Filler; 1 coat shellac; 1 coat "61" Quick Drying Floor Varnish Clear Gloss; 1 coat "61" Quick Drying Floor Varnish Satin Finish.

Stained, Filled, Varnish Finish—Dull Finish—1 coat P&L Acid Stain; 1 coat P&L Paste Filler; 1 coat shellac; 1 coat "61" Quick Drying Floor Varnish Clear Gloss; 1 coat "61" Quick Drying Floor Varnish Dull Finish.

Stained, Varnish Finish—Flat—1 coat P&L Acid Stain; 1 coat shellac; 1 coat Tonetic Flat Varnish.

Hard Woods, Close Grain

(Birch, Maple, Beech, Cherry, etc.)

Natural, Varnish Finish—Gloss or Rubbed—1 coat shellac; 2 coats "38" Preservative Varnish (specify if to be rubbed).

Natural, Varnish Finish—Satin Finish—1 coat shellac; 1 coat "61" Quick Drying Floor Varnish Clear Gloss; 1 coat "61" Quick Drying Floor Varnish Satin Finish.

Natural, Varnish Finish—Dull Finish—1 coat shellac; 1 coat "61" Quick Drying Floor Varnish Clear Gloss; 1 coat "61" Quick Drying Floor Varnish Satin Finish.

Stained, Varnish Finish—Gloss or Rubbed—1 coat P&L Acid Stain; 1 coat shellac; 2 coats "38" Preservative Varnish (specify if to be rubbed).

Stained, Varnish Finish—Satin Finish—1 coat P&L Acid Stain; 1 coat shellac; 1 coat "61" Quick Drying Floor Varnish Clear Gloss; 1 coat "61" Quick Drying Floor Varnish Satin Finish.

Stained, Varnish Finish—Dull Finish—1 coat P&L Acid Stain; 1 coat shellac; 1 coat "61" Quick Drying Floor Varnish Clear Gloss; 1 coat "61" Quick Drying Floor Varnish Dull Finish.

Soft Woods, Close Grain

(Pine, Fir, Spruce, Redwood, Gum, Poplar, Cypress, etc.)

Natural, Varnish Finish—Gloss or Rubbed—3 coats "38" Preservative Varnish (specify if to be rubbed).

Natural, Varnish Finish—Satin Finish—2 coats "61" Quick Drying Floor Varnish Clear Gloss; 1 coat "61" Quick Drying Floor Varnish Satin Finish.

Natural, Varnish Finish—Dull Finish—2 coats "61" Quick Drying Floor Varnish Clear Gloss; 1 coat "61" Quick Drying Floor Varnish Dull Finish.

Stained, Varnish Finish—Gloss or Rubbed—1 coat P&L Oil Stain; 3 coats "38" Preservative Varnish (specify if to be rubbed).

Stained, Varnish Finish—Satin Finish—1 coat P&L Oil Stain; 2 coats "61" Quick Drying Floor Varnish Clear Gloss; 1 coat "61" Quick Drying Floor Varnish Satin Finish.

Stained, Varnish Finish—Dull Finish—1 coat P&L Oil Stain; 2 coats "61" Quick Drying Floor Varnish Clear Gloss; 1 coat "61" Quick Drying Floor Varnish Dull Finish.

Interior Wood Floors—Varnish Finish

Hard Woods, Open Grain

(Oak, Mahogany, Walnut, Ash, Chestnut, etc.)

Filled, Varnish Finish—Gloss Finish—1 coat P&L Paste Filler; 3 coats "61" Quick Drying Floor Varnish Clear Gloss.

Filled, Varnish Finish—Satin Finish—1 coat P&L Paste Filler; 2 coats "61" Quick Drying Floor Varnish Clear Gloss; 1 coat "61" Quick Drying Floor Varnish Satin Finish.

Filled, Varnish Finish—Dull Finish—1 coat P&L Paste Filler; 2 coats "61" Quick Drying Floor Varnish Clear Gloss; 1 coat "61" Quick Drying Floor Varnish Dull Finish.

Filled, Stained, Varnish Finish—Gloss Finish—1 coat P&L Paste Filler; 1 coat P&L Oil Stain; 3 coats "61" Quick Drying Floor Varnish Clear Gloss.

Filled, Stained, Varnish Finish—Satin Finish—1 coat P&L Paste Filler; 1 coat P&L Oil Stain; 2 coats "61" Quick Drying Floor Varnish Clear Gloss; 1 coat "61" Quick Drying Floor Varnish Satin Finish.

Filled, Stained, Varnish Finish—Dull Finish—1 coat P&L Paste Filler; 1 coat P&L Oil Stain; 2 coats "61" Quick Drying Floor Varnish Clear Gloss; 1 coat "61" Quick Drying Floor Varnish Dull Finish.

Hard and Soft Woods, Close Grain

(Birch, Maple, Beech, Cherry, Pine, Fir, etc.)

Natural, Varnish Finish—Gloss Finish—3 coats "61" Quick Drying Floor Varnish Clear Gloss.

Natural, Varnish Finish—Satin Finish—2 coats "61" Quick Drying Floor Varnish Clear Gloss; 1 coat "61" Quick Drying Floor Varnish Satin Finish.

Natural, Varnish Finish—Dull Finish—2 coats "61" Quick Drying Floor Varnish Clear Gloss; 1 coat "61" Quick Drying Floor Varnish Dull Finish.

Stained, Varnish Finish—Gloss Finish—1 coat P&L Oil Stain; 3 coats "61" Quick Drying Floor Varnish Clear Gloss.

Stained, Varnish Finish—Satin Finish—1 coat P&L Oil Stain; 2 coats "61" Quick Drying Floor Varnish Clear Gloss; 1 coat "61" Quick Drying Floor Varnish Satin Finish.

Stained, Varnish Finish—Dull Finish—1 coat P&L Oil Stain; 2 coats "61" Quick Drying Floor Varnish Clear Gloss; 1 coat "61" Quick Drying Floor Varnish Dull Finish.

Interior Floors—Enamel Finish

Hard and Soft Woods, Close Grain; and Cement

Enamel Finish—2 coats "61" Floor Enamel.

Interior Floors—Preservative Finish

Hard and Soft Woods, Close Grain; Terrazzo, Magnesite and Cork

Natural, Preservative Finish—1 coat Okene Floor Preservative.

Hard and Soft Woods, Close Grain

(Birch, Maple, Beech, Cherry, Pine, Fir, etc.)

Stained, Preservative Finish—1 coat Okene Floor Preservative, with P&L Oil Stain added.

Hard Woods, Open Grain

(Oak, Mahogany, Walnut, Ash, Chestnut, etc.)

Filled, Preservative Finish—1 coat P&L Paste Filler; 1 coat Okene Floor Preservative.

REYNOLDS METALS COMPANY

INCORPORATED

Aluminum Powders and Aluminum Pastes

GENERAL OFFICES

Federal Reserve Bank Building, RICHMOND, VIRGINIA

BRANCH OFFICES

CHICAGO, ILL., Wrigley Bldg. NEW YORK, N. Y., 531 W. 25th St. SAN FRANCISCO, CALIF., 345 Ninth St.

For Reynolds Metal Reflective Insulation and Reynolds Metal Lath, see File Index

ALUMINUM PAINT—WHY AND WHERE

Aluminum paint can be used wherever an ordinary paint would be applied; it should be used wherever economy, durability, reflectivity, moisture-proofness and heat resistance are prime factors. No other paint meets as many requirements.

Aluminum pigment, mixed with the suitable vehicle for a specific purpose, may be brushed or sprayed on wood, metal or concrete surfaces. When applied to a surface the tiny metallic flakes of pure aluminum rise to the surface of the vehicle forming a film of leaf-like particles overlapping one another. This phenomenon, known as "leafing," produces a protective coating of metal and thereby gives aluminum paint its valuable characteristics.



Aluminum Paint, because of its moisture-proofness, is excellent for a priming coat on wood. Economy and durability make it ideal for home usage

Aluminum paint is economical because of its durability. It has been proved by tests that aluminum pigment in a vehicle protects the surface upon which it is applied from ultra violet rays and from moisture, the chief causes for paint failure. The moisture-proofness of aluminum paint makes it ideal as a priming coat on wood, sealing the pores and retarding rot; or as a protective coat on metal structures or parts subject to rust and corrosion. Aluminum pigment mixed in lead and zinc paint will act as a rust inhibitor.

If aluminum paint is properly and uniformly applied it will completely hide the undercolor in one coat. Thus it is economical, not only because of its long life and resistance to weathering, but also from the standpoint of labor required to apply it.

Aluminum paint, composed as it is of metal particles, reflects from 60% to 70% of the light falling on it. This reflectivity renders it useful for interior use where it is desirable to increase and improve visibility in poorly lighted or underground structures. It also is an excellent heat reflector, and this feature makes it ideal as an exterior surface coating for any structure within which it is important to prevent temperature or pressure changes.

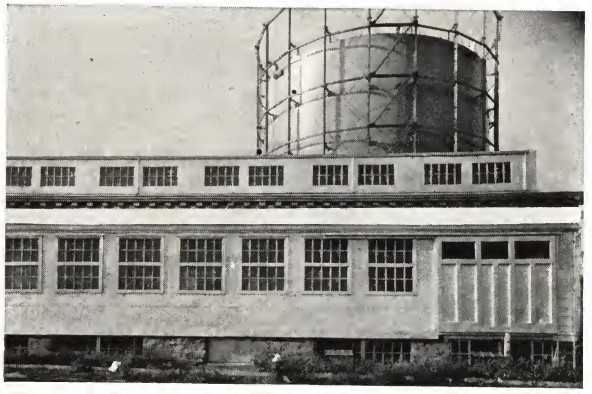
Aluminum paint is resistant to sulphur fumes and smoke and for this reason its use is widespread in chemical and industrial plants. It is easily and quickly washed down making its use in certain types of interior installations a sanitary measure. Its architectural and decorative value has long been recognized and utilized.

TYPICAL USES OF ALUMINUM PAINT

Aluminum paint has long been popular in the building field for purely decorative purposes but its value for hundreds of other applications has only recently been appreciated. However, the properties which make it a universally satisfactory surfacing product from a practical standpoint have been the basis for its use in a variety of other fields where it has proved its worth to the architect.

In the building field aluminum paint has, during the past few years, developed from an occasionally used product into one of the most widespread. The characteristics of color, coverage, durability, moisture-resistance, reflectivity and insulation value, have all contributed to this unusual acceptance by the building industry. For example:

The light-reflecting and moisture-resisting qualities of aluminum paint make it invaluable for use in interiors such as laundries, garages, bakeries, textile mills and other structures. Its decorative value has led to its wide use in innumerable locations where brilliance and attractive appearance are most important factors.



Unusual protection against rust and corrosion, combined with heat resistance and reflective qualities make Aluminum Paint ideal for industrial applications

As a priming coat on wood, applied directly after kiln drying or seasoning, aluminum paint has proved its value as a protection during shipment. Seasoned wood, if unprotected, will change its moisture content, whereas if primed with aluminum it reaches the building in proper condition and other painting can be done directly over the prime coat.

For general painting around residences aluminum paint has met every requirement. It provides a splendid prime coat for exteriors as well as a base coat under paint for walls, trim, etc. In basements, its use makes dark corners light. For stairways, piping tanks, fences, flagpoles, benches, garden

furniture, and in many other locations aluminum paint will be found to provide beauty, cleanliness and long-life protection.

Its unusual protection against rust and corrosion as well as its heat-resistant and reflective qualities make aluminum paint invaluable to both the oil and gas industries where it is applied to tanks to reduce loss from evaporation. Throughout the equipment for the production, storage, refining and transportation of oil, aluminum paint is used as an economy measure.

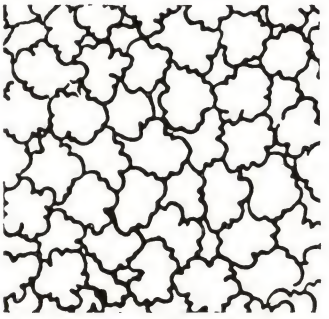
One of the newest uses of aluminum paint has been in the aviation field. Here its ease of visibility has been utilized in painting hangars and airport markers making them easily discernible for miles. As a coating for fabrics used in wings and fuselages of planes and coverings of airships aluminum paint has proved most efficient for protecting the materials and preventing temperature changes, a vital factor in the manufacture of lighter than air craft.

In marine construction, aluminum paint is used for ship exteriors above the water line. Its light reflectivity is made use of to lighten the interiors of ships, thus cutting down the need for artificial illumination and providing a sanitary, washable surface throughout.

REYNOLDS ALUMINUM POWDERS AND PASTES

Products and Sales Policies

Reynolds Metals Company, Incorporated, the largest manufacturer of metal foils in the world, makes only the Aluminum Powder and Paste which constitute the pigment base of aluminum paint. The liquids or vehicles are the specialized products of a number of paint manufacturers. We will gladly put you in touch with reliable paint manufacturers who will study your particular problems and with whom our Research Department is ready to co-operate in developing particular grades of aluminum flake or powder to meet individual specifications.



A Microscopic Drawing Showing the "Leafing" Action of Aluminum Paint. Note how the flakes of metal overlap, layer upon layer

Reynolds Powders and Pastes

Reynolds pigments are produced from pure, highly polished aluminum foil by stamping the aluminum into flat, thin flakes. The fact that we have several mills located in various parts of the country guarantees us control of raw material as well as the quality of the finished product, resulting in pigments which satisfy the most exacting requirements as regards color, coverage, leafing power, brilliance and durability.

The great number of reputable paint manufacturers who use Reynolds Aluminum Powder and Paste can furnish a wide range of liquids to meet varying conditions. Blue and green tints may be obtained, if desired, as well as a lead-zinc paint which is rust-inhibiting.

When ordering aluminum paint be sure to specify Reynolds Aluminum Pigments and describe where and how the paint is to be used and any special conditions it must meet. Satisfactory specifications to meet practically all conditions will be sent upon request.

REYNOLDS CO-OPERATION FOR CORRECT SPECIFICATIONS

As has been previously pointed out, the Reynolds Metals Company makes only the aluminum pigment. The vehicles are supplied by a number of reputable paint manufacturers. However, no one vehicle will meet all conditions and in order to provide the user with the most satisfactory product for his particular purpose the Reynolds Company have spent thousands of dollars and many years in intensive research of such vehicles. As a result we are glad to co-operate with the architect and engineer in helping him specify the correct aluminum paint to meet his problems and specific conditions. A complete file has been prepared of reliable information which the specification writer can use with the fullest confidence. The vehicles called for are not the product of any one manufacturer and a specification which calls for any of them is not restricted in any way. However, for satisfactory results Reynolds Metal Aluminum pigments should be insisted upon.

Aluminum Paint May Be Used on

Exterior Wood Surfaces—As a primer, or as a primer and finish coat on any outside wood finish.

Interior Wood Surfaces—As a primer, or as a primer and finish coat.

Surfaces Containing Soluble Stains—As a sealing coat for woodwork, furniture, etc., and as a treatment of surfaces to prevent bleeding of stains.

Creosoted Wood Surfaces—As a first and finish coat for guard rail posts, bridge timbers, ties, etc.

Exposed Steel Surfaces—As a second or finish coat on all outside metallic surfaces, over any dried, approved metal primer coat. Any rust spots must first be cut out.

Interior Steel Surfaces—As a finish coat for steel sheets, frames, fence posts, bed springs, machinery housings, castings, forgings, electrical equipment, toys, etc.

Exposed Galvanized Metal Surfaces—As a prime and finish coat for exterior galvanized steels.

Interior Galvanized Metal Surfaces—As a prime and finish coat for interior galvanized steel.

Tin or Metal Lithographing—As a base or finish coat on decorated metal.

Weather-exposed Heated Surfaces—Where temperatures do not exceed 600° F. for lined smokestacks, lined breechings, etc.

Interior Heated Surfaces—As a finish coat where temperatures do not exceed 800° F.

Weather-exposed Aluminum Surfaces—As a primer and finish coat for any aluminum surface that requires protection against severe corrosive conditions.

Weather-exposed Brick Surfaces—As a primer and finish coat.

Interior Brick Surfaces—As a primer and finish coat.

Weather-exposed Concrete Surfaces—To be used in (a) as a finish coat, and in (b) as a prime and finish coat for all exposed concrete work.

Interior Concrete Surfaces—To be used in (a) Bituminous Base same as on exterior surfaces and in (b) Varnish Base same as on exterior surfaces, except on interior varnish to be used.

Weather-exposed Stucco Surfaces—As a prime and finish coat to seal surfaces against moisture and to stop absorption for top coats on all stucco surfaces.

Plaster Walls—*Rough Surfaces*—As a prime and finish coat for plaster walls.

Smooth Surfaces—As a prime coat on new plasters, or as an undercoat on old painted walls, or as a finish coat, or (b) as a finish coat on office, theatre walls. This can be stippled, if so desired.

The complete scientific file covering specifications for the foregoing typical applications will be sent on request

ESTABLISHED 1883

THE REARDON COMPANY

Second and Clinton Streets, ST. LOUIS, MISSOURI

FACTORIES

ST. LOUIS, MO., Second and Clinton Sts.
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WINNIPEG, MAN., 140 Alexander Avenue

BONDEX WATERPROOF CEMENT PAINT

Applicable to ANY Masonry Surface—Porous or Non-Porous

BONDEX offers an outstanding advantage found in no other waterproof cement paint. It is now an all-purpose masonry finish. Formerly the application of this paint, like others of its kind, was limited to stucco and other unpainted porous, masonry surfaces. Today, when used in conjunction with the new BONDEX-PRIMER, BONDEX adheres equally well to painted non-porous masonry and other surfaces lacking sufficient porosity and suction for regular two-coat BONDEX application.

New Bondex-Primer Makes Bondex Adaptable to Dozens of New Uses

BONDEX-PRIMER provides a surface of absolutely uniform suction and porosity for the BONDEX coat. This is particularly important in painting brick surfaces where suction and porosity may vary greatly, even in the same wall.

It reduces the time required for surface preparation—no "wetting down" of the surface is necessary where it is used. It also eliminates the necessity of removing previous firm coatings—another time-saving advantage.

BONDEX-PRIMER plus BONDEX treatment also provides an unusual advantage in painting roofs of metal, tile, etc., in hot climates—the paint film deflects the rays of the sun thus lowering the temperature inside the building.

Description of Bondex Waterproof Cement Paint

BONDEX is a decorative material designed especially for use on stucco, concrete, cinder block, building tile, brick, stone, hollow tile and other masonry wall surfaces. While described as a waterproof cement paint, it is much more than a paint, for it imparts color, waterproofs and preserves in one treatment. BONDEX, as its name implies, bonds with the surface and forms an integral part of the wall itself. It has been styled "The Paint Eternal." It comes in the form of a dry powder and is made ready for use by mixing with cold water. It is furnished in white and 16 tints, which may be intermixed to produce an endless variety of shades. BONDEX may be applied with a brush or spray.

Unlike any other paint on the market today, BONDEX has no substitutes. It is protected by United States and foreign patents. Its fame and use has spread to over 100 countries of the world, where it is being used widely for waterproofing, preserving and beautifying the exteriors of homes, apartments, hotels, institutions, office and industrial buildings; for painting and waterproofing swimming pools, aquariums, reservoirs, fish ponds, basements, foundations and retaining walls; and also as an under or preparatory coating on damp or "green" masonry surfaces, preparatory to painting with oil paint, enamel, etc.

For a permanent, efficient basement waterproofing job, two coats of Reardon's BONDEX are required. The paint not only seals all tiny cracks, pores and crevices, but actually becomes a part of the surface itself.

Meets Rigid Tests

Meets the following specifications: U. S. Treasury Department D-49-9—Waterproof Cement Paint; Resettlement Administration—Cement Paint—Water Type; Federal Emergency Administration of Public Works Formula 10A—Cement Water Paint; Home Owners' Loan Corporation Pa. 1311 and 1312—Stucco and Brick Surfaces—Water Paints; U. S. Department of Agriculture—Cement Water Paint.



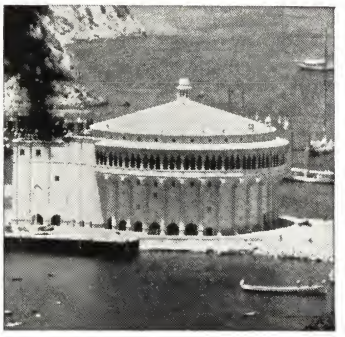
Immeuble Bendahan, Casablanca (French Morocco)

Perfectly protected from the hot sun, wind and rain by Reardon's BONDEX

TYPES OF JOBS AND SURFACES THAT CAN BE DECORATED AND WATERPROOFED WITH BONDEX

TYPES OF SURFACES	TYPES OF JOBS
Stucco	Homes
Rough or Cast Concrete	Apartments
Concrete Block	Hotels
Unglazed Tile and Brick	Stores
*Glazed, Mat, or Hard Burned Brick	Offices
Porous Brick	Factories
*Sooty or Oily Secondhand Brick	Industrial Buildings
Stone	Foundations
Cinder Block	Retaining Walls
Sand-finish Plaster	Basements
*Oil-painted Masonry	Swimming Pools
*Integrally Waterproofed, Smooth-Troweled, or very Dense Stucco and Concrete	Aquariums
*Previously Bondexed Surfaces not sufficiently Weathered for Recoating	Lily Ponds
*Tile Roofs	Cisterns
*Metal Roofs and Siding	Reservoirs
*Oil and Gasoline Storage Tanks	Silos
*Asbestos Shingles and Siding	Institutions

*Non-porous surfaces which require a bonding medium, an undercoat of the new BONDEX-PRIMER.



Wrigley Casino, Santa Catalina, California

BONDEX provides a permanent coating and fast color under difficult seashore conditions

MODEX—THE MODERN CASEIN PAINT IN POWDER FORM

What Is Modex?

MODEX is a casein-bound, lithopone-base, one-coat permanent interior finish supplied in dry powder form, ready for mixing with ordinary cold water. This remarkable paint not only gives complete hide and maximum light reflection in one coat, but it also overcomes all the limitations of casein paste paints. Although comparatively new in the decorating field, MODEX is already famous for its rich beauty, true colors, and "expensive" appearance at low cost. Available in white and 12 beautiful pastel shades; also a range of 12 "Tempera" colors.

What Is Modex Used For?

MODEX is used to impart modern, colorful beauty to almost any type of wall and ceiling surface.

MODEX is the ideal interior finish for

Homes	Offices	Factories
Hotels	Stores	Institutions
Apartments	Theaters	Schools

—in fact, any building where protective and decorative wall and ceiling treatment is a factor to be considered.

To What Types of Surface May Modex Be Applied?

MODEX may be applied to any firm interior wall or ceiling surface, painted or unpainted, such as

Sand or Lime Putty Finish Plaster

Interior Stucco	Tile
Concrete	Canvas
Brick	Metal
Rough Lumber	Glass
Wall Board	Textured Surfaces
Stone	

What Is the Covering Capacity of Modex?

Five pounds of MODEX powder, mixed according to directions, will cover from 275 to 700 square feet of surface (e.g.—275 square feet for very porous brown coat plaster; 700 square feet for sized wall board). The coverage factor naturally varies with the texture and porosity of the surface.

Mixed to the same consistency, MODEX equals and usually surpasses the covering capacity of the ordinary casein paste paint.

How Is Modex Packed?

MODEX comes in 5-pound cartons, 25- and 100-pound drums, and 300-pound barrels.

Does Modex Meet Rigid Specifications?

Meets the following specifications: National Bureau of Standards Federal TT-P-23, Grade B, Type 1; U. S. Treasury Department D-49-10 — Washable Water Paint (Powder Type); Resettlement Administration Casein Cold Water Paint; Federal Emergency Administration of Public Works—Formula 11—Cold Water Paint—Dry Powder Type; Veterans Administration Washable Cold Water Paint—Dry Powder Type.

What Are the Light Reflection Factors of Modex?

Color	Light Reflection	Color	Light Reflection
White	89.7%	No. 7 Nile Green	48.5%
No. 1 Ivory	77.8%	No. 8 Seacrest Green	43.3%
No. 2 Cream	71.6%	No. 9 Pink	64.9%
No. 3 Buff	62.9%	No. 10 Gray	58.2%
No. 4 Maple Tan	50.5%	No. 11 Apricot	64.4%
No. 5 Tan	46.4%	No. 12 Orchid	54.1%
No. 6 Blue	54.6%	Black	2.78%

Deep Colors—MODEX in a range of brilliant, gay colors is also available. Ask for MODEX Tempera Colors.

What Are the Advantages of Modex?

The greatest among the many advantages of MODEX is its economy. Low initial cost, convenient powder form, savings in time and labor during mixing and application, superior lasting qualities, all contribute to its greater ultimate economy. It is important to note how many of the advantages listed below are reflected in savings to the user.

MODEX is self-sizing—requires no sizing or priming coat.

MODEX may be applied direct to "fresh" plaster or "green" masonry 48 hours after the plasterer has completed his work—a decided advantage on new construction work.

MODEX adheres permanently to "fresh" plaster and "green" masonry without sealing; thus allowing the surface to "breathe". This prevents peeling and eliminates subsequent unsightly plaster cracks caused by internal moisture forcing its way to the surface.

MODEX is easily applied with a wide brush or spraying machine—reducing application costs.

MODEX gives two-coat hide with one application on 95% of all jobs.

MODEX dries rapidly, with no objectionable odor, and makes possible two-coat work in one day in those rare cases where two coats are necessary on extremely soiled or unusually porous surfaces.

A MODEXED surface may be recoated with any type paint without surface preparation.

MODEX is ideal for application to acoustical surfaces. When "misted" on by spray application, it has a less injurious effect on acoustical qualities than other type coatings.



Modex, the Modern Paint for Modern Rooms

PLASTEX PLASTIC TEXTURE PAINT

PLASTEX is a casein-bound, mica-lithopone base, interior plastic texture paint possessing unusual adhesive, flexible, spreading and covering qualities. With it, any conceivable texture, from the finest stipple to the roughest antique, can be reproduced on wall and ceiling surfaces.

It dries to a very hard, yet non-cracking, finish which is extremely durable and long-wearing. Manufactured as a white powder, PLASTEX may be tinted to a wide range of attractive shades, and is prepared for use simply by mixing with cold water.

PLASTEX may be applied to any firm interior wall or ceiling surface such as the following:

Plaster	Concrete	Brick	Stone	Metal
Interior Stucco	Tile	Wallboard	Lumber	Glass

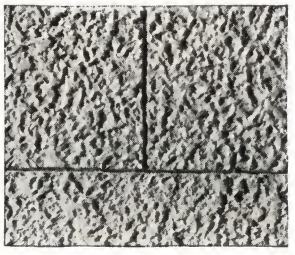
Advantages

(1) High dry bulk and water absorption properties which impart maximum spreading qualities.

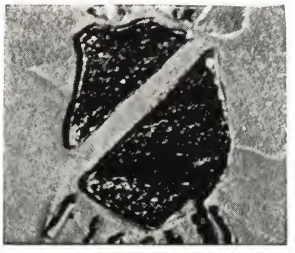
(2) Sets slowly, providing ample time for texturing, which is distinct advantage on one-man jobs.

(3) Being water-resistant in itself, it is unnecessary to apply finish coatings over it to produce a washable surface, and a wide choice of colors are available by incorporating Modex Tempera colors or limeproof dry colors.

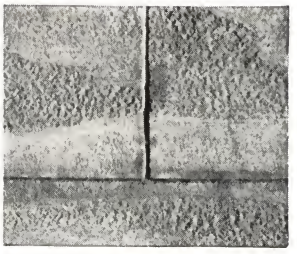
(4) Possesses maximum flexible qualities and will withstand ordinary surfaced movement without danger of cracking or peeling.



Caen Stone



Old English



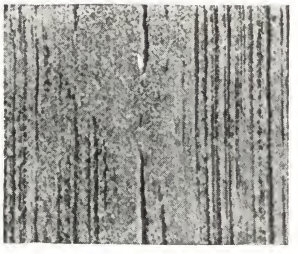
Medici Stone



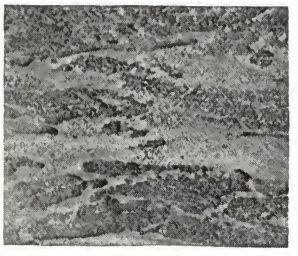
Monastic



Modern American



Antique Bark



Spanish

VENOSTONE PRIMER

VENOSTONE is recommended for one specific use as a priming coat on cement floors and masonry wall surfaces to prepare them for the application of paint, varnish and enamel. It safeguards against any or all of the three most frequent factors which are responsible for 95 per cent of the powdering, flaking, blistering and cracking on concrete paint jobs.

Neutralizes Alkalinity—As it dries VENOSTONE gives off its own alkalinity and forms into a hard, dense neutral film which which prevents any further lime reaction.

Arrests Dampness—Seals the moisture within the surface and prevents its attacking the finish coating.

Closes the Pores—Stops the sponge like drawing action of excessively porous surfaces and leaves the oil in the paint where it belongs.

VENOSTONE is supplied in dry powder form and is simply mixed with cold water to make ready for use. It is manufactured in black and white and 8 standard priming colors.

An ideal cement floor treatment is two coats of VENOSTONE and two coats of clear floor varnish. VENOSTONE provides the proper foundation and color and the varnish imparts the desired glossy, washable, long wearing surface. Wall surfaces are treated in the same manner, except that flat oil paint, enamel or lacquer is employed as a finish coating.

A
Guide
to

PAINTING VARNISHING *and* FINISHING

THE SHERWIN-WILLIAMS CO.



Cleveland · Ohio

DEPARTMENT *of* ARCHITECTURAL SERVICE

THERE IS A SHERWIN-WILLIAMS FINISH FOR
EVERY SURFACE UNDER EVERY CONDITION

THE SHERWIN-WILLIAMS CO.

Makers of PAINTS • VARNISHES • LEAD PRODUCTS • LACQUERS
PIGMENTS • METAL PRIMERS • STAINS • ENAMELS • ETC.

A 72 YEAR OLD RULE THAT SHERWIN-WILLIAMS CO. STILL PRACTICES

72 YEARS AGO, WHEN SHERWIN-WILLIAMS WAS YOUNG, the founders of the company adopted as a general rule the policy best described by the phrase "A Finish for Every Surface," and all the developments of the research and technical departments since that time have been guided and directed with that in mind. The result of this policy is that the complete Sherwin-Williams line is a long one. It embraces not only those types of finishes generally accepted for architectural use, but a complete line of Industrial materials, each designed and manufactured to do a particular job. There is a Sherwin-Williams product for every surface in house, factory, mill, office building, hospital, or any other type of structure. In addition Sherwin-Williams offers to the manufacturer special materials with which to finish the products of his factory. ¶ The development of such an extensive variety of materials has resulted in a fund of knowledge and experience on the part of our Technical Research Department, as to what various types of finishes will do under varying conditions. Almost always, when presented with a particular problem, a regular item in the Sherwin-Williams line can be found to satisfy all the given requirements. When a regular item is not available, the Technical Department is always prepared to develop new materials to meet these specific conditions.

WHAT THE S-W NAME ON PAINT MEANS Briefly, the Sherwin-Williams name on a particular paint means that all the Technical Advice, all the practical tests, all the perfection in manufacturing progress, available to the largest makers of paints and varnishes in the world, have been brought to bear upon the development and the manufacture of the product in the can. In other words, that special paint, made for a particular use, and for a particular type of surface, is the best material that it is humanly possible to make for that purpose. ¶ For when Mr. Henry Sherwin and Mr. Edward Williams founded the company years ago, they concluded that their materials would be quality materials—and the best quality materials that they could make, regardless of any other consideration. That original policy has been strictly adhered to by the management of the company ever since. In specifying Sherwin-Williams products the architect may know that he is giving his client the best material that can be obtained for the purpose.

SHERWIN-WILLI

101 PROSPECT AVE. N.W., ND, OHIO

COVER THE EARTH

SHERWIN-WILLIAMS PAINTS

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Foreword TO SPECIFICATIONS

The following specifications are intended to cover the entire field of finishing exterior floors, walls, and roofs, and interior floors, walls, and woodwork. For additional information, address THE SHERWIN-WILLIAMS CO., Department of Architectural Service, 101 Prospect Avenue, N.W., Cleveland, or any of the Branches listed on the back cover of this catalogue.

PAINTING OF STRUCTURAL STEEL

The adequate protection of structural steel requires that the protective coating shall be as completely impermiable as possible, to exclude water, air, or fumes from contact with the metal.

The priming coat must:

1. Provide lasting adhesion or anchorage to the metal.
2. Prevent corrosion by maintaining an inhibitive or chemically basic condition at the metal surface.
3. Provide a hard, impervious film having sufficient elasticity to accommodate itself to contraction and expansion of the metal.

Sherwin-Williams Kromik Metal Primer is a strong drying Linseed Oil Primer, composed of Lead Chromate in combination with substantial amounts of Red Lead, White Lead, Zinc Oxide, and Iron Oxide. Kromik Primer is noticeably easier to apply than Red Lead, is not affected by sulphur fumes, and shows remarkable durability where structural steel is permitted to stand long periods of time before being recoated.

The function of the finishing coat or coats is to protect the priming coat, and the number of coats and nature of material used will depend upon the conditions to which the surface is exposed.

Sherwin-Williams Metalastic is a highly elastic Graphite type of paint which affords excellent protection under the most severe weather conditions. Its quality may be judged by the fact that it has been the standard Sherwin-Williams recommendation for field coats on structural steel for over thirty years.

In the recently-developed Kem-Kromik and Kem-Elast[illegible] Sherwin-Williams has retained the fine qualities associate[illegible] for many years with regular Kromik and Metalastic, but in addition, by employing the latest developments in Synthetic liquids, it has been possible to obtain faster dr[illegible]ng and maximum resistance to weather and corrosive fumes.

Extreme conditions of fumes and moisture require particular care in selecting the paint to be used. For this reason, where unusual conditions are anticipated, it is suggested that specific recommendations be obtained from the Sherwin-Williams Department of Architectural Service.

1 PAINTING STRUCTURAL STEEL & ORNAMENTAL IRON (Exterior and Interior)

(Fast-drying; maximum resistance to exposure.)

SHOP OR PRIMING COAT—Kem Kromik Primer, applied according to manufacturers' directions.
FIRST FIELD COAT—S-W Kem-Elastic, color selected, applied according to manufacturers' directions.
SECOND FIELD COAT—S-W Kem-Elastic, color selected, applied according to manufacturers' directions.

1 A (Alternate to No. 1) PAINTING STRUCTURAL STEEL & ORNAMENTAL IRON (Exterior and Interior)

(Slower-drying; less costly.)

SHOP OR PRIMING COAT—S-W Kromik Metal Primer, applied according to manufacturers' directions.
FIRST FIELD COAT—S-W Metalastic color selected, applied according to manufacturers' directions.
SECOND FIELD COAT—S-W Metalastic, color as selected, applied according to manufacturers' directions.

2 PAINTING ORNAMENTAL IRON — VERDE ANTIQUE FINISH (Exterior or Interior)

SHOP OR PRIMING COAT—S-W Kromik Metal Primer, applied according to manufacturers' directions.
FIRST FIELD COAT—S W P Tobacco Brown 393.
SECOND FIELD COAT—Brush stipple with S W P Trimbrite Verdas Green.

3 PAINTING GALVANIZED IRON

(Fast drying; maximum resistance to exposure.)

SHOP OR PRIMING COAT—S-W Galvite Primer.
FIRST FIELD COAT—S-W Kem-Elastic, color selected, applied according to manufacturers' directions.
SECOND FIELD COAT—S-W Kem-Elastic, color selected, applied according to manufacturers' directions.

3 A PAINTING GALVANIZED IRON

(Slower drying; less costly.)

SHOP OR FIELD COAT—S-W Galvite Primer.
FIRST FIELD COAT—S-W Metalastic, color selected, applied according to manufacturers' directions.
SECOND FIELD COAT—S-W Metalastic, color selected, applied according to manufacturers' directions.

4 PAINTING HOT SURFACES (Stacks, Flues, Pipes, etc., Exterior and Interior)

FIRST COAT—S-W Salamander Black, applied full body.
SECOND COAT—S-W Salamander Black, applied full body.

4 A (Alternate to No. 4) PAINTING HOT SURFACES (Stacks, Flues, Pipes, etc., Exterior and Interior)

FIRST COAT—S-W High-Heat Smokestack Brilliant Light Gray.
SECOND COAT—S-W High-Heat Smokestack Brilliant Light Gray.

5 PAINTING METAL ROOFS

(Fast-drying—maximum resistance to exposure.)

SHOP OR PRIMING COAT—S-W Kem Kromik Primer, applied according to manufacturers' directions. For galvanized surfaces, S-W Galvite Primer.

FIRST FIELD COAT—S-W Kem-Elastic, color selected, applied according to manufacturers' directions.

SECOND FIELD COAT—S-W Kem-Elastic in color selected, applied according to manufacturers' directions.

5 A (Alternate to No. 5) PAINTING METAL ROOFS

(Slightly slower drying—less costly.)

SHOP OR PRIMING COAT—S-W Kromik Primer, applied according to manufacturers' directions. For galvanized surfaces, S-W Galvite Primer.

FIRST FIELD COAT—S-W Metalastic, color selected, applied according to manufacturers' directions.

SECOND FIELD COAT—S-W Metalastic in color selected, applied according to manufacturers' directions.

5 B (Alternate to Nos. 5 and 5A) PAINTING METAL ROOFS

(For reasons of strictest economy.)

SHOP OR FIELD COAT—S-W Kromik Primer, applied according to manufacturers' directions. For galvanized surfaces, S-W Galvite Primer.

FIRST FIELD COAT—S-W R. & B. Utility Paint, color selected, applied according to manufacturers' directions.

SECOND FIELD COAT—S-W R. & B. Utility Paint, color selected, applied according to manufacturers' directions.

PAINTING EXTERIOR SURFACES

SWP House paint is a first quality prepared paint in which pure white lead carbonate is combined with two other Sherwin-Williams paint pigments: S-W OZLO (leaded zinc) and S-W TITANIUM-magnesium, in a practical formulation that has successfully withstood long exposure in all climates.

SWP Undercoater contains the same tested pigments used in SWP. It is especially designed for the first coat on new wood, or normal repaint work and is particularly valuable for badly weathered exterior surfaces.

SWP White and SWP Colors are made under the most careful supervision, from pigments, colors, oils, and driers of our own manufacture in order to insure a performance that is uniform and dependable.

SWP Fume Resisting White should be specified where gases and sulphur fumes are prevalent.

Because of the variety of conditions encountered, full thinning instructions are supplied on every package. The Architect need only specify "application according to manufacturer's instructions."

6 PAINTING EXTERIOR WOODEN SURFACES

(For maximum service and protection)

FIRST COAT—S W P Undercoater 450 applied according to label directions.

SECOND COAT—S W P Undercoater 450 applied according to label directions.

THIRD COAT—S W P in color selected.

NOTE: In the interest of economy the first coat may be omitted.

6 A (Alternate to No. 6) PAINTING EXTERIOR WOODEN SURFACES

(For maximum service and protection—SWP system.)

FIRST COAT—S W P Gloss White applied according to label directions.

SECOND COAT—S W P in color selected applied according to label directions.

THIRD COAT—S W P in color selected applied according to label directions.

6 B (Alternate to No. 6) PAINTING EXTERIOR WOODEN SURFACES

(Where Architect desires to leave mixing of paint to discretion of the Painting Contractor.)

FIRST COAT—S-W Zilo, thinned according to label directions.

SECOND COAT—S-W Zilo according to label directions.

THIRD COAT—S-W Zilo according to label directions.

NOTE: Sherwin-Williams Zilo is a fused combination of lead and zinc, 75% lead and 25% zinc, which adds to the whiteness, reduces chalking, and increases gloss.

6 C (Alternate to No. 6) PAINTING EXTERIOR WOODEN SURFACES

(Where a straight White Lead Finish is desired.)

FIRST COAT—S-W ODP White Lead, thinned according to label directions.

SECOND COAT—S-W ODP White Lead thinned according to label directions.

THIRD COAT—S-W ODP White Lead thinned according to label directions.

7 PAINTING OF EXTERIOR STUCCO SURFACES

The inherent beauty of a stucco surface is frequently marred by stains caused by moisture which gets into the more porous sections of the surface during severe weather conditions. This same moisture frequently attacks the surface beneath the stucco, causing extensive and sometimes expensive repairs. The Architect is urged to recommend the finishing of stucco surfaces in such a way that they are made "tight" to weather. A satisfactory trouble-free job is thus made possible.

FIRST COAT—S-W Stucco & Concrete Paint in color selected, thinned with S-W Stucco & Concrete Mixing Sealer, according to label directions.

SECOND COAT—S-W Stucco & Concrete Paint, color selected, applied according to label directions.

THIRD COAT—S-W Stucco & Concrete Paint, color selected, applied according to label directions.

8 PAINTING EXTERIOR BRICK WALLS

(Where Flat Finish is desired.)

FIRST COAT—S-W Stucco & Concrete Paint, in color selected, thinned with S-W Stucco & Concrete Mixing Sealer according to label directions.

SECOND COAT—S-W Stucco & Concrete Paint, in color selected, applied according to label directions.

THIRD COAT—S-W Stucco & Concrete Paint, in color selected, applied according to label directions.

8 A (Alternate to No. 8) PAINTING EXTERIOR BRICK WALLS

(Where Gloss Finish is desired.)

FIRST COAT—S-W Stucco & Concrete Paint in color selected, thinned with S-W Stucco & Concrete Mixing Sealer according to label directions.

SECOND COAT—S W P, in color selected, applied according to label directions.

THIRD COAT—S W P, in color selected, applied according to label directions.

9 PAINTING EXTERIOR SHINGLE WALLS

FIRST COAT—S W P, in color selected, applied according to label directions.
SECOND COAT—S W P, applied according to label directions.
THIRD COAT—S W P, applied according to label directions.

10 STAINING SHINGLE WALLS AND ROOFS

FIRST COAT—S-W Preservative Shingle Stain in color selected.
SECOND COAT—S-W Preservative Shingle Stain in color selected.

NOTE: Where possible the first coat should be a "dip coat." Shingles should be dipped in the stain for two-thirds of their length and thrown in loose piles to dry before being affixed to the structure.

11 PAINTING PORCH FLOORS

FIRST COAT—S-W Porch & Deck Paint in color selected, applied according to label directions.
SECOND COAT—S-W Porch & Deck Paint in color selected.
THIRD COAT—S-W Porch & Deck Paint in color selected.

12 PAINTING CANVAS DECKS

FIRST COAT—S-W Porch & Deck Paint in color selected, applied according to label directions.
SECOND COAT—S-W Porch & Deck Paint in color selected.
THIRD COAT—S-W Porch & Deck Paint in color selected.

13 FINISHING PORCH CEILINGS (Natural Finish)

FIRST COAT — S-W Rexpar Varnish, applied according to label directions.
SECOND COAT—S-W Rexpar Varnish.
THIRD COAT—S-W Rexpar Varnish.

14 FINISHING EXTERIOR WOOD OR METAL TRIM (Enamel Finish)

FIRST COAT—S W P Flat White, applied according to label directions.
SECOND COAT — S W P Flat White and S-W Old Dutch Enamel, equal parts.
THIRD COAT—S-W Old Dutch Enamel, applied full body.

NOTE: Last two coats may be tinted in accordance with Architects desires with S-W First Quality Colors in Oil.

VARNISH FINISHES

The majority of hard woods, with the exception of maple, are open-grain. They have fairly prominent open pores, which follow the figures of the grain. A full, smooth varnish finish on such woods requires that these open pores be filled with a paste wood filler to secure a level surface for finishing. Many times, however, the Architect prefers the so called open-pore finish, in which case the filler is omitted, and a special finishing system employed. Inquire of the S-W Representative for details.

Close-grain woods require no filler, and we advise against the use of any so-called soft-wood filler or first-coater.

In order to differentiate readily between the open-grain and close-grain woods, a list of the better-known building woods is given, segregated as to type:

Open-grain woods:

Ash	Chestnut	Mahogany	Rosewood
Butternut	Elm	Oak	Walnut

Close-grain Woods:

Basswood	Cherry*	Gumwood	Poplar
Birch*	Cypress	Maple	Redwood
Cedar	Fir	Pine	Whitewood

*Will permit use of paste filler where it is desired to emphasize the grain.

Handling of Woodwork Trim

All finishing lumber should be delivered protected from the weather, and stored on the premises in dry warm rooms to prevent the absorption of moisture with the resultant roughening of the wood which would require extra labor to recondition before finishing.

Preparation of Surfaces

All surfaces must be sanded smooth, rubbing *with* the grain, and never across it. Blemishes should be corrected and the surface, *and the room* cleaned of dust before proceeding with the application of any finishing coats. Each varnish coat should be sanded lightly before applying the succeeding coat, and the surface carefully wiped clean in every case.

Exterior Varnish

For varnished surfaces exposed to weather, extremes of heat and cold, excessive moisture, or to strong direct sunlight (window-sills, show-windows, etc.) the use of a spar varnish is required. Sherwin-Williams Rexpar is strongly resistant to the conditions enumerated. It is pale in color, and produces an excellent film.

Floor Varnish

The fundamental requirements for a floor varnish are that it must dry hard and tough without being brittle. It must be resistant to both hot and cold water as well as ordinary soap solutions. It must be rapid-drying. Sherwin-Williams Mar-Not Varnish fulfills these requirements. It produces a tough, tenacious film, pale in color, and dries to walk on over-night.

Finishes for Interior Woodwork

Two methods are offered for finishing interior wood trim:

1. Full varnish finish with S-W Mar-Not Fast-Dri Varnish in full gloss, giving a polished finish, or a dull-rubbed finish by rubbing the surface with powdered pumice stone and rubbing oil.

2. Satin Varnish finish—a beautiful dull-rubbed finish produced by a finishing coat of S-W Mar-Not Satin Finish Varnish which dries to a dull finish without the labor or cost of hand-rubbing.

NOTE: Even where a hand rubbed finish is specified, the use of Satin Finish Varnish is most desirable for mouldings, curved areas, etc., where hand-rubbing is not feasible.

Mar-Not Satin Finish Varnish is a finishing varnish for both wood, trim and floors. It produces a uniform satin finish.

Gymnasium and Heavy Duty Wood Floors

S-W Floor Seal, a varnish type wood-hardener, is designed to toughen and harden wood floors where extra heavy duty makes a varnish surface impractical. Floor Seal penetrates into the wood, leaving very little surface film, dries over night, is not slippery, does not collect dust, does not darken the floor as do ordinary floor oils. It is recommended for new floors, of either hard or soft woods.

SHERWIN-WILLIAMS S W P PAINT PREPARED

Suitable Trims			Suitable Trims			Suitable Trims		
Gloss White 353 363 496	Pearl Gray 479		Gloss White 357 363	Light Lead 353		Porch Ceilings, etc.	Blue 369	
Gloss White 357 479	Slate 363		Gloss White 353	Silver Gray 357		496 388 382	Cream Gray 360	
Gloss White 499 461 360	Canary Yellow 387		Gloss White 360 393 498	Ivory 496		485 499 470	Cream 462	
Gloss White 496 388 385	Colonial Yellow 375		Gloss White 462 485 499	Golden Yellow 470		387 393 496 462	Golden Brown 486	
Gloss White 360 383 496	French Cr. Green Medium 362		Gloss White 461 496 387	Apple Green 460		385 496 375	Tobacco Brown 393	
Gloss White 496 360	Willow Green 461		Gloss White 351 485 496	Bottle Green 484		Gloss White 360 351	Red 367	

SHERWIN-WILLIAMS STUCCO AND CONCRETE PAINT

CORAL TINT | CREAM | TAN | CREAM GRAY

CANARY YELLOW | SEA GREEN | TERRA COTTA | GRAY

Complete Color Cards furnished upon request. Also WHITE

Inches 1 2 3 4 5 6 7 8
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
Centimetres
TIFFEN® Color Control Patches © The Tiffen Company, 2007
Blue Cyan Green Yellow Red Magenta White 3/Color Black

SHERWIN-WILLIAMS FLAT-TONE

IVORY	L. R. V.-79%			CAEN STONE	L. R. V.-76%
PALE JADE	L. R. V.-47%	IVORY TAN	L. R. V.-65%	LIGHT BLUE	L. R. V.-58%
WARM BEIGE	L. R. V.-59%	SILVER GRAY	L. R. V.-46%	BUFF	L. R. V.-64%

PLEASE DO NOT DETACH COLOR SAMPLES. COMPLETE COLOR CARD SENT ON REQUEST.
(L. R. V.—Light Reflection Value.)

SHERWIN-WILLIAMS SEMI-LUSTRE

CANARY YELLOW	L. R. V.-75%			IVORY WHITE	L. R. V.-78%
PALE GREEN	L. R. V.-58%	CREAM GRAY	L. R. V.-63%	MIST BLUE	L. R. V.-60%
BUFF	L. R. V.-67%	PEACH	L. R. V.-70%	TAUPE	L. R. V.-55%

PLEASE DO NOT DETACH COLOR SAMPLES. COMPLETE COLOR CARD SENT ON REQUEST.
(L. R. V.—Light Reflection Value.)

SHERWIN-WILLIAMS WOODCRAFT STAINS
(PENETRATING OIL TYPE)

MAPLE	MOSS GREEN	WALNUT	GOLDEN OAK
DARK MAHOGANY	WEATHERED OAK	ADAM BROWN	DARK OAK

15 EXTERIOR WOODWORK—STAINED & VARNISHED—OPEN-GRAIN WOODS

FIRST COAT—S-W Oil Stain in color selected.
SECOND COAT—S-W Paste Wood Filler, color to correspond with stain, wiped across grain when partly dry.
THIRD COAT—S-W Rexpar Varnish, applied according to label directions.
FOURTH COAT—S-W Rexpar Varnish applied full body.
NOTE: For dull finish, rub to a uniform satin finish with powdered pumice stone and rubbing oil, after varnish has dried for 48 hours.

16 EXTERIOR WOODWORK—STAINED & VARNISHED—CLOSE-GRAIN WOODS

FIRST COAT—S-W Oil Stain in color selected.
SECOND COAT—S-W Rexpar Varnish, applied according to label directions.
THIRD COAT—S-W Rexpar Varnish applied full body.
NOTE: For dull finish, rub to a uniform satin finish with powdered pumice stone and oil, after the varnish has dried for 48 hours.

17 EXTERIOR WOODWORK — NATURAL FINISH—OPEN-GRAIN WOODS

FIRST COAT — S-W Transparent Paste Wood Filler, wiped across grain when partly dry.
SECOND COAT—S-W Rexpar Varnish, applied according to label directions.
THIRD COAT—S-W Rexpar Varnish applied full body.
NOTE: For dull finish, rub to a uniform satin finish with powdered pumice stone and oil, after varnish has dried for 48 hours.

18 EXTERIOR WOODWORK — NATURAL FINISH—CLOSE-GRAIN WOODS

FIRST COAT—S-W Rexpar Varnish, applied according to label directions.
SECOND COAT—S-W Rexpar Varnish applied full body.
NOTE: For dull finish, rub to a uniform satin finish with powdered pumice stone and oil, after the varnish has dried for 48 hours.

19 FINISHING HARDWOOD FLOORS—STAINED AND VARNISHED—OPEN-GRAIN WOODS

FIRST COAT—S-W Oil Stain in color selected.
SECOND COAT—S-W Paste Wood Filler, color to correspond with stain, wiped across grain when partly dry.
THIRD COAT—S-W Mar-Not Varnish, applied according to label directions.
FOURTH COAT—S-W Mar-Not Varnish applied full body.
NOTE: If the color produced by the filler alone is satisfactory, the first coat in the above specification may be omitted.

20 FINISHING HARDWOOD FLOORS—STAINED AND VARNISHED—CLOSE-GRAIN WOODS

FIRST COAT—S-W Oil Stain in color selected.
SECOND COAT—S-W Mar-Not Varnish, applied according to label directions.
THIRD COAT—S-W Mar-Not Varnish applied full body.

21 FINISHING HARDWOOD FLOORS—NATURAL FINISH—OPEN-GRAIN WOODS

FIRST COAT—S-W Transparent Paste Wood Filler, wiped across grain when partly dry.
SECOND COAT—S-W Mar-Not Varnish, applied according to label directions.
THIRD COAT—S-W Mar-Not Varnish applied full body.

22 FINISHING HARDWOOD FLOORS—NATURAL FINISH—CLOSE-GRAIN WOODS

FIRST COAT—S-W Mar-Not Varnish, applied according to label directions.
SECOND COAT—S-W Mar-Not Varnish applied full body.
THIRD COAT—S-W Mar-Not Varnish applied full body.

23 FINISHING NEW SOFTWOOD FLOORS—STAINED & VARNISHED

FIRST COAT—S-W Flo-lac in shade selected, applied according to label directions.
NOTE: If a deeper tone is desired, repeat this operation.
SECOND COAT—S-W Mar-Not Varnish applied full body.
THIRD COAT—S-W Mar-Not Varnish applied full body.

24 FINISHING NEW SOFTWOOD FLOORS—PAINTED FINISH

FIRST COAT—S-W Floor Enamel in color selected, applied according to label directions.
SECOND COAT—S-W Floor Enamel in color selected, applied full body.
THIRD COAT—S-W Floor Enamel in color selected, applied full body.

25 FINISHING NEW CONCRETE FLOORS—PAINTED FINISH

FIRST COAT—S-W Floor Enamel in color selected, applied according to label directions.
SECOND COAT—S-W Floor Enamel in color selected, applied full body.
THIRD COAT—S-W Floor Enamel in color selected, applied full body.

26 FINISHING SCHOOL-ROOM OR GYMNASIUM FLOORS (Stores, Warehouses, etc.)

FIRST COAT—Apply S-W Floor-Seal, full body.
NOTE: Occasionally a second coat may be required to insure service.

27 FINISHING BALLROOM FLOORS

FIRST COAT—S-W Floor-Seal applied full body.
SECOND COAT—S-W Prepared Wax—rub to hard polished surface with weighted rubbing machine.
THIRD COAT—S-W Prepared Wax—rub to a hard polished surface with a weighted rubbing machine.
NOTE: Before dancing, a small amount of S-W powdered wax may be sprinkled on the surface if desired.

28 FINISHING DISCOLORED HARD OR SOFT WOOD FLOORS—STAINED & VARNISHED

FIRST COAT—S-W Flo-lac Ground Color applied full body.
SECOND COAT—Grain floor with S-W Graining Preparation.
THIRD COAT—S-W Flo-lac in shade selected, applied full body.
FOURTH COAT—S-W Mar-Not Varnish, applied full body.

29 INTERIOR WOODWORK—STAINED & VARNISHED—OPEN-GRAIN WOODS

FIRST COAT—S-W Woodcraft Stain, in color selected.
SECOND COAT—S-W Paste Wood Filler in color to correspond with stain, wiped across grain when partly dry.
THIRD COAT—Thin coat of White shellac.
FOURTH COAT—S-W Mar-Not Varnish, applied full body.
FIFTH COAT—S-W Mar-Not Varnish applied full body.

NOTE: 1. For dull effect, rub to a uniform satin finish with powdered pumice stone and oil after varnish has dried 48 hours.
2. Or, for economy, substitute a coat of Mar-Not Satin-Finish Varnish for the Fifth Coat.

30 INTERIOR WOODWORK—STAINED & VARNISHED—CLOSE-GRAIN WOODS

FIRST COAT—S-W Woodcraft Stain in color selected.
SECOND COAT—Thin coat of White Shellac
THIRD COAT—S-W Mar-Not Varnish applied full body.
FOURTH COAT—S-W Mar-Not Varnish applied full body.

NOTE: 1. For dull finish, rub to a uniform satin finish with powdered pumice stone and oil after varnish has dried for 48 hours.
2. Or, for economy, substitute a coat of Mar-Not Satin-Finish Varnish for the Fourth Coat.

31 INTERIOR WOODWORK — NATURAL FINISH—OPEN-GRAIN WOODS

FIRST COAT—S-W Transparent Paste Wood Filler, wiped across grain when partly dry.
SECOND COAT—Thin coat White Shellac.
THIRD COAT—S-W Mar-Not Varnish applied full body.
FOURTH COAT—S-W Mar-Not Varnish applied full body.

NOTE: 1. For dull finish, rub to a uniform satin finish with powdered pumice stone and oil after varnish has dried for 48 hours.
2. Or, for economy, substitute a coat of Mar-Not Satin-Finish Varnish for the Fourth Coat.

32 INTERIOR WOODWORK — NATURAL FINISH—CLOSE-GRAIN WOODS

FIRST COAT—Thin coat White Shellac.
SECOND COAT—S-W Mar-Not Varnish applied full body.
THIRD COAT—S-W Mar-Not Varnish applied full body.

NOTE: 1. For dull effect, rub to a uniform satin finish with powdered pumice stone and oil after varnish has dried for 48 hours.
2. Or, for economy, substitute a coat of Mar-Not Satin-Finish Varnish for the Third Coat.

33 INTERIOR WOODWORK — STAINED AND WAXED — OPEN-GRAIN WOODS

FIRST COAT—S-W Woodcraft Stain in color selected.
SECOND COAT—S-W Paste Wood Filler in color to correspond with stain, wiped across grain when partly dry.
THIRD COAT—Thin coat White Shellac.
FOURTH COAT—S-W Prepared Wax—wipe off surplus and polish.
FIFTH COAT—S-W Prepared Wax—wipe off surplus and polish.

34 INTERIOR WOODWORK — STAINED AND WAXED—CLOSE-GRAIN WOODS

FIRST COAT—S-W Woodcraft Stain in color selected.
SECOND COAT—Thin coat White Shellac.
THIRD COAT—S-W Prepared Wax—wipe off surplus and polish.
FOURTH COAT—S-W Prepared Wax—wipe off surplus and polish.

PAINTING AND DECORATING INTERIOR WALLS

The Sherwin-Williams Company has developed a complete line of gloss, semi-gloss and flat interior finishes for walls of plaster, composition board, wood, metal, brick or concrete. The following brief descriptions will assist the Architect in writing his specifications.

Specifications are designed to cover the entire field of interior wall finishing insofar as the Architect's duties and responsibilities are concerned. If special conditions occur, not covered in the following, write the Sherwin-Williams Department of Architectural Service.

S-W Flat Tone

is a flat-finish washable oil wall paint, furnished in a wide selection of shades, both pastel and deep colors, designed for use on walls of plaster, composition, wood, metal, brick or concrete. Complete color card sent on request.

S-W Painter-Craft Wall Paint No. 96

is a heavy-bodied flat finish wall paint, for use over rough surfaces, or where a special textured effect is desired. Furnished in White only, but may be tinted with S-W First Quality Oil Colors to any desired shade.

S-W Painter Craft Maintenance Wall Paint No. 3

is a beautiful washable wall finish especially designed for maintenance work. Dries with an egg-shell finish, between that of S-W Flat-tone and S-W Semi-Lustre. Furnished in white only, but may be tinted to any desired shade with S-W First Quality Oil Colors.

S-W Semi-Lustre

is a washable oil wall finish, which dries with a soft mellow half-lustre as its name implies. It is recommended for those surfaces where frequent washings make a more durable finish than possible with a strictly flat-finish paint, but where a high-gloss enamel finish is not desired. Furnished in a wide selection of shades. Complete color card sent on request.

S-W Interior Gloss

is an enamel-like finish for interior walls and woodwork. It is tough, durable and washable and has excellent hiding. Furnished in a wide selection of popular pastel colors. Complete color card sent upon request.

S-W Old Dutch Enamel

is the finest quality full-oil enamel for interior and exterior finishing. Furnished in white only, gloss or dull, but may be tinted to any desired shade with S-W First Quality Oil Colors.

S-W Kem-Namel Snow White

is a synthetic resin enamel that produces a beautiful snow white finish desirable for interior surfaces only and is exceptionally tough and durable. Dries dust-free in two to three hours. Furnished in white only, gloss or dull, but may be tinted to any desired shade with S-W First Quality Oil Colors.

S-W Enamelastic

is a full enamel which dries to a high-gloss finish, both durable and washable. It is designed for composition or plaster walls, and may be used on interior woodwork as well. Furnished in white, but may be tinted to any desired shade with S-W First Quality Oil Colors.

S-W XXX Enamel Undercoater

is an enamel undercoater with exceptional smoothness and hiding capacity, for use beneath an enamel finish. Its use seals the surface tight, preventing suction or spotting of the surface, and makes the ideal base for an enamel finish of any type.

S-W Wall Primer and Sealer

is a penetrating wall sealer containing a percentage of pigment, which is effective in stopping suction on new and old wall surfaces except the more porous types of composition board. The pigment by adding to its covering capacity makes its use advisable where two-coat work is desired.

S-W Tri-Seal

is a pigment penetrating wall sealer for use on exceptionally porous composition boards such as Masonite, Celotex, etc. This material should not be used on brick, tile, or concrete, where S-W Wall Primer and Sealer is recommended.

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35 SMOOTH, SAND FINISH, OR TEXTURED PLASTER, COMPOSITION BOARD OR CANVAS COVERED WALLS — WASHABLE FLAT FINISH

FIRST COAT—S-W Wall Primer & Sealer applied full body.
NOTE: On porous composition board, use S-W Tri-Seal instead.
SECOND COAT—S-W Flat-Tone in color selected, and S-W Wall Primer & Sealer, mixed in accordance with label directions.
THIRD COAT—S-W Flat-Tone in color selected, applied full body.
NOTE: In the interest of economy, the second coat may be omitted. If glazed effect is desired add one quart S-W Wall Primer and Sealer to gallon S-W Flat Tone on third coat.

36 SMOOTH, SAND FINISH, OR TEXTURED PLASTER, COMPOSITION BOARD OR CANVAS COVERED WALLS — WASHABLE EGG-SHELL FINISH

FIRST COAT—S-W Wall Primer & Sealer, applied full body.
NOTE: On porous composition board, use S-W Tri-Seal instead.
SECOND COAT—S-W Painter Craft Maintenance Wall Paint No. 3 applied according to label directions.
THIRD COAT—S-W Painter Craft Maintenance Wall Paint No. 3 applied according to label directions.
NOTE: In the interest of economy, the third coat may be omitted.

37 SMOOTH, SAND FINISH, OR TEXTURED PLASTER, COMPOSITION BOARD OR CANVAS COVERED WALLS — SEMI-LUSTRE FINISH

FIRST COAT—S-W Wall Primer & Sealer, applied full body.
NOTE: On porous composition board, use S-W Tri-Seal instead.
SECOND COAT—S-W Semi-Lustre in color selected, apply full body.
THIRD COAT—S-W Semi-Lustre in color selected, apply full body.
NOTE: In the interest of economy, the third coat may be omitted.
If either a stippled effect, or a glazed finish is desired, same may be obtained in connection with Specifications numbers 36 and 38 in the following manner:

For Sponge Stippled effect: When last coat is dry, apply sponge stipple in color selected, using same material of different colors as used for last coat. Either two or three color effects may be obtained by simply repeating operation.

For Glazed effect: When last coat is dry, apply S-W Glazing Liquid tinted with S-W First Quality Oil Colors to color selected to a portion of wall. Then stipple with crumpled cloth, twisting cloth slightly after it has been applied to wall surface. Complete color card sent on request.

38 SMOOTH, SAND FINISH, OR TEXTURED PLASTER, COMPOSITION BOARD OR CANVAS COVERED WALLS—INTERIOR GLOSS FINISH

FIRST COAT—S-W Wall Primer and Sealer.
NOTE: On porous composition board, use S-W Tri-Seal instead.
SECOND COAT—S-W Interior Gloss finish, color selected.

39 INTERIOR WALLS, ANY TYPE, HEAVY FLAT WALL PAINT FINISH

FIRST COAT—S-W Wall Primer & Sealer.
NOTE: On porous composition board, use S-W Tri-Seal instead.
SECOND COAT—S-W Wall Paint No. 96, applied full body.
NOTE: Due to heavy nature of this material, special textured effects are possible with whisk broom, sponge, cloth, etc., before this last coat has dried. Apply to Sherwin-Williams for directions for special effects.

40 HIGHEST QUALITY ENAMEL FINISH FOR WALLS — ANY TYPE

FIRST COAT—S-W Wall Primer & Sealer.
NOTE: On porous composition board, use S-W Tri-Seal instead.
SECOND COAT—S-W Kem-Namel Snow White mixed with S-W XXX Undercoater according to label directions.
THIRD COAT—S-W Kem-Namel Snow White, applied according to label directions.

41 ENAMEL FINISH FOR INTERIOR WALLS — ANY TYPE

FIRST COAT—S-W Wall Primer & Sealer.
NOTE: On porous composition board, use S-W Tri-Seal instead.
SECOND COAT—S-W Painter Craft XXX Undercoater, mixed with S-W Enamelastic, according to label directions.
THIRD COAT—S-W Enamelastic, applied according to label directions.
NOTE: In the interest of economy, second coat may be omitted.

(Alternate to Specification No. 41 For economy)

41 A ENAMEL FINISH FOR INTERIOR WALLS — ANY TYPE

FIRST COAT—S-W Wall Primer & Sealer.

NOTE: On porous composition board, use S-W Tri-Seal instead.

SECOND COAT—S-W Painter Craft One Coat Enamel No. 39 mixed with S-W Painter Craft Enamel Undercoater No. 45 according to label directions.

THIRD COAT—S-W Painter Craft One Coat Enamel No. 39 applied according to label directions.

NOTE: In the interest of economy, second coat may be omitted.

42 HIGHEST QUALITY ENAMEL FINISH FOR INTERIOR WOOD TRIM

FIRST COAT—S-W XXX Enamel Undercoater applied according to label directions.

SECOND COAT—S-W XXX Enamel Undercoater applied according to label directions.

THIRD COAT—S-W Kem-Namel Snow White mixed with S-W XXX Enamel Undercoater applied according to label directions.

FOURTH COAT—S-W Kem-Namel Snow White applied full body.

43 ENAMEL FINISH FOR INTERIOR WOODWORK

FIRST COAT—S-W XXX Enamel Undercoater applied according to label directions.

SECOND COAT—S-W XXX Enamel Undercoater applied according to label directions.

THIRD COAT—S-W Enamelastic, mixed with S-W XXX Enamel Undercoater according to label directions.

FOURTH COAT—S-W Enamelastic, applied according to label directions.

(Alternate to Specification No. 43—for economy)

43 A ENAMEL FINISH FOR INTERIOR WOODWORK

FIRST COAT—S-W Painter Craft Enamel Undercoater No. 45, applied according to label directions.

SECOND COAT—S-W Painter Craft One Coat Enamel No. 39, mixed with S-W Enamel Undercoater No. 45, according to label directions.

THIRD COAT—S-W Painter Craft One Coat Enamel No. 39, applied according to label directions.

44 PAINTING RADIATORS

FIRST COAT—S-W Semi-Lustre in color selected.

SECOND COAT—S-W Flat-Tone in color selected (for flat finish).
S-W Semi-Lustre in color selected (for semi-gloss finish).

NOTE: Because of their tendency to yellow under heat, whites should be avoided.
Tests prove that radiators painted with bronze powder materials, radiate 25% less heat than those painted with materials containing zinc oxide or lithopone.

INDUSTRIAL INTERIORS

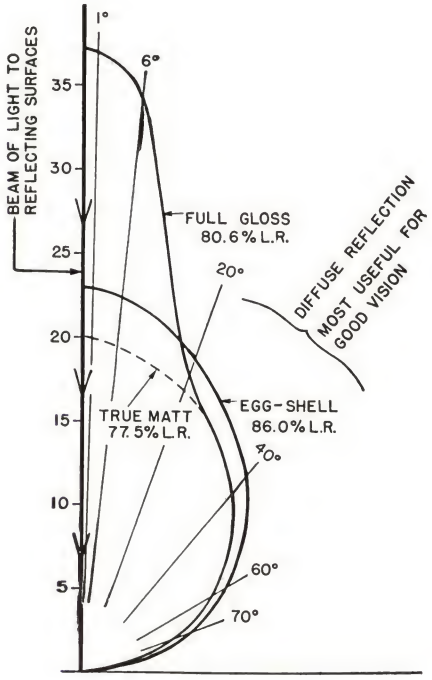
SAVE-LITE WHITE PAINT FOR INDUSTRIAL INTERIORS

Save-Lite is the name which identifies a complete line of Interior White Finishes manufactured and offered by Sherwin-Williams for the betterment of industrial lighting. The value of a white finish for the interior of mills and factories is well known. The gain in quality and volume of production, in accuracy, and in the health and improved morale of workmen due to proper lighting has been demonstrated in numerous cases.

Sherwin-Williams Save-Lite is manufactured in three degrees of gloss—Flat, Egg-Shell and Full Gloss. It can be applied to any interior surface — wood, metal, concrete, plaster or composition board. The material is formulated in a consistency suitable for application by either brush or spray. Sherwin-Williams Save-Lite has an unusually high light reflecting value. The light reflection factor for all Save-Lite products has been determined by careful laboratory methods and varies from 85% to 87% of the actual light falling upon the surface. Save-Lite retains its superior light reflection characteristics for a remarkably long period of time after application, its freedom from yellowing being one of its outstanding features.

SELECTING THE DEGREE OF GLOSS

There is no manufacturing reason for Sherwin-Williams advocating any one type of Mill White paint. Our sole interest is in supplying an interior finish which will be best adapted to the particular condition involved. Considered solely from the standpoint of light reflection and distribution, Save-Lite Eg-Shel offers some advantage by comparison with either the Flat or the Gloss. The accompanying drawing illustrates the comparative distribution of light reflected at various



GLOSS AND EGGSHELL WHITES

angles from a surface painted with Eg-Shel and Gloss white paints. The advantage of Eg-Shel in the region of diffuse reflection is apparent.

Save-Lite Eg-Shel finish combines the strong light diffusing properties of a flat-white with the superior washability and service of a full gloss. However, for maximum washability and durability, under the most adverse conditions, Full Gloss Save-Lite is recommended.

For ceiling surfaces over indirect lighting equipment, it is important to eliminate high lights, or glare. This is best accomplished by the use of a flat or egg-shell finish. Inasmuch as the efficiency of the indirect lighting unit is almost entirely dependent upon the light reflecting value of the ceiling, the increased light reflection obtained from Save-Lite Eg-Shel is an added reason for its selection in this type of work.

Occasionally an interior white having a porous film is required, in order that moisture present in damp walls and ceilings can come through without forcing the paint from the surface. Save-Lite Flat White is a material of this nature and finds important use in packing plants, tunnels and other damp surfaces.

FUME RESISTING MATERIALS

Sherwin-Williams Fume Resisting Save-Lite has been developed to meet special conditions existing in many types of industries. Fume Resisting Save-Lite is manufactured in Gloss, Semi-Gloss and Flat, and is extremely resistant to the ordinary types and concentration of industrial fumes such as Sulphur, Chlorine, etc. Fume resisting finishes are required under the conditions prevailing in rubber plants, tobacco factories, portions of textile mills, and in the food industries.

One of the latest developments of Sherwin-Williams Research Laboratories has been the application of synthetic chemistry in the production of Fume Resisting Interior White finishes. Sherwin-Williams Save-Lite Fume Resisting Gloss and Super Fume Resisting Gloss are two remarkable products, without counterpart, in this field at the present time.

The selection of a suitable Fume Resisting Mill White involves technical considerations, which make it advisable for the architect to obtain suggestions from the paint manufacturer. The Sherwin-Williams Company is glad to cooperate in matters of this kind without obligation in any way.

SPECIFICATIONS FOR SAVE-LITE INTERIOR WHITE PAINT

45 THREE-COAT WORK

For the best possible results on new work, three coats are recommended. Surfaces should be dry and clean.

1. Save-Lite Primer and Sealer
2. Save-Lite Undercoater
3. Save-Lite Flat, Eg-Shel or Gloss

45 A TWO-COAT WORK

It is recognized that in much industrial construction, two-coat work is used in the interest of economy. Save-Lite materials due to their unusual quality are particularly well adapted to this type of work.

On new work and non-porous reasonably dry brick and concrete masonry, Save-Lite Undercoater should be used as the first coat. The superior hiding power of Save-Lite Undercoater and Save-Lite Eg-Shel will materially assist in overcoming the tendency of knots to show through on wood ceilings.

For exceptionally absorbent surfaces such as Celotex, Masonite and other insulating wall boards, the first coat should be S-W Tri-Seal.

When the job requires painting on new plaster, concrete, or brick work without sufficient time for thorough drying, lime burning becomes an important problem. It is impossible to eliminate completely the hazards of painting under such circumstances. If the wall is not too damp, Save-Lite Primer and Sealer used as the initial coat will reduce the danger of lime burning. A neutralizing wash coat of Zinc Sulphate solution prior to painting will also be helpful.

For the final coat, Save-Lite Flat, Eg-Shel, or Gloss may be used.

MOISTURE CONDITIONS

Save-Lite Flat dries to a porous film and will permit the passage of a certain amount of dampness without lifting the film. It may be applied in one or two coats on concrete or brick walls which are too damp for usual painting procedure, or which later may be subject to moisture from the back of the wall such as basements and tunnels. No undercoater or sealer of any kind should be used and both coats of Save-Lite Flat should be reduced from 15 to 25% with Sherwin-Williams No. 74 Reducer.

Roof plank which contains an excessive amount of moisture may be given two coats of Save-Lite Flat, although the normal amount of residual moisture in roof plank will come through Save-Lite Undercoater and Save-Lite Eg-Shel without damaging the work.

REPAINTING OLD WORK

Best results on previously painted surfaces are obtained with two coats, using Save-Lite Undercoater followed with either Save-Lite Eg-Shel or Save-Lite Gloss. Where the old paint remains reasonably well sealed, one spray coat of either Save-Lite Flat, Eg-Shel, or Gloss will give good results, depending upon the color and condition of the walls over which they are applied. If the old paint is extremely porous, a coat of Save-Lite Primer and Sealer should be used followed with Save-Lite Eg-Shel or Gloss.

FUME CONDITIONS

Save-Lite Fume Resisting Flat, Semi-Gloss or Full Gloss, also Save-Lite Kem-Fume-Resisting Gloss, should be applied over Save-Lite Undercoater and Save-Lite Primer and Sealer in two or three coat work in the same manner as specified above for regular Save-Lite finishes. In all cases involving fume resisting materials, a special investigation by a technical representative of the paint manufacturer is suggested to the end that the materials selected will meet all of the conditions involved.

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THE TRUSCON LABORATORIES

Paints, Varnishes, Technical Coatings

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For Truscon Waterproofings, see File Index

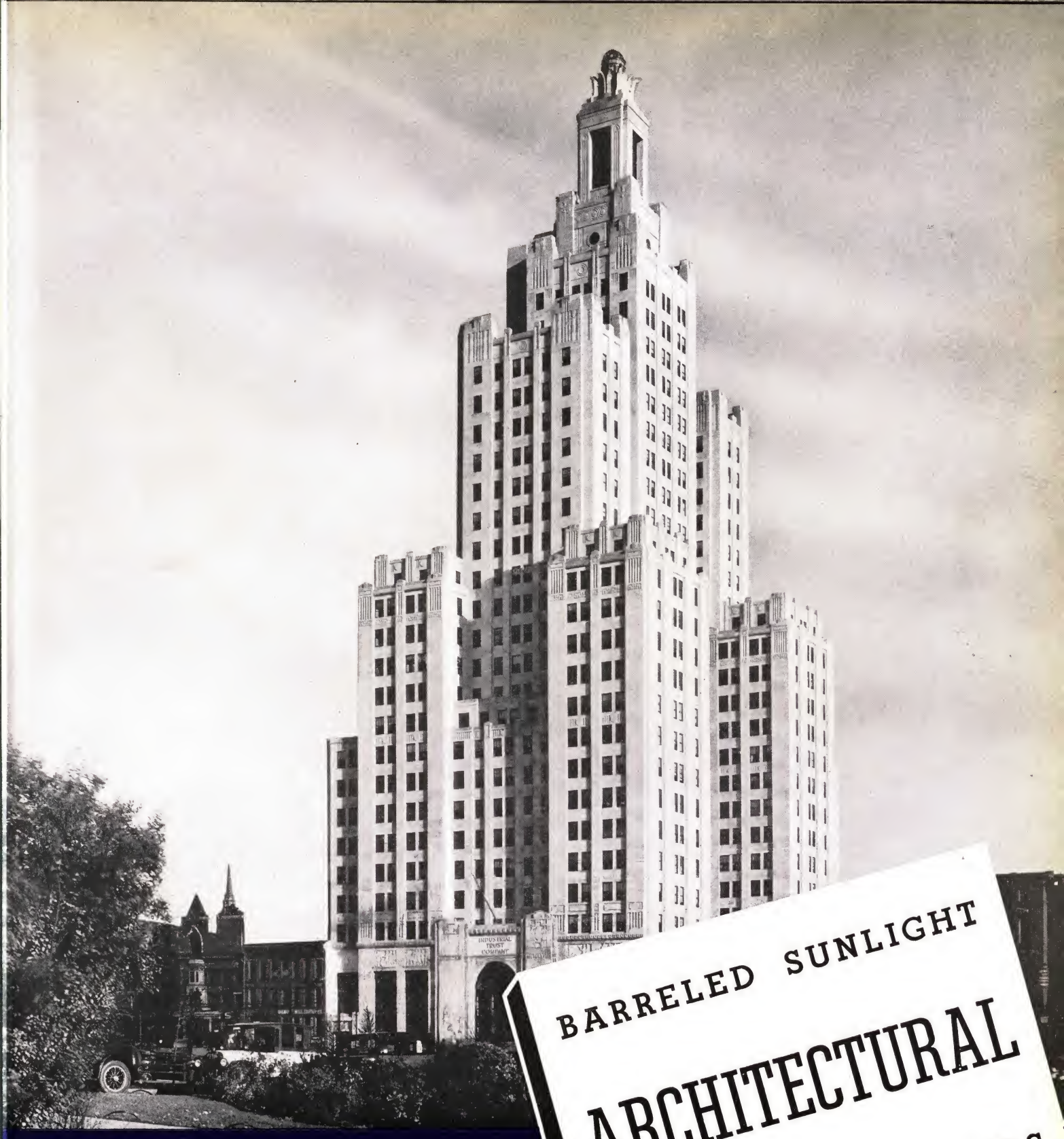
REQUIREMENT	SPECIFY	DESCRIPTION
BRICK & CONCRETE Dampproof Paint	Truscon StoneTex	Well known Tung Oil coating (China Wood Oil) made especially for exterior brick, concrete and stone. Also for stucco, block, asbestos shingles and similar surfaces. Used on many of the country's most famous buildings. White and colors. Approx. 100 sq. ft., 2 coats.
Transparent Dampproofing and Stainproofing for Stone, Concrete or Stucco	Truscon Super-Por-Seal	Stearate type, invisible dampproofing for exterior concrete, brick, stone, stucco. Keeps Bedford stone and marble clean and free from rain stains. Approx. 80 sq. ft. per gal., 2 coats.
Coating for Cracked Stucco, Sills and Horizontal Surfaces	Truscon StoneTex Plastic	Heavy plastic dampproofing furnished in White and colors. Applied $\frac{1}{16}$ in. thick with a trowel. Film surface dries, remaining elastic underneath. Especially for badly cracked stucco or for horizontal surfaces such as sills. 40-50 sq. ft. per gal.
SWIMMING POOLS Cement Paint	Truscon StuccoTex	Hydraulic cement paint—in dry form, mixed with water. White and colors. Applied to wet surface. Withstands water. 100-125 sq. ft. per gal., 2 coats.
Rubber Resin Paint (alkali-proof)	Truscon Alchemik Swimming Pool Coating	Rubber resin enamel—non-saponifiable—withstands water. White and marine colors. Approx. 100-150 sq. ft. per gal., 2 coats.
STEEL Structural or Steel Sash	*Shop, or Prime Coat:* Truscon KromoKote *Field Coats:* Truscon Bar-Ox Inhibitive Coating	Special orange red primer containing high percentage inhibitive pigment. Ideal undercoater for field coats. Approx. 600 sq. ft. per gal. The standard inhibitive coating for shop and field coats. High moisture- and weather-resistance. Approx. 600 sq. ft. per gal.
Rusted Surfaces	Truscon Bar-Ox Formula "97"	Penetrating rust-inhibitor for preparing rusted steel previous to prime coat. Stops rusting under paint film.
Galvanized Iron	Truscon Galvanized Iron Primer	Primer for galvanized iron only. Assures tight adherence of steel paint to galvanizing.
Aluminum Paint Interiors ..... Exteriors ..... Heat-Resisting (stacks).....	Truscon: ....LumeTex "A" ....LumeTex "B" ....LumeTex "C"	LumeTex coatings are composed of liquids especially adapted to properly floating aluminum pigment. Insures highest degree of waterproofness, sheen and finish of aluminum job.
INTERIOR PLASTER Schools, Offices, Hospitals, etc.	*Two-Coat System* Sealer—Truscon Tru-Seal Finish—Truscon Asepticote	**Tru-Seal**—A new type wall sealer for plaster which adheres tightly, though laying on the surface rather than penetrating. Bridges over hair-checked plaster. Eliminates "lime burn" and dead spots. Thoroughly seals, enabling finish to stand out in one coat. May be applied to "green" plaster.
	Three-Coat System Sealer—Truscon Alkabar First Coat—Truscon Asepticote, reduced Finish—Asepticote	**Alkabar**—Penetrating wall sealer for plaster walls. Moisture resistant. Ideal sealer for three-coat job. **Asepticote**—The original washable wall coating. A flat, eggshell finish that washes like tile and gives years of wear. No paint odor while drying—hence, particularly adaptable to hospitals, hotels, apartment houses, for repainting while people are living in the buildings.
INTERIOR CONCRETE Brick and Tile Industrial	*One-Coat* Truscon Wall-Lite One-Coat Spray White	A dense factory white, covers most surfaces in one coat. For brick, plaster, wood, and similar interior industrial surfaces.
	Two-Coat Work First Coat — Truscon Wall-Lite Undercoater Finish — Truscon Wall-Lite (eggshell or gloss)	A Combination primer and sealer for interior plaster, cement, brick or wallboard. Overcomes porosity, providing perfect surface for finish coat of Wall-Lite Enamel, or Eggshell.
FLOORS *Concrete* Painting Interior	Truscon Floor Enamel	Enamel particularly made for above-grade cement floors not subject to dampness. High gloss—excellent hiding and covering—oilproof—may be washed. *(See also Truscon Chart on* FLOOR TREATMENTS *under Waterproofing Section).*
Basements, or Exteriors (coloring and dustproofing)	Truscon Flor-Dye System (a) Flor-Dye (b) Flor-Dye Dressing	Colored penetrating stain and finish. Waterproof and non-saponifiable. May be used on basement or grade cement floors. Also for exterior porch floors exposed to weather.
Wood Gymnasium or School Rooms	Truscon Wood Floor Preservative, No. 384	Preservative—better than an oil or varnish for gym or school room. Not slippery, yet seals pores against stains. Easy to keep clean.
FUME-RESISTING WHITE (For Bakeries, Tobacco and Rubber Plants, Laboratories) also **HUMIDITY RESISTING** (For Dairies, Bottling Plants, Breweries)	Truscon Fume-Saf White (enamel or eggshell)	A White enamel that will not turn dark or discolor when exposed to fumes such as hydrogen sulphide, aniline and the like. Ideal for baking rooms, storage and manufacturing departments of tobacco and rubber establishments—also chemical laboratories. Moisture resistance of this white enamel makes it equally desirable for the bottling rooms of dairies or similar departments where high humidity exists.

Technical Coatings—Truscon Laboratories, with more than 25 years' experience in the industrial field, prescribing coatings for unusual exposures such as acid, alkali, brine, heat, and similar conditions, is in an ideal position to provide specialized coatings to protect buildings and equipment against such exposures.



Trade Mark Reg.

Among these are such well-known materials as Fume-Saf White (listed above)—Kaustikote Alkali Coating—Bar-Ox No. 7001 Acid Resisting Coating—and many others. Describe your particular problem—we shall be glad to forward suggested remedies and specification. No obligation.



BARRELED SUNLIGHT

ARCHITECTURAL

PAINT PRODUCTS



BARRELED SUNLIGHT WILL MEET YOUR *Every* ARCHITECTURAL REQUIREMENT

U. S. GUTTA PERCHA PAINT COMPANY

There is a BARRELED SUNLIGHT Paint for *Every* Type of

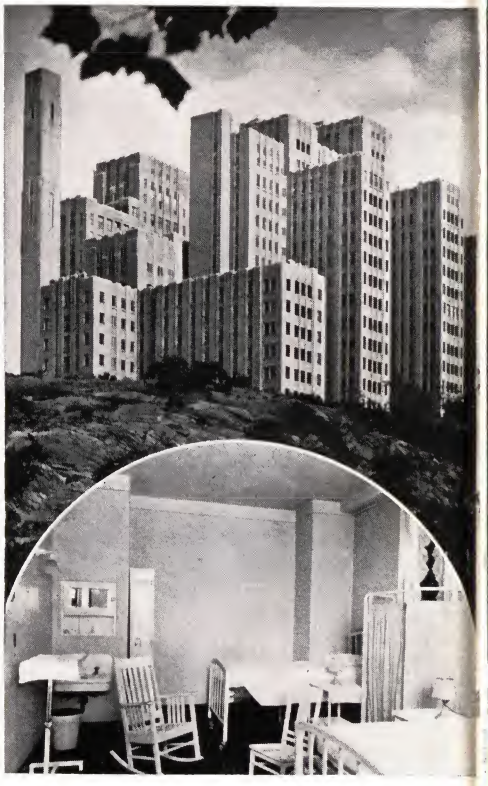
HOTELS



OFFICE BUILDINGS



HOSPITALS



HOTELS — Resorts and Other Like Properties

Variety, a wide color range, and often unusual paint effects are characteristic of hotels and resorts. There is also extreme variety of climatic conditions and harder usage by transient guests to contend with. Wear-resisting, color retaining and washable qualities are of prime importance.

While paint requirements for hotels and resort buildings extend from the needs of a modest small town establishment to the most elaborate metropolitan hotel, Barreled Sunlight Paints will do the job. These paints have been specified for this work again and again, and they always give complete satisfaction.

This fact enables you to specify Barreled Sunlight with full assurance that it will meet every requirement of your job.

OFFICE BUILDINGS and other Commercial Structures having the Same Requirements

Because painted surfaces are the most conspicuous feature of office and commercial buildings, their appearance and condition play an important part in acquiring new tenants and retaining present ones.

Quick drying advantages, colors that last, illuminating qualities that give maximum reflection without glare, are a few of the demands placed upon a paint for commercial interiors. For many years Barreled Sunlight Paints have been selected for office and commercial buildings. Their full color range pleases the architect and their low comparative cost, through maximum spreading qualities and lower application time, appeals to the owners and operators.

The proof that these products give the service claimed for them is that Barreled Sunlight Paints have been chosen repeatedly for many such buildings throughout the country.

HOSPITALS — Institutions, Sanitariums, Schools and Similar Buildings

A number of unusual requirements are essential in a paint for hospitals, institutions, schools and similar buildings. Sanitary regulations call for regular and frequent washings. In whites and related colors a high reflection value must be retained. Permanent beauty, under excessive abuse, is a prime factor in a paint for schools.

Architects who have used Barreled Sunlight Paint for these buildings know that it will stand up under the excessive wear and tear of frequent washings. They have proven that it will take the abuse of school conditions.

Of growing importance are the recent researches in the functional and psychological applications of color. In the van of this movement are the hospitals and other curative establishments. Barreled Sunlight, anticipating this need, has developed a wide range of colors specifically adapted to these advanced conditions.

Practical application has substantiated Barreled Sunlight's claims that it will retain its color for long periods, give maximum coverage, and prove wholly satisfactory for hospital and school requirements.

U. S. GUTTA PERCHA PAINT COMPANY,

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nterior or Exterior . . . . in a *Full Color Range*

BARRELED SUNLIGHT *Products*

FOR INTERIOR AND EXTERIOR PAINTING

APARTMENTS



HOMES



APARTMENTS — Resident Hotels and the Like

Your apartment house painting contracts have a characteristic feature found in few other jobs. They call for either a large volume of uniform color, or repeated short order jobs, where money and time-saving is of paramount importance. On both occasions, cost is a first consideration.

Washability, life expectation and low maintenance costs are weighed carefully. While color is not necessarily a prime factor here, the one selected must be of guaranteed uniformity.

Architects, through experience, have learned that paints, carrying the same price and claims, do not give equal performance. Satisfaction in use is the only proof. Ranking architects who have chosen Barreled Sunlight Paint for apartments and residential hotels report substantial savings in paint and labor costs.

This is because, in addition to the merits of the paint itself, Barreled Sunlight has adhered closely to the instructions of the architect and delivered paint ideally suited to the specific job requirements.

HOMES — From the Mansion to the Small Cottage

For several good reasons, the recent acceleration in home building is consuming a great volume of Barreled Sunlight Paints.

Paint for home decoration calls for the same exacting qualities necessary to any other type of building, and the price of the finished job receives the closest possible scrutiny. On this point Barreled Sunlight will meet your needs.

The reason for this is found in a series of impartial tests that have proven themselves in practice. These tests (available on request) demonstrated that Barreled Sunlight Paints averaged 25% greater coverage than three other paints, under the same conditions. Other reasons why you can specify Barreled Sunlight for homes are that you can obtain the fullest color range, special colors at reasonable cost and a list of finishes noted for quick drying and color retention qualities.

19 DUDLEY ST., PROVIDENCE R. I.

The day of "One Paint for Everything" is gone. The right paint in the wrong place is no more satisfactory than the wrong paint in the right place.

Below is a list of Barreled Sunlight Products, together with a brief description of each that will enable you to specify the right paint in the right place.

Directions for using Barreled Sunlight Products will be found on individual circulars, and on labels of every package. If you wish to have these, or other product information write:

Architectural Department

U. S. GUTTA PERCHA PAINT COMPANY
PROVIDENCE, RHODE ISLAND

INTERIOR PAINTS

PRIMING COATS

Enamel Undercoat

For use where extra smoothness is essential on woodwork, trim, etc. Contains extra vehicle to give smooth tight film. Dries hard overnight. In white only but may be tinted on job. Five gallons and over tinted at factory without charge.

Undercoat

For first and intermediate coat—new or old work—on wood or metal. This is a rugged heavy duty primer that is thinned as job warrants. White only but may be tinted on job. Five gallons or over tinted at factory without charge.

Granolith

An alkali and lime resisting material for first coat work on new or unpainted concrete, brick, cement, plaster and similar porous surfaces. Made heavy and rugged to be mixed on job with No. 65 Reducing Oil. Test areas are recommended. Mixture will bond tightly to surface. Made in white only but may be tinted on job. Five gallons or over tinted at factory without charge.

No. 65 Reducing Oil

Used for reducing Granolith (see above). It is a processed suction sealer acting as both binder and sealer to insure uniformity of finish coat.

Plaster Sealer

A pigmented interior priming and sealing coat essentially for all unpainted plasters. It is as resistant to lime, alkali, and moisture as any sealer can be. Also used with Interior Undercoat on plasters and with Flat Wall Finish for porous surfaces. It covers 700 to 900 square feet per gallon. Made in white only but can be tinted on job. Five gallons and over tinted at factory without charge.

INTERIOR PAINTS

FINISHING COATS

Gloss Enamel

A general purpose high-grade enamel at reasonable cost for surfaces where a smooth, dirt resisting, easily cleaned and durable finish is required. Ideal for large areas. Possesses a spreading capacity of 350 to 500 square feet per gallon. Made in white only but may be tinted on job. Five gallons or over tinted at factory without charge.

Semi Gloss Enamel

A product similar to Gloss Enamel except that it dries with less sheen.

Quick Drying Form Gloss Enamel

A finishing coat for use where quick and hard drying is of prime importance. It gives a high gloss tough finish without the brittleness found in most quick drying enamels. This enamel has excellent hiding power and "levels" out smoothly under the brush. Made in ten colors—Ivory, Azure Blue, Tangerine, Colonial Ivory, Tan, Jade Green, Yellow, Light Blue, Nile Green, and Chinese Red.

Quick Drying Form Eggshell Enamel

A finishing coat for wood or metal trim. Dries to a tough enamel finish. Made in white only. Five gallons or over tinted at factory without charge.

Chemic Enamel

A special finish designed to resist discoloring action of chemical fumes and dry heat. Produces a smooth, white, non-porous finish. Chemic Enamel is made in gloss, eggshell and flat finish in white only and should not be tinted.

Extra Heavy Eggshell

An all-oil rugged finish, heavy in body and must be thinned on job, and highly desirable for large areas where full gloss is not required. Speaking conservatively it will cover 400 to 600 square feet per gallon. It can be washed and scrubbed frequently without harm though not, naturally, as much as gloss enamel. Made in white only but may be tinted on job. Five gallons or over tinted at factory without charge.

Extra Heavy Flat

Similar in form, use and application to Extra Heavy Eggshell except that it dries, with less sheen. Made in white only but may be tinted on job. Five gallons or over tinted at factory without charge.

Dado Paint

Dado Paint is Barreled Sunlight Interior Gloss Enamel furnished in all standard colors. Five gallons or over will be color matched at factory, from your samples, without charge.

Partial Gloss Wall Finish

For use where washing is frequent and regular, yet a full gloss paint is not desirable. Finger prints, smudges, stains, pencil marks can be removed again and again without injury to film. Good for large areas as it flows easily and "levels" readily. May be applied as received, though can be thinned. In practice it has a spreading capacity of 500 to 600 square feet per gallon, depending on the surface. Made in eight colors—Old Ivory, Cream, Light Green, Warm Gray, Deep Buff, Buff, Light Gray, Light Blue, and White that may be tinted on job. Five gallons or over, tinted at factory without charge.

Stippling Gloss Wall Finish

Similar to Partial Gloss Wall Finish in stippling form.

Flat Wall Finish

A new type of flat finish that produces major savings in paint and labor. It holds a "wet edge" for a surprisingly long time and does away with laps and flashes. An unmatched "slip" speeds the painter without hurrying him. It dries to a smooth satin-like finish which resists dust and dirt. It is as washable as is possible for any flat finish to be.
On a properly sealed surface, it will cover 700 to 900 square feet per gallon without loss of opacity. Made in eight colors—Ivory, Buff, Pale Blue, Caen Stone, Light Cream, Warm Gray, Pale Green, Deep Buff—and white, that may be tinted on the job. Five gallons or over tinted at factory without charge.

Eggshell Wall Finish

Same as Flat Wall Finish except in degree of sheen.

Stippling Flat Wall Finish

Barreled Sunlight Flat Wall Finish in stippling form.

EXTERIOR PAINTS

PRIMING COATS

Undercoat

A linseed oil paint made to penetrate and bond to the surface, to be used for all coats except finishing coat on new or old work. Dries nearly flat with ample "tooth." Its heavy pigmentation produces a harder drying film than the more elastic finishing coat. This feature is most important for a long wearing job. Made in white only (but if colored finishing coats are used it should be tinted to same color) but may be tinted on job. Five gallons or over tinted at factory without charge. Also made in green for use under Outside Barreled Sunlight Greens.

EXTERIOR PAINTS

FINISHING COATS

White and Colors

A ready-for-use all-oil vehicle finish combining the three pigments which best withstand outside exposure. It represents the highest quality obtainable and is offered solely on that basis.
It gives the richest durable finish and wears very slowly. This product is easy working, has outstanding hiding qualities and gives a depth of finish that is unequalled. It is made in twelve standard colors—and white that can be tinted on the job. When tinted the colors are sharp and clear. Five gallons and over tinted at factory without charge.

Greens

Exceptionally high-grade ready-to-use Greens, containing finely ground pigments thoroughly dispersed. These paints have excellent drying qualities, clearness of tone and freedom from tackiness. Specially recommended for all exterior trim. Made in six greens—Chatham, Beverly, Nantucket, Belfast, Pinehurst, and Newport.

Granolith

Made for exterior painting of stucco, cement, and concrete and brick. It seals the surface against moisture and deterioration, and eliminates the streaking and spotting that disfigure stucco. It will withstand all climatic conditions. Made in white only but can be tinted on job. Five gallons or over tinted at factory without charge.

VARNISHES

Floor Varnish

A floor varnish of highest quality, made to withstand hard wear on interior floors.

Copalite Varnish

The highest grade varnish for all interior work, so tough and durable that it is frequently used on interior floors.

OTHER PRODUCTS

Porch and Floor Enamel

Specially prepared to withstand heavy wear and can be washed repeatedly without injury to the finish. Suitable for new or old work and gives a tough, elastic and high lustre finish. Made in eight shades — Battleship Gray, Dark Gray, Tile Red, Indian Red, Spruce, Linoleum Brown, Antique Brown, Green, and Black in full gloss finish only.

Acoustolight

A decorative and protective finish for acoustical surfaces that scarcely affects their efficiency. Tinted to match any color scheme. Five gallons or over tinted at factory without charge.

Rice's Red Oxide Anti-Corrosive Primer

For all unpainted iron and steel. It acts as a prevention against corrosion.

Rice's Machine Paints

Piping Enamels

Specifications For Barreled Sunlight Products

SELECTION OF THE CORRECT BARRELED SUNLIGHT PAINT IS MADE QUICK AND EASY BY USING INDEX AND FOLLOWING SPECIFICATIONS . . .

HOW TO USE SPECIFICATION WORKSHEETS

1. Jot down numbers of paragraphs selected from Work Sheets as indicated opposite.

2. Have them copied out in Full as Shown Below—The Result Will be a Complete Specification.

1

Materials
2, 2(a), 2(b), 2(c)
Equipment
3(a), 3(b), 3(d)
Interior Surfaces
14(a), except hallways on first floor
14(d), 14(f)

2

MATERIALS:

Although the honest and capable contractor can produce good results when "semi-paste" paints are mixed on the job,—such procedure necessitates working out exact formulas to fit the conditions of the project in hand, specifying these formulas in detail and closely supervising their compounding and subsequent application. Substitutions, malpractice and dishonest adulteration may not evidence itself until well after the paint job has been entirely completed and the Contractor has left the job.

Ready-mixed paints as manufactured by the U. S. Gutta Percha Paint Company have all the advantages of semi-paste products with none of the disadvantages attending their use on the job.

Barreled Sunlight products, intelligently selected, may be expected to give entire satisfaction, and good results will be further assured if the painting contractor is selected on a basis of craftsmanship and ability to produce satisfactory work rather than on the sole basis of competitive bidding.

All materials used shall be manufactured by the U. S. Gutta Percha Paint Company (Providence, R. I.) or as approved by them for use in connection with their products and shall be delivered in the original containers and packages bearing the manufacturer's name and brand with labels intact and seals unbroken.

All materials shall be ordered sufficiently in advance and shall be delivered in sufficient quantities to be on the job when needed.

No claim by the Contractor concerning the unsuitability of any material specified or his inability to produce first-class work with same will be entertained unless such claim is made in writing to the Architect before the contract is signed.

EQUIPMENT:

Spraying equipment shall be of type and capacity best adapted to the work, subject to the Architect's approval.

INDEX TO SPECIFICATIONS LISTED BY SURFACES

INTERIOR SURFACES

SURFACE	PAINTED		ENAMELED	
	Pg.	Section	Pg.	Section
Acoustical	10	19		
Asbestos Cement	8	14	10	24
Brick	8	14	10	24
Canvas (as plaster)	9	17	10	23
Canvas (see 11-27)				
Cement (asbestos)	8	14	10	24
Cement (floor)	11	26		
Cement Plaster	8	14	10	24
Enamelled			10	20
Equipment (machine)	11	31		
Floor (cement)	11	26		
Floor (painted)	11	26		
Floor (unpainted)	11	26		
Glazed			11	28
Gypsum Plaster (as hard plaster)	9	17	10	23
Iron and Steel	8	15	10	22
Machine	11	31		
Metal	8	15	10	22
Metal (ornamental)	8	15	10	22
Metal (misc.)	8	15	10	22
Metal Radiators	11	30		
Steel and Iron	8	15	10	22
Structural Metal	8	15	10	22
Painted	10	20		
Pipe	11	29		
Plaster (hard)	9	17	10	23
Plaster (smooth)	9	17	10	23
Plaster (cement)	8	14	10	24
Radiator	11	30		
Wall Board (all types)	9	18		
Wood Floor (varnished)	11	32		
Wood Trim (varnished)	11	32		

EXTERIOR SURFACES

SURFACE	PAINTED	
	Pg.	Section
Asbestos Cement	8	13
Brick	8	13
Cement	8	13
Cement Plaster	8	13
Clapboard (wood)	7	8
Doors (metal)	7	10
Fence (wood)	7	8
Flashing (underside)	8	11
Galvanized	7	10
Machine	7	10
Metal	7	10
Painted	7	9
Sash (metal)	7	10
Structural iron	8	12
Stucco	8	13
Trim (wood)	7	8
Wood (new)	7	8
Wood (unpainted)	7	8

ARCHITECT'S SPECIFICATIONS

It is for our mutual interest that the users of Barreled Sunlight Products obtain satisfactory results, which these products are so easily capable of producing. We submit, therefore, the following recommendations. "Directions for Using" and "Specifications" are offered as helpful recommendations but are not to be construed as guarantees because application, surface and climate conditions are, obviously, beyond the manufacturer's control. **Any surfaces not covered, inquire Architectural Department, U. S. Gutta Percha Paint Co., Providence, R. I.**

To simplify specification-writing for Barreled Sunlight products, yet insure satisfactory results, data for both new and repainting jobs is included.

Items have been grouped in such a manner that any typist may reproduce the complete specification in perfect order after the numbers and letters have been designated. Only such matter as deals specifically with individual jobs need be written out. (See instructions—Page 5.)

Notes in italics are added to clarify the brief wording and arrangement, and are not to be included in the finished specification.

The following clauses have not been included:

General Conditions	**Scaffolds**
Work Done by Others	**Protection of Other Work**
Work Required	**Workmanship**

It has been assumed that the architect has his own form for these, and suitable to his local conditions. If required the U. S. Gutta Percha Paint Company will supply copies.

1 PREPARATION OF SURFACES

(Use (a) to (e) for new work and (f) to (r) for modernization work)

(a) All surfaces before priming or painting shall be thoroughly cleaned of all dirt, oil, grease, rust, scale and other foreign matter. This cleaning shall be done with sandpaper steel scraper or wire brushes as necessary.

(b) All sap wood and knots shall receive a thin coat of shellac before priming and all nail holes and imperfections shall be puttied up as soon as the first priming coat of paint has become hard and dry.

(c) Where new plaster is to be painted and has not been properly aged it shall be treated before priming with a solution of 2 lbs. Zinc Sulphate in one gallon of water, allowed to thoroughly dry and be brushed free of any loose crystals. Before painting all cracks shall be filled with plaster of paris or patching plaster.

(d) New brick work shall have at least a week in dry weather before being painted.

(e) If surfaces are not in proper shape for painting, the Contractor shall notify the Architect before proceeding with the work; otherwise, he will be held responsible for any defect caused by improper surfaces. The application of the first coat of paint by the Contractor shall be construed as an acceptance by him of the responsibility of the base.

(Use (f) to (r) for modernization work)

(The condition of existing paint or finish will determine whether it is a suitable base for the new work or must be completely removed.)

(Where existing paint or finish is to be completely removed, (use (f) to (l) and where it is suitable as the base for the new work use (m) to (r).)

(f) The Contractor shall completely remove, down to the wood, metal or plaster as the case may be, all existing paint or finish on (Specify items, such as,—wood trim, walls, ceilings, floors; etc.)

(g) throughout (Specify rooms and areas.)

(Use (h) for interior work)

(h) All finish and paint shall be removed with paint remover, the surface sanded smooth, washed with naphtha and allowed to dry thoroughly.

(Use (i) for exterior work)

(i) All paint shall be carefully burned off from all metal and wood without charring, the surfaces sanded smooth and wiped clean of all dust.

(Use (j) for removing paint from plaster)

(j) Paint shall be removed from plaster with paint remover and the surfaces allowed to dry thoroughly. All plaster cracks shall then be cut or scored out, completely filled with plaster of paris or prepared patching plaster, finished smooth, sandpapered and given a coat of Barreled Sunlight Plaster Sealer.

(Use (k) and (l) in applying new paint or enamel over existing wood after the removal of old finish as in (i) above.)

(k) After existing paint has been completely removed, wood surfaces shall be thoroughly washed with an approved detergent to remove all grease, dirt and wax.

(l) shall be allowed to dry out thoroughly; shall be thoroughly sandpapered to a smooth surface, and wiped clean of all dust.

(Use (m) to (r) where existing paint or enamel is to be used as a base for new work.)

(m) All existing paint and finish on (*Specify items, such as,—wood trim, plaster, etc.*)

(n) throughout (*Specify rooms and areas.*)

(o) shall be thoroughly washed with an approved detergent to remove all grease, dirt and wax; shall be allowed to dry out thoroughly and shall be wire-brushed to remove all loose paint.

(p) shall be thoroughly sandpapered to a smooth surface, and wiped clean of all dust.

(q) All abrasions in existing paint and enamel which is to be painted shall be neatly touched up and rubbed smooth.

(r) All cracks in existing painted plaster surfaces which are to be painted shall be cut or scored out, completely filled with plaster of paris or prepared patching plaster, finished smooth and given a coat of Barreled Sunlight Plaster Sealer.

2 MATERIALS

(Ready-mixed paints as manufactured by the U. S. Gutta Percha Paint Company have all the advantages of semi-paste products with none of the disadvantages.
Although the capable contractor can produce good results with semi-paste paints, exact formulas, close supervision of mixing and application are needed. Substitution, malpractice and adulteration may not be obvious until after the job is completed.
Barreled Sunlight products may be expected to give entire satisfaction if applied as suggested. Good results will be further assured if the contractor is chosen on the basis of ability and craftsmanship.)

(a) *All materials* used shall be manufactured by the U. S. Gutta Percha Paint Company (Providence, R. I.), or as approved by them for use in connection with their products and shall be delivered in the original containers and packages bearing the manufacturer's name and brand with labels intact and seals unbroken.

(b) All materials shall be ordered sufficiently in advance and shall be delivered in sufficient quantities to be on the job when needed.

(c) No claim by the Contractor concerning the unsuitability of any material specified or his inability to produce first-class work with same will be entertained unless such claim is made in writing to the Architect before the contract is signed.

(d) *Oil* shall be pure thoroughly settled linseed oil, either raw or boiled as required to produce the best results, and shall conform to the Standard Specifications D234-28 and D260-33 respectively of the American Society for Testing Materials.

(e) *Turpentine* shall be the best grade of pure gum spirits of turpentine conforming to Tentative Specifications D-13-33T of the American Society for Testing Materials.

(f) *Driers* shall be the product of an approved manufacturer and shall conform to the Standard Specifications No. 20 of the United States Government.

(g) *Putty* shall be either whiting putty or white lead whiting putty as required to produce the best results and shall conform to Standard Specifications D317-33 of the American Society for Testing Materials.

3 EQUIPMENT

(a) Spraying equipment shall be of type and capacity best adapted to the work, subject to the Architect's approval.

(b) Compressors shall be motor driven, shall be set in locations designated by the Architect and temporary rigid piping shall be installed so as not to conflict with the work of other trades.

(c) All paint-carrying flexible hose, nozzles and equipment shall be thoroughly cleaned after each day's work and maintained in first-class working condition.

(d) All brushes shall be new and of the best grade, of sizes and types best adapted for the particular work.

4 SAMPLES

(a) Before any materials are ordered or delivered at the building, the Contractor shall submit triplicate panels to the Architect showing all colors, textures and finishes required and obtain his approval of same.

(b) Each panel shall be 8½ by 11 inches in size, shall be clearly marked on the back with the name of the Contractor, the brand names of the paints used on the panel, the name of the building and the date.

(c) One of each of the approved samples will be returned to the Contractor, one sent to the Manufacturer and one filed in the office of the Architect.

(d) All finished work shall match exactly approved samples in color, texture and finish.

5 COLORS

Ready-to-apply-paints of the required color and shade should be used whenever possible; otherwise, paint requiring the least additional pigment should be applied. In this case, to insure uniform results, a sufficient amount of the final coat to cover the room area should be mixed at one time.

(a) The reflecting surfaces of all metal light reflectors shall be painted white.

(b) Rebates for reception of glass in doors, sash, transoms and mirrors shall be painted black.

(c) The interior of all supply and return ducts which are visible back of register faces shall be painted black.

(d) The colors for all other items shall be as selected by the Architect.

(e) In all cases undercoats shall match finish coats color and shade.

(f) Where paints or enamels are to be tinted on the job, Barreled Sunlight Colors-in-Oil shall be used and, for the final coat, sufficient paint to cover all surfaces within each different room or area shall be made up at one time.

6 GUARANTEE

(a) The Contractor, at the completion of his work, shall furnish a written guarantee warranting all work against becoming defective for a period of one year from the date of its acceptance and binding himself to repair or replace without cost to the Owner any defects developing within this time due to failures in materials, workmanship or methods of application.

7 PRIMING AND BACKPAINTING WOOD

(a) All door and window frames, wood sash and sills shall be primed all over, upon delivery at the building.

(b) The unexposed back and edges of all interior woodwork coming in contact with plaster or masonry shall be given one coat Interior Barreled Sunlight Undercoat as soon as delivered on the premises.

(c) The upper and lower edges of all wood doors shall be painted two coats Barreled Sunlight Undercoat as soon as they have been fitted and are ready to be hung.

(d) The back and unexposed edges of all finished wood flooring shall be painted as soon as delivered at the building with one coat Barreled Sunlight Undercoat.

(Do not use (d) for floorings set in mastic.)

PAINTING EXTERIOR SURFACES

8 OVER EXTERIOR NEW OR UNPAINTED WOOD

(Specify items to be painted as in (a).)

(a) All wood trim, clapboards and other wood work

(b) shall be properly prepared as specified and shall be given *(Specify number of coats)*

(c) one coat

(d) two coats

(e) of Outside Barreled Sunlight Undercoat followed by one coat of Outside Barreled Sunlight Finish Coat in color selected.

(f) All temporary exterior wood work, such as fence, office and similar items *(but not signs)* shall be given one coat of Outside Barreled Sunlight Finish Coat in color selected.

9 OVER EXTERIOR EXISTING PAINT

(a) All existing painted surfaces throughout the exterior of the building shall be properly prepared as specified and shall be painted

(For ONE COAT work use (b))
(For TWO COAT work use (c))

(b) one coat of Outside Barreled Sunlight Finish Coat in color selected.

(c) one coat of Outside Barreled Sunlight Undercoat followed by one coat of Outside Barreled Sunlight Finish Coat in color selected.

10 PAINTING EXTERIOR METAL WORK

(a) All exterior metal surfaces

(b) also including the exterior face and edges of all metal doors

(c) but excepting all *(Specify metals not to be painted, such as,—aluminum, copper, bronze, zinc, lead, etc.)*

(d) shall be properly prepared, painted one coat Rice's Red Oxide Anti-Corrosive Primer and *(Specify number of coats)*

(e) one coat

(f) two coats

(g) of Outside Barreled Sunlight Undercoat followed by one coat of Outside Barreled Sunlight Finish Coat in color selected.

(Use (h) for galvanized iron which has not been previously primed or otherwise painted.)

(h) Galvanized iron shall be treated with a wash coat of 4 ozs. of copper sulphate dissolved in a gallon of water before priming coat is applied.

11 PAINTING THE UNDERSIDE OF SHEET METAL FLASHINGS, Etc.

(The following clauses should be incorporated in their proper place in the specifications for roofing.)

(a) The underside of all sheet metal (Specify items, such as,—flashings, counter flashings, roofings, etc.)

(b) shall be painted one coat Barreled Sunlight Red Oxide Anti-Corrosive Primer before erection.

12 PAINTING STRUCTURAL STEEL

(a) All structural steel after erection

(b) excepting in places where poured concrete comes in direct contact with the metal

(c) shall be given (*Specify number of coats*)

(d) coats of Barreled Red Oxide Anti-Corrosive.

13 PAINTING EXTERIOR CEMENT PLASTER, STUCCO, ASBESTOS-CEMENT, CONCRETE AND BRICK:

(a) All exterior
(b) cement plaster
(c) stucco
(d) asbestos-cement
(e) concrete
(f) brick
(New and unpainted concrete, brick, cement-plaster, stucco, asbestos-cement and similar surfaces are porous and must be properly sealed to insure the uniform appearance of the finish coat. Because such surfaces vary so widely in the degree of porosity, it is impractical to put out in "ready-for-use" form one material to care for all conditions. (Use (g) where required to neutralize the alkali in mortars)

(g) and the entire Surface shall be washed with a Zinc Sulphate solution (*2 lbs. Zinc Sulphate crystals per gallon of water) and allowed to dry out thoroughly.*

(h) shall be painted with a mixture of Outside Barreled Sunlight Granolith and Rice's No. 65 Reducing Oil in the proportions that shall be decided by painting several small test areas of different mixtures of Granolith and Reducing Oil and adopting the mixture which gives the best results.

(i) This priming coat shall be painted with (*use either (j) or (k).*)
(In the case of extreme porosity another coat of Granolith mixed with Reducing Oil should be applied as in (j). Under average normal conditions the first priming coat of this mixture can be followed with one coat of the finish material as in (k).)

(j) a coat of Outside Barreled Sunlight Granolith reduced with one quart of Rice's No. 65 Reducing Oil to each gallon of paint and then to proper application consistency with turpentine or pure mineral spirits; and this, when dry, shall be painted with (use (k))

(k) one coat Outside Barreled Sunlight Granolith in color selected.

(l) Prior to the application of the priming coat on brickwork, all cracks in mortar joints shall be pointed up.

PAINTING INTERIOR SURFACES

14 PAINTING INTERIOR CEMENT PLASTER, ASBESTOS-CEMENT, CONCRETE AND BRICK:

(For hard or smooth finish plaster see Section 17)

(a) All interior
(b) cement plaster
(c) asbestos-cement
(d) concrete
(e) brick
(New or unpainted cement plaster, asbestos-cement, concrete, brick and similar surfaces are porous and must be properly sealed to insure the uniform appearance of the finish coat. Because such surfaces vary so widely in the degree of their porosity, it is impractical to put out in "ready-for-use" form one material which will take care of all conditions)

(f) shall be primed with a mixture of Interior Barreled Sunlight Granolith and Rice's No. 65 Reducing Oil in the proportions that shall be decided by painting several small test areas of different mixtures of Granolith and Reducing Oil and adopting the mixture which will give the best results.

(g) This priming coat shall be painted with (*use either (h) or (i).*)
(In the case of extreme porosity another coat of Granolith mixed with Reducing Oil should be applied as in (h). Under average normal conditions the first priming coat of this mixture can be followed with one coat of the finish material as in (i).)

(h) one coat of Interior Barreled Sunlight Granolith reduced with one quart of Rice's No. 65 Reducing Oil to each gallon of paint and then to proper application consistency with turpentine or pure mineral spirits; and this, when dry, shall be painted with (*use (i)*).

(i) one coat Interior Barreled Sunlight (*Specify kind selected from (j) to (q).*)

(j) Interior Gloss.

(k) Quick Drying Form Gloss.

(l) Semi-Gloss.

(m) Extra Heavy Eggshell.

(n) Extra Heavy Flat.
(Use the following for decorative purposes requiring lighter duty paints.)

(o) Flat Wall Finish.

(p) Eggshell Wall Finish.

(q) Partial Gloss Wall Finish.
(Use Chemic Enamel for finishing coat where the paint must resist heat and fumes.)

(r) Chemic Enamel Gloss.

(s) Chemic Enamel Eggshell.

(t) Chemic Enamel Flat.

(u) Prior to the application of the priming coat on brickwork, all cracks in mortar joints shall be pointed up.
(Use (v) where required to neutralize the alkali in mortars)

(v) and the entire surface shall be washed with a Zinc Sulphate Solution (*2 lbs. Zinc Sulphate Crystals per gal. of water*)

15 PAINTING INTERIOR METAL

(Give a complete list of all metal items which are to be painted or specify "all metal surfaces" as in (a) and list exceptions.)
(Include here painting inside of metal sash if required.)

(a) All metal surfaces throughout the interior of the building except (*Specify attics, basements. boiler rooms, etc., exceptions by locations, such as,—or by items, such as,—pipes, copper, nickel plate, aluminum, medicine cabinets, etc.*)
(Omit (b) if metal has been primed before shipment and the priming coat is satisfactory.)

(b) shall be primed with one coat Rice's Red Oxide Anti-Corrosive Primer and

(c) shall be painted with
(For TWO COAT work use (d))
(For THREE COAT work use (e))

(d) one coat of Barreled Sunlight (*Specify kind of undercoat selected from (f) or (g)*, followed by one coat of Interior Barreled Sunlight selected from (h) to (r) in color selected.)

(e) two coats of Barreled Sunlight (*Specify kind of undercoat selected from (f) or (g)*, followed by one coat of Interior Barreled Sunlight selected from (h) to (r) in color selected.)

(f) Interior Undercoat
(Use (g) where smoothness of finish and entire absence of brush marks are of utmost importance.)

(g) Enamel Undercoat.

(h) Interior Gloss.

(i) Quick Drying Form Gloss.

(j) Semi-Gloss.

(k) Extra Heavy Eggshell.

(l) Extra Heavy Flat.
(Use the following for decorative purposes requiring lighter duty paints:)

(m) Flat Wall Finish.

(n) Eggshell Wall Finish.

(o) Partial Gloss Wall Finish.
(Use Chemic Enamel for finishing coat where the paint must resist heat and fumes.)

(p) Chemic Enamel Gloss.

(q) Chemic Enamel Eggshell.

(r) Chemic Enamel Flat

(s) Galvanized iron shall be treated with a wash coat of 1 lb. of copper sulphate dissolved in a gallon of water before priming coat is applied.

16 PAINTING INTERIOR WOOD WORK

(Give a complete list of all wood items to be painted or specify "all surfaces" as in (a) and list exceptions.)

(a) The exposed surfaces of all wood work in all rooms and occupied areas in the building except *(Specify exceptions or where wood is to be enameled, etc.)*

(b) shall be painted *(Specify number of coats)*
(For TWO COAT work use (c))
(For THREE COAT work use (d))

(c) one coat of Barreled Sunlight *(Specify kind of Undercoat from (e) or (f))*, followed by one coat of Interior Barreled Sunlight from (g) to (n) in color selected.

(d) two coats of Barreled Sunlight *(Specify kind of Undercoat selected from (e) or (f))* followed by one coat of Interior Barreled Sunlight selected from (g) to (n) in color selected.

(e) Barreled Sunlight Undercoat
(Use (f) where smoothness of finish and entire absence of brush marks are of utmost importance.)

(f) Barreled Sunlight Enamel Undercoat.

(g) Interior Gloss.

(h) Quick Drying Form Gloss.

(i) Semi-Gloss.

(j) Extra Heavy Flat.

(k) Extra Heavy Eggshell.
(Use chemic enamel for finishing coat where paint must resist heat and fumes)

(l) Chemic Enamel Gloss.

(m) Chemic Enamel Eggshell.

(n) Chemic Enamel Flat.
(For decorative use requiring Flat Wall Finish (s), Partial Gloss Wall Finish (t), or Eggshell Wall Finish (u) use (o) or (p))
(For TWO COAT work use (o))
(For THREE COAT work use (p))

(o) One coat of a mixture of two quarts of Barreled Sunlight Plaster Sealer to each gallon of Barreled Sunlight Flat Wall Finish (s) or Eggshell Wall Finish (u) thinned to brushing consistency with turpentine or mineral spirits and one coat of Barreled Sunlight Flat Wall Finish (s) or Eggshell Wall Finish (u) in color selected.

(p) Two coats of a mixture of two quarts of Barreled Sunlight Plaster Sealer to each gallon of Barreled Sunlight Flat Wall Finish (s) or Eggshell Wall Finish (u) thinned to brushing consistency with turpentine or mineral spirits, followed by one coat of Barreled Sunlight Flat Wall Finish (s) or Eggshell Wall Finish (u) in color selected.
(For decorative use requiring Partial Gloss Wall Finish (t) use (q) or (r))
(For TWO COAT work use (q))
(For THREE COAT work use (r))

(q) One coat of Barreled Sunlight Partial Gloss Wall Finish (t) thinned with at least ½ pint of turpentine or mineral spirits per gallon of paint, followed by one coat of Barreled Sunlight Partial Gloss Wall Finish (t) thinned with mineral spirits to brushing consistency, in color selected.

(r) One coat of Barreled Sunlight Enamel Undercoat thinned with one pint of turpentine or mineral spirits per gallon of paint and one coat of Barreled Sunlight Partial Gloss Wall Finish (t) thinned with at least ½ pint of turpentine or mineral spirits, per gallon of paint, followed by one coat of Barreled Sunlight Partial Gloss Wall Finish in color selected.

(s) Flat Wall Finish.

(t) Partial Gloss Wall Finish.

(u) Eggshell Wall Finish.

17 PAINTING INTERIOR HARD OR SMOOTH FINISH PLASTER

(For Interior Cement Plaster see Section 14)

(a) Throughout all rooms and areas of the building except *(Specify exceptions)*
(In the application of finish on plaster surfaces, the finished results depend on the foundation coat which must definitely stop the suction.)

(b) the Contractor shall properly prepare all plaster surfaces as specified and shall apply one uniform coat of Barreled Sunlight Plaster Sealer, tinted to match the shade of the finishing coat, and
(Omit (c) for two coat work)

(c) one coat of a mixture of two parts Barreled Sunlight Undercoat and one part Barreled Sunlight Plaster Sealer which mixture shall be thinned to proper application consistency with turpentine or mineral spirits; and the surface shall be then painted with

(d) one coat of Barreled Sunlight *(Specify kind of finish coat selected from (i) to (m))*.
(For decorative use requiring (n), (o), (q), (r), use (e) or (f))
(For TWO COAT work use (e))
(For THREE COAT work use (f))

(e) one coat of Barreled Sunlight Plaster Sealer, tinted to match shade of finishing coat, and one coat of (n), (o), (q) or (r), in color selected.

(f) one coat of Barreled Sunlight Plaster Sealer tinted to match shade of finishing coat and one coat of a mixture of 2 quarts of Barreled Sunlight Plaster Sealer to each gallon of Barreled Sunlight Flat Wall Finish (n) or Eggshell Wall Finish (o) thinned to brushing consistency with turpentine or mineral spirits, followed by one coat of (n), (o), (q), or (r) in color selected.
(For decorative use requiring Partial Gloss Wall Finish (p) use (g) or (h))
(For TWO Coat work use (g))
(For THREE COAT work use (h))

(g) one coat of Barreled Sunlight Plaster Sealer tinted to match shade of finishing coat and one coat of Barreled Sunlight Partial Gloss Wall Finish (p) in color selected.

(h) one coat of Barreled Sunlight Plaster Sealer tinted to match shade of finishing coat and one coat of Barreled Sunlight Partial Gloss Wall Finish (p) thinned with one pint of turpentine or mineral spirits per gallon of paint, followed by one coat of Barreled Sunlight Partial Gloss Wall Finish (p) in color selected.

(i) Interior Gloss.

(j) Quick Drying Form Gloss.

(k) Semi-Gloss.

(l) Extra Heavy Eggshell.

(m) Extra Heavy Flat.

(n) Flat Wall Finish.

(o) Eggshell Wall Finish.

(p) Partial Gloss Wall Finish.

(q) Stippling Flat Wall Finish.

(r) Stippling Gloss Wall Finish.
(Use Chemic Enamel for finishing coat where the paint must resist heat or fumes.)

(s) Chemic Enamel Gloss.

(t) Chemic Enamel Eggshell.

(u) Chemic Enamel Flat.

18 PAINTING WALL BOARDS

(a) Throughout *(Specify locations)*

(b) the exposed surfaces of all wall boards except *(state exceptions)*
(For Hard Finish Pressed Wood Fibre Board, use Section (17))
(For Porous Pressed Wood and Cane Fibre types use (c), (i) or (j))
(For Gloss, Semi-Gloss, Extra Heavy Flat or Extra Heavy Eggshell Finish use (c)

(c) Barreled Sunlight Undercoat thinned slightly with mineral spirits and one coat of Barreled Sunlight Undercoat thinned with one quart of No. 65 Reducing Oil per gallon of paint and one coat of *(Specify kind of finish selected from (d) to (h))*

(d) Interior Gloss.

(e) Quick Drying Form Gloss.

(f) Semi-Gloss.

(g) Extra Heavy Flat.

(h) Extra Heavy Eggshell.
(For Partial Gloss Wall Finish use (i))

(i) Barreled Sunlight Undercoat thinned slightly with mineral spirits and two coats of Barreled Sunlight Partial Gloss Wall Finish in color selected.
(For Flat Wall Finish use (j))

(j) Barreled Sunlight Flat Wall Finish thinned slightly with mineral spirits and one coat of a mixture of two quarts of Barreled Sunlight Plaster Sealer to each gallon of Barreled Sunlight Flat Wall Finish, followed by one coat of Barreled Sunlight Flat Wall Finish in color selected.
(For Eggshell Wall Finish use (k))

(k) Barreled Sunlight Eggshell Wall Finish thinned slightly with mineral spirits and one coat of a mixture of two quarts of Barreled Sunlight Plaster sealer to each gallon of Barreled Sunlight Eggshell Wall Finish, followed by one coat of Barreled Sunlight Eggshell Wall Finish in color selected.

19 PAINTING ACOUSTICAL MATERIALS

(Acoustical materials of perforated type can be painted without loss of efficiency with any standard Barreled Sunlight Product.)
(In order to permit decoration of the other types of acoustical materials and particularly in such buildings as schools, hospitals, offices, restaurants, stores, etc., the U. S. Gutta Percha Paint Company has developed Acoustolight. This material is of such a nature that it does not seal the surface pores of the material on which it is applied and can be used without appreciably lessening the efficiency of the sound absorbing material.)

(For painting acoustical materials of the perforated type use specifications for the application of paints over similar materials, such as—metal, wall boards, etc. Use (a) to (c) for the other types only.)

(a) Throughout *(Specify rooms and areas)*
(b) the acoustical material on *(Specify location)*
(c) shall be painted one coat Barreled Sunlight Acoustolight.

20 PAINTING EXISTING INTERIOR PAINT OR ENAMEL

(For clauses covering preparation of surfaces use Section 1.)
(a) Throughout *(Specify rooms and areas as in (b))*
(b) all rooms and occupied areas in the building
(c) the Contractor shall properly prepare all existing painted surfaces as specified and shall paint same with one coat of Barreled Sunlight *(Specify kind selected from)*—
(For ONE COAT work use (i) to (r))
(Do not use one coat work over surfaces which have been painted with cold water paint or whitewash—use (h))
(For TWO COAT work use (d) or (e))
(d) Undercoat and one coat of Barreled Sunlight *(Specify kind selected from (i) to (m))*
(Use (e) where smoothness of finish and entire absence of brush marks are of utmost importance.)
(e) Enamel Undercoat and one coat of Barreled Sunlight *(Specify kind selected from (i) to (m))*
(For Decorative use requiring (n), (o), (q), (r), use (f))
(f) one coat of a mixture of two quarts of Barreled Sunlight Plaster Sealer to each gallon of Barreled Sunlight Flat Wall Finish tinted to match shade of finishing coat and thinned to brushing consistency with turpentine or mineral spirits, followed by one coat of (n), (o), (q), or (r) in color selected.
(For decorative use requiring (p) use (g))
(g) one coat of Barreled Sunlight Partial Gloss Wall Finish (p) thinned with one pint of turpentine or mineral spirits per gallon of paint, and one coat of Barreled Sunlight Partial Gloss Wall Finish (p) in color selected.
(For use over cold water paint—surfaces shall be thoroughly wire-brushed to remove all loose paint)
(For TWO COAT work use (h))
(h) One coat of Interior Barreled Sunlight Undercoat and boiled linseed oil mixed in strict accordance with the manufacturer's directions and one coat of Barreled Sunlight *(Specify kind selected from (i) to (r) in color selected).*
(i) Interior Gloss.
(j) Quick Drying Form Gloss.
(k) Semi-Gloss.
(l) Extra Heavy Eggshell.
(m) Extra Heavy Flat.
(n) Flat Wall Finish.
(o) Eggshell Wall Finish.
(p) Partial Gloss Wall Finish.
(q) Stippling Gloss Wall Finish.
(r) Stippling Flat Wall Finish.

21 ENAMELING OVER INTERIOR WOOD

(a) Throughout *(Specify rooms and areas)*
(b) the Contractor shall prepare the surfaces as specified and shall enamel all *(Specify as in (c).)*
(c) wood trim, doors and wood sash.
(d) as follows:—
(For THREE COAT work use (e))
(For TWO COAT work omit intermediate coat in (e))
(e) Two coats of Barreled Sunlight Enamel Undercoat, thinned to proper consistency with turpentine or mineral spirits and one coat of Barreled Sunlight.
(Specify from (f) to (h) with thinning as above in color selected.)
(f) Interior Gloss Enamel.
(g) Quick Drying Form Gloss Enamel.
(h) Quick Drying Form Eggshell Enamel.

22 ENAMELING OVER INTERIOR METAL

(a) All metal surfaces throughout *(Specify rooms and areas)*
(b) shall be properly prepared as specified and shall be painted one uniform coat of Rice's Red Oxide Anti-Corrosive Primer, if not primed in shop, and then enameled as follows:—
(Specify same as for over wood, use Section 21.)

23 ENAMELING OVER INTERIOR PLASTER

(Except Interior Cement Plaster)
(a) All plaster surfaces throughout *(Specify locations)*
(b) shall be prepared as specified, primed with one coat Barreled Sunlight Plaster Sealer and enameled as follows:—
(For THREE COAT work use (c))
(For TWO COAT work omit intermediate coat in (c))
(c) one coat of Barreled Sunlight Enamel Undercoat, thinned to proper consistency with turpentine or mineral spirits and one coat of Barreled Sunlight
(Specify from (d) or (e) in color selected.
(d) Interior Gloss Enamel.
(e) Quick Drying Form Gloss Enamel.

24 ENAMELING OVER INTERIOR CONCRETE, ASBESTOS-CEMENT, BRICK AND CEMENT-PLASTER

(For hard or smooth finish plaster see Section 23.)
(a) All interior
(b) cement plaster
(c) asbestos-cement
(d) concrete
(e) brick
(New or unpainted cement plaster, asbestos-cement, concrete, brick and similar surfaces are porous and must be properly sealed to insure the uniform appearance of the finish coat. Because such surfaces vary so widely in the degree of the porosity, it is impractical to put out in "ready-for-use" form one material which will take care of all conditions.)
(f) shall be primed with a mixture of Interior Barreled Sunlight Granolith and Rice's No. 65 Reducing Oil in the proportions that shall be decided by painting several small test areas of different mixtures of Granolith and Reducing Oil and adopting the mixture which gives the best results.
(g) This priming coat shall be painted with
(In the case of extreme porosity another coat of Granolith mixed with Reducing Oil should be applied as in (h). Under average normal conditions the first priming coat of this mixture can be followed with one coat of the finish material as in (i) or (j).)
(h) one coat of Interior Barreled Sunlight Granolith reduced with one quart of Rice's No. 65 Reducing Oil to each gallon and then to proper application consistency with turpentine or pure mineral spirits; and this, when dry, shall be painted with
(i) Interior Gloss Enamel.
(j) Quick Drying Form Gloss Enamel.

25 ENAMELING OVER INTERIOR WALL BOARDS

(a) Throughout (*Specify locations*)
(b) all exposed surfaces shall be enameled with
(*For THREE COAT work use* (c))
(c) Barreled Sunlight Undercoat thinned slightly with mineral spirits and one coat of Barreled Sunlight Undercoat thinned with one quart of No. 65 Reducing Oil per gallon of paint and one coat of Barreled Sunlight (*Specify kind selected from* (d) *or* (e)) *in color selected.*)
(d) Interior Gloss Enamel.
(e) Quick Drying Form Gloss Enamel.

26 PAINTING INTERIOR FLOOR SURFACES

Over Unpainted Wood Floors

(a) All floors throughout (*Specify locations*)
(b) shall be properly prepared as specified and the surface painted with
(c) one coat
(d) two coats
(e) of Barreled Sunlight Porch and Floor Enamel thinned with at least ½ pint of turpentine or mineral spirits per gallon of paint used, followed by one coat of Barreled Sunlight Porch and Floor Enamel thinned to brushing consistency in color selected.

Over Existing Paint

(a) Existing paint on all floors throughout (*Specify locations*)
(b) shall be properly prepared as specified and the surface painted with one coat of Barreled Sunlight Porch and Floor Enamel in color selected.
(*For two coat work use* (c))
(c) one coat of Barreled Sunlight Porch and Floor Enamel thinned with at least ½ pint of turpentine or mineral spirits per gallon of paint used, followed by one coat of Barreled Sunlight Porch and Floor Enamel thinned to brushing consistency in color selected.

Over Cement

(a) All cement finish floors throughout (*Specify locations*)
(b) shall be properly prepared and painted one coat of Barreled Sunlight Floor Granolith thinned with at least ½ pint of turpentine or mineral spirits per gallon of paint used.
(c) This priming coat shall then be painted with (*Specify number of coats*)
(d) one coat
(e) two coats
(f) Barreled Sunlight Floor Granolith, thinned with mineral spirits or turpentine to brushing consistency.

27 CANVASING

(a) Throughout (*Specify locations*)
(b) walls and ceilings
(c) shall be given one coat of an approved glue size and shall then be covered with heavy white muslin, thoroughly pasted on, free from wrinkles, laps or blisters. Care shall be taken to remove all pimples or other projections on plastered surfaces before the muslin is applied.
(d) Joints shall not occur except at angles, corners, trim, mouldings, etc., and the muslin shall extend back of all trim at least ½ inch.
(e) Where joints are unavoidable they shall be made inconspicuous with Swedish putty.
(*Specifications for painting on canvased walls will be similar to those for plaster Section* 17 *except that the plaster sealer may be omitted.*)

28 GLAZING

(a) Painted wall surfaces throughout (*Specify locations*)
(b) shall be given one coat of a high-grade glaze in color selected.
(c) Glaze shall be (*Specify finish, such as — brushed, stippled with cloth, stippled with sponge, etc.*)

29 PAINTING INTERIOR PIPES

(a) All exposed piping throughout the entire building
(b) and in boiler room
(c) except (Specify exceptions, such as—copper, nickel-plated, etc.)
(d) shall be painted (Specify number of coats)
(e) one coat
(f) two coats
(g) Barreled Sunlight Piping Enamel.
(h) follow the system recommended by the A. S. M. E. National Safety Council or I. C. C. Standards.

30 PAINTING INTERIOR RADIATORS

(a) All radiators shall be thoroughly cleaned as soon as delivered at the building and shall be painted with one coat Barreled Sunlight Interior Aluminum Paint.
(b) After erection, radiators shall be painted on all surfaces, both exposed and concealed, with two coats of Barreled Sunlight Flat Wall Finish in color selected.

31 PAINTING MACHINES AND EQUIPMENT

(a) All machines throughout
(b) shall have their surfaces prepared and shall be painted (Specify number of coats)
(c) one coat
(d) two coats
(e) Rice's Oxidized Machine Enamel.
(This is the highest grade air-drying machinery enamel—very tough and withstands the action of lubricating oil. Recommended for use on electrical and other high-grade machinery.)
(f) Rice's One Coat Enamel
(A quick drying enamel for use on machinery where the oil proof properties and durability of the Oxidized Machine Enamel are not required to the same extent.)

32 VARNISHING

UNPAINTED INTERIOR WOOD FLOORS

(Open grain wood shall be filled with a high-grade paste wood filler)
(In close grain wood, filler may be omitted)
(a) Shall be varnished with
(b) one coat of Barreled Sunlight Floor Varnish thinned with one pint of turpentine or mineral spirits per gallon of varnish and
(c) one coat
(d) two coats
(e) Barreled Sunlight Floor Varnish as supplied by manufacturer
(f) sand lightly between coats.

Unpainted Wood Trim

(*Open grain wood shall be filled with a high-grade paste wood filler*)
(*In close grain wood, filler may be omitted*)
(g) Shall be varnished with
(h) one coat of Barreled Sunlight Copalite Varnish thinned with one pint of turpentine or mineral spirits per gallon of varnish and
(i) one coat
(j) two coats
(k) Barreled Sunlight Copalite Varnish as supplied by manufacturer
(l) Sand lightly between coats.



BARRELED SUNLIGHT

BRANCH OFFICES

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CHICAGO, ILL. 444 W. Grand Avenue
GREENVILLE, S. C. 1400A Woodside National Bank Building
NEW YORK, N. Y. 420 Lexington Avenue
PHILADELPHIA, PA. 1218 Chestnut Street
SAN FRANCISCO, CAL. 301 Mission Street

DISTRIBUTORS—BARRELED SUNLIGHT Distributors are located in over two hundred cities in the United States. Any branch office will gladly send you the name and address of the one nearest you.



BARRELED SUNLIGHT WILL MEET YOUR *Every* ARCHITECTURAL REQUIREMENT

U. S. GUTTA PERCHA PAINT COMPANY

SECTION 17

CONTINUED ⟶

UNITED STATES GYPSUM COMPANY

Paint Products
300 West Adams Street, CHICAGO, ILL.

SEE FILE INDEX FOR OTHER USG CATALOGS CONTAINING LIST OF SALES OFFICES

TEXOLITE PASTE WALL AND CEILING PAINT—DESCRIPTION

Saves Up to 40% on Interior Decoration

Texolite* is a paste wall paint for the painting of all types of interior walls and ceilings. The vehicle in Texolite is water-clear material, which allows all the light which strikes a Texolite painted wall to be reflected from the wall in the true, clear color of the pigment. The pigment in Texolite is specially processed lithophone with exceptionally high hiding power.

HIDING—One coat of Texolite hides average surfaces completely. Saves substantially in both time and material.

APPLICATION—Texolite is reduced to application consistency with water and is applied with either brush or spray gun. It flows easily under the brush. A 6- or 8-in. Baby Dutch brush is recommended. A good quality calcimine brush can also be used.

NON-INFLAMMABLE—Texolite contains no ingredients which can create fire hazards.

HIGH LIGHT REFLECTION—White Texolite reflects up to 90 per cent of the light which strikes it. It provides higher light levels; helps to save eyesight, increase worker efficiency, and cut lighting costs.

WIDE COLOR RANGE—Texolite comes in ten pastel shades and white. Intermixes of colors provide many additional shades. Can be tinted with Texolite Deep Colors (see heading Texolite Deep Colors) to provide unlimited range of tints, shades, or blends.

NON-YELLOWING—Texolite does not yellow or fade. Colors remain bright and true indefinitely.

QUICK DRYING—Texolite dries under average conditions in *one hour or less.* Decorating time is reduced to a minimum. Occupancy of interiors can be resumed within an hour after painting is completed.

USED OVER ANY SOLID SURFACE—Texolite can be applied over new or old plastered walls, fiber, gypsum or insulating wallboards, brick, tile, concrete, cement, primed or painted wood or metal surfaces.

PRIMER—It is good practice to apply a prime coat of K-Cemo* Primer over most surfaces, new or old, because it evens up suction, provides an ideal surface to paint over, makes Texolite spread farther, and will assure a more uniform, better looking job. (For full description of K-Cemo Primer, see below).

NO PAINT ODOR—Permits occupation of interiors in less time after painting is completed.

WILL NOT CRACK—Texolite will not crack from sunlight or age.

HIGH COVERAGE—Following are the approximate coverages per gallon of Texolite paste.

Smooth primed or painted surfaces....600 to 800 sq. ft.
Smooth finished plaster surfaces.....500 to 700 sq. ft.
Textured surfaces.....400 to 600 sq. ft.
Insulating Board, fiber wallboard.....350 to 500 sq. ft.
Cinder blocks, concrete.....300 to 450 sq. ft.

PACKAGING—Texolite comes in quart, gallon, and 5-gallon cans and in 30-gallon drums.

K-CEMO (Lime-Locking) PRIMER

K-Cemo Primer is particularly useful for priming porous surfaces over which Texolite Paste Wall Paint is to be applied. It effectively seals porous surfaces, keeping the paint vehicle from striking into the pores of the surface.

The use of K-Cemo as a prime coat is recommended when Texolite is to be applied over extremely porous surfaces or surfaces of greatly varying suctions. Its use is also recommended as a primer when Texolite Deep Colors are applied over porous surfaces.

A coat of K-Cemo Primer over high gloss surfaces prevents bushing through or sagging of the paint finish. Such gloss surfaces should be washed thoroughly before applying K-Cemo.

TEXOLITE DEEP COLORS

Texolite Deep Colors are made to the same formula as Texolite Wall Paint. Deep Colors have the same characteristics and the same advantages as Texolite Wall Paint.

Texolite Deep Colors come in eleven deep brilliant colors and black. They are used either full strength as deep, brilliant paint or as tinting colors for tinting white Texolite or varying the color tones of the standard Texolite pastel shades.

*Reg. Trade-Marks.

OTHER USG PAINT PRODUCTS

DURACAL

A well formulated, smooth working powder casein paint. Can be applied over fresh or untreated plaster. Mixes easily and spreads well. Five pounds of Duracal* will cover one coat of from 200 to 300 sq. ft. over primed or painted surfaces—over porous surfaces, slightly less. Made in white and 8 standard colors. Packed in 5 and 25-lb. packages, 100-lb. drums, and 325-lb. (net weight) barrels.

USG CALCIMINE

A good cold water type calcimine. Made in white and 10 standard colors. Packed in 5-lb. packages, 25-lb. bags and 325-lb. barrels.

RED TOP PATCHING PLASTER

Red Top* Patching Plaster contains no lime. It is non-shrinking, very white, and specially formulated to assure easy workability.

USG SPACKLING COMPOUND

USG Spackling Compound is indispensable to painters and unexcelled for general household utility repairs. It is excellent for spackling and as a base for Swedish putty. It adheres firmly to any firm, clean surface—even to glass and steel. Dries stone hard without shrinking or cracking, thus furnishing a perfect surface for redecorating.

RED TOP PAINTERS' PLASTER

A general purpose painters' material. Red Top Painters' Plaster is produced from selected white gypsum rock especially treated to afford easy mixing. When set, it is unusually dense and strong.

KAL*

A high grade hot water calcimine. Made in white and 10 standard colors. Packed in 5-lb. packages, 25-lb. bags and 325-lb. barrels.

USG INTERIOR COLD WATER PAINT

A material giving better results than ordinary whitewash but affording equal economy. It is ideal for periodic cleaning and reconditioning of factories, warehouses, farm buildings, and other structures. Made in white only. Packed in 25-lb. bags and 350-lb. barrels.

USG EXTERIOR COLD WATER PAINT

An economical reconditioning paint for general outside utility work applied over practically any type of clean, firm surface. Forms an unusually smooth, tight film which remains much cleaner for this reason than the rough surface of the usual exterior wall coating. Made in white only. Packed in 25-lb. bags and 325-lb. barrels.

USG CEMENT PAINT

CEMENTICO

Cementico* is a cold-water, weatherproof, insoluble, hydraulic cement paint for use over such surfaces as unpainted stucco, porous concrete, brick, tile, and stone. It is not intended for use on floors, wood or non-porous surfaces such as smooth plaster, terra cotta, and enameled brick; or on greasy surfaces.

It is in the form of a powder to be mixed with water.

An outstanding and almost exclusive advantage is the readiness with which Cementico mixes with water. Because of the absence of "sludge" in the mixture, the usual tedious straining operation is materially lessened. Due to its smoothness and uniform consistency, Cementico is admirably adapted to application by spray gun as well as by brush.

Again and quite important, the tendency to "bloom" inherent in most cement-and-lime mixtures, in Cementico has been practically eliminated.

When white Cementico is to be tinted, the most lasting results are obtained by the use of USG Limeproof Colors.

One (1) pound of Cementico, applied in one (1) coat, will cover 16 to 25 sq. ft. depending upon the texture of the surface to be covered and heaviness of the application required.

Made in white and 10 standard colors. Packed in 5, 25, and 100-lb. packages and 325-lb. barrels.

USG PLASTIC PAINTS

TEXTONE

Textone* is a quality texture paint for application over walls and ceilings to produce beautiful and enduring texture effects. It comes in white powder form, is easily mixed with water to prepare it for application. Textures are obtained with tools employed in everyday use—whiskbroom, stippling brush, sponge, wadded paper, crumpled cloth, or the palm of the hand.

With these various tools, and others, many types of textures can be easily worked out to suit almost any architectural design. Attractive caenstone and travertine effects can be achieved.

A new method of low cost texture decoration employing Textone and Texolite which cuts materially the cost of texture work has been developed by the United States Gypsum Co. Briefly, the new method is this—One extremely thin coat of Textone in its natural white color is applied to the wall. As soon as the Textone is dry, one coat of Texolite Paste Wall Paint in the desired shade is applied. The result is a colorful, durable, textured finish of outstanding beauty. It's a job that has been done more simply, in less time, and at lower material cost than was ever before possible.

Heavier texture effects can be obtained by working with Textone at a heavier consistency and applying it to a greater thickness. Coloring can be applied by painting the textured surface with Texolite Paste Wall Paint; or dry pigment colors may be mixed with the prepared Textone before application. Other methods of coloring include blowing in colored sands after the Textone is on the wall by water glazing with tinted Textone Sealer or by applying a coat of Textone Glaze which has been tinted with colors ground in oil. Wiping the glaze coat brings out the high-lights and produces two-toned effects.

*Reg. Trade-Marks.

One pound of Textone should cover approximately from one to three square yards of surface for a medium texture; slightly more with finer textures.

Made in white only but is easily tinted with USG Limeproof colors. Packed in 25 and 100-lb. moisture-proof fiber boxes and 325-lb. (300-lb. net) barrels.

USG TEXTURE PAINT

USG Texture Paint is a dry, white, powdered plastic paint, very similar to Textone in working qualities and in texturing possibilities. It is priced less than Textone, and although it necessarily lacks some of the quality of the latter, particularly the long-storing feature, yet it is far superior to most plastic paints on the market.

One pound will cover about one square yard. Packed in 25 and 100-lb. packages and 300-lb. (net) barrels.

EM-BEL-LO

Em-Bel-Lo* is a dry, white powder, texture-yielding paint, economical to buy and apply. The addition of water makes it ready for application. It is particularly adaptable to the production of water-floated textures. Colors are added and the textures produced as with other plastic paints. Application is with a brush. It is not self-sizing.

One pound of Em-Bel-Lo covers from ¾ to 1 sq. yd., medium texture.

Em-Bel-Lo can be satisfactorily tinted, before application, to any desired shade through the introduction of dry limeproof color.

Made in white only. Packed in 25 and 100-lb. packages and 325-lb. barrels.

THE WILBUR & WILLIAMS COMPANY

Manufacturers of Penetrating Protective Paints for Every Purpose

Park Square Building, BOSTON, MASS.

Direct Factory Representatives and Jobbers in Principal Cities

THE WILBUR & WILLIAMS COMPANY has specialized for years in manufacturing paints to simplify industrial painting problems. They are the pioneers in penetrating protective paints. Special field representatives are available for consultation without obligation.

Full specifications will be supplied on any of the following products ready for insertion in general specifications. A request for this will bring it to you without delay, together with lists of users and more detailed information in regard to the product in which you are interested.

PRODUCTS

These WILBUR & WILLIAMS COMPANY Products Furnish a Simple Solution to Paint Problems Outlined Below:	Bondlite Oil Paint	Exterior Bondlite Oil Paint	Totalbrite Casein Paint	Totrust Rust Inhibitive	Totalume Aluminum Paint	Causticbond	Bondlite Fungus and Termite Preventive	Bondlite Water Tank and Swimming Pool Paint	Bondlite Factory Window Glass Paint	Fire Resisting Paint
Interior Walls and Ceilings										
1. Paints over damp plaster, green concrete	X		X							
2. Oil paint over calcimine or white wash	X									
3. High hiding over building tile, brick, concrete or wallboards	X		X							
4. Quick drying with minimum odor	X		X							
5. Prevention of fungus growths							X			
6. Fire resisting gloss paint										X
7. Elimination of glare through windows									X	
Exterior Walls										
1. Oil bonding protection over masonry		X								
2. Durable and bonding wood preservation		X								
Protection Over Metal Surfaces										
1. Coating over rusting metal				X	X					
2. To secure a high and lasting aluminum sheen					X					
3. Protection over damp metal				X	X					
4. Painting over new galvanized iron				X	X					
5. Protection of metals from caustics and acids						X				
6. Interior of water tanks and under water surfaces								X		
7. Paint for extremely hot surfaces				X	X					X

Bondlite—An oil paste paint, uses a special vehicle to assure penetration into and bonding with the surface. It can be mixed on the job to provide a flat, eggshell or gloss finish, in white or tints. When mixed flat it is a breathing paint, allowing for application over damp surfaces. Extremely quick drying with minimum odor.

Exterior Bondlite is an oil paste paint containing lead, zinc and titanium for durability and whiteness. It is mixed on the job with linseed oil to provide a free flowing coating. Its unusual bonding and easy flow recommends it for masonry surfaces and provides unusual preservation of wood surfaces.



Left:
A & P Super Market, Detroit, Mich.
Bondlite—One coat sprayed over white washed ceiling and walls

Right:
Pilgrim Laundry, Indianapolis, Ind.
Presented a problem of crumbling concrete, previously painted with calcimine. It was wire brushed, treated with one coat of Totrust to seal the surface, and followed by two coats of Exterior Bondlite



Totalbrite—A scientifically mixed casein paint, made to meet government specifications. Easily mixed. Provides over 90% light reflection in white.

Totrust—Penetrating rust inhibitive. Having greater capillary attraction for metal than water, it penetrates rusting pits and pin holes, expels moisture, forming a hard, solid surface, to prevent further corrosion. Note the attached micro-diagram. Exceptional savings are possible by eliminating costly preparation. Durable protection is assured. Supplied in clear and in five standard colors. Unaffected by high heats. Exceptional adhesion to new galvanized surfaces.

Totalume—The one aluminum paint recommended directly over rust or over new galvanized surfaces, because it uses Totrust as its vehicle. Exceptionally high sheen.

Causticbond—A black paint coating for protection of wood or metals exposed to acids or caustics.

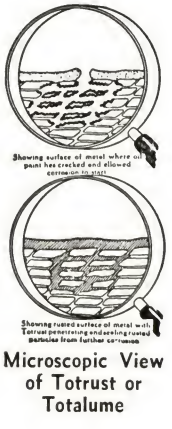
Bondlite Fungus and Termite Preventive—A hydrocarbon fungicide which, when mixed with Bondlite or any ready mixed paint, prevents the adhesion of fungus on the paint film, and prevents termites from boring through.

Bondlite Water Tank and Swimming Pool Paint—A water resistant coating for protection of submerged surfaces. Supplied in white for drinking water tanks. No poisonous ingredients.

Bondlite Factory Window Glass Paint—Supplied in transparent blue to eliminate glare, or in translucent white to kill transparency as well as glare.

Fire Resistant Paint—A gloss white finish. For factory interiors. Does not support flame.

Write us for field representative to call regarding paint problems, or for specifications on any of the above products.



Microscopic View of Totrust or Totalume

THE AMERICAN CRAYON COMPANY

Manufacturers of a Quality Line of Floor Finishes

Sandusky, OHIO

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NEW YORK, N. Y., 9 Rockefeller Plaza, 49th St. and Fifth Ave. DALLAS, TEX., Santa Fe Bldg. SAN FRANCISCO, CALIF., 116 New Montgomery St.

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1835 ● 1939

Kaysan—Modern Wood Sealer and Finish for floors, trim and furniture.
Filtite—Sealer and Finish for concrete and similar surfaces.
Kay-Wax Liquid and Kay-Wax Paste—Floor Waxes.
Kay-Brite Wax—A self-polishing Liquid Wax.
Trazatite—A Terrazzo Sealer and Finish.
Also Crayons, Water Colors, Pencils, Inks, Pastes and other Old Faithful Products.

*KAYSAN—MORE WEAR—LESS CARE

KAYSAN is manufactured by the makers of the first emulsified, penetrating varnish developed for heavy-duty, hard-service wood floors.

It is recommended without reservation for wood floors in schools, stores, factories, offices, clubs, hotels, public buildings, apartment houses and similar types of buildings where floors receive excessive wear but must be attractive in appearance.

Outstanding Qualities

Brings out the full beauty of the grain to a remarkable degree.

Needs never be refinished, but can be repolished with one application of KAYSAN as often as wear requires.

Will not show laps but can be applied to traffic lanes without resanding and refinishing the entire floor.

Dries bone dry and may be polished by friction.

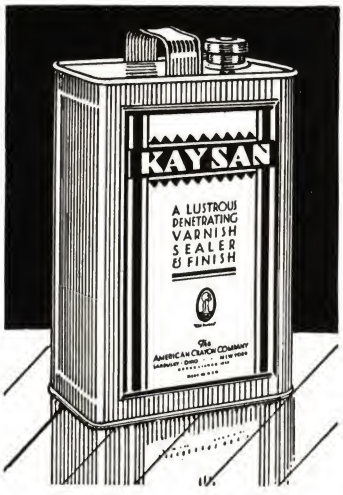
Withstands the hardest usage.

Easily cleaned—reduces maintenance to a minimum.

Reduces time and labor to minimum as it sets up quickly enough so *second application can be put on about two hours after the first.* In the case of a third application, *this third application can also be put on about two hours after the second.*

It is a very durable finish which does not *water spot, crack or scale off, gather dirt like oil, scratch or mar, need wet scrubbing, nor increase the fire hazard.*

It *applies easily, seals the wood, prevents slipping, gives a lustrous finish* and *takes hard wear.*



How to Specify

For New Wood—Three applications (or two, depending on the wood to be finished) of KAYSAN shall be made two hours apart as directed by the manufacturer. *For further information and prices write direct.*

How to Apply

For New Wood—Apply fairly heavy coat of KAYSAN with wide brush or mop. When this application looks flat (in about two hours), put on the second coat, less heavily than the first. Let dry about two hours, then buff with No. 2 steel wool until it feels dry to the hand. Allow to thoroughly dry over night, then buff with No. 2 steel wool again and polish with burlap bag or carpet if sheen is desired.

For Old Wood—All previous varnish, shellac, wax and paint finishes must be removed and the wood perfectly cleaned. Oiled wood floors must be scrubbed. Then apply KAYSAN as directed for new wood.

Cost of Application

The use of KAYSAN eliminates the necessity of stain and shellac coats. This, plus its ease of application and minimum cost of maintenance, makes KAYSAN very economical.

Covering Capacity

Under average conditions, 1 gal. of KAYSAN finishes on oak, approximately 300 sq. ft. with three applications; on maple, 400 sq. ft. with two applications.

Ease of Maintenance

Clean wood with a damp cloth and, when dry, give a light polish application of KAYSAN. Allow to dry thoroughly, then polish. When lanes of wear occur, worn spots may be buffed and retouched with KAYSAN without refinishing the entire floor.

Hard service floors should be swept with a stiff broom. Do not scrub with water or scrubbing compounds. When scrubbing seems necessary, scrub with steel wool under a weighted mop.

Floors receiving hard wear should have a vigorous buffing with steel wool and an additional application of KAYSAN once or twice a year, according to amount of wear or appearance desired.

*FILTITE—CEMENT SEALER AND FINISH

FILTITE is recommended for sealing and finishing concrete floors in mills, factories and their offices, in the Process and Mechanical Industries; Federal, State and municipal buildings; commercial, institutional and similar types of buildings.

It fills the pores, binds the integral parts of concrete together, preserves, toughens and prevents dusting, improves the appearance, and at the same time seals the concrete against the penetration of grease, oils and many other stains.

A second application of FILTITE acts as a finish. However, if a painted surface is desired, a good concrete paint may be used over one application of FILTITE. It wears much longer than if applied on an untreated concrete surface.

FILTITE is easily, quickly and economically applied, and maintained. Write for full directions, prices, etc.

Covering Capacity—The coverage of FILTITE depends on the condition and the porosity of the concrete. If this is new and well-troweled, 1 gal. will cover approximately 250 sq. ft. with one application and proportionately more according to the condition of the concrete. But on old and very porous concrete, 1 gal. will cover about 150 to 200 sq. ft. with one application.



* Reg. U. S. Pat. Off.

CONTINENTAL CAR-NA-VAR CORPORATION

Treatments for Floor Finishes for All Types of Floor Surfaces

1527-29 E. National Avenue, BRAZIL, IND.

SALES REPRESENTATIVES, OFFICES AND WAREHOUSES IN PRINCIPAL CITIES

Tri-C Products

Car-Na-Var products consist of a complete line of floor treatments and equipment for conditioning, treating and maintaining all types of floors. They are made from formulae resulting from years of experience since 1918, by special processing machinery and under strict laboratory control. They meet the United States Treasury, Branch of Public Buildings specifications for floor treatments.



Engineering Service

Our field representatives are graduates of the Continental College of Floor Efficiency and are factory-trained in the use of Tri-C products. They are willing to co-operate at all times with the owner, architect and contractor.

The Company

Our Company is incorporated for one million dollars and enjoys a high credit rating and has the best of manufacturing facilities for producing uniform products at all times.

Further Information

Refer to our Special A.I.A. Folder 25 B-1. Our materials are being used by some of the largest institutions, buildings, schools, universities and hospitals in the United States. Write for complete specifications.

TRI-C FLOOR TREATMENTS

CLEAN-O-SHINE—An amber colored, semi-liquid neutralizer and cleaner with a pure linseed base having an approximate neutral solid content of 22%. Approved as a cleaner by the Linoleum Association and others. Meets U. S. Specification "Cleaner A."

DE-TER-GO—De-Ter-Go is a white powder. For cleaning oil-soaked floors it has no equal, removing the surface oil and restoring the former color without harming the floor. De-Ter-Go is also especially adapted for cleaning rubber floors. Meets U. S. Specification "Cleaner B."

FLOR-FIL—A floor filler that becomes a part of the floor. Contains no corn meal or other soft filler but embodies the best qualities of a silex filler with the flint-like hardness of rock. Comes in colors. Meets U. S. Specification "Filler."

SEAL-VAR—(For sealing oil-soaked floors.) A special, penetrating but quick drying sealer for oil-soaked floors. Before applying, the surface oil must be removed with an oil remover like De-Ter-Go. Seal-Var is also useful in other cases where a quick drying sealer is essential. It is applied with a lamb's wool mop and dries in an hour, though two or three hours should be allowed. Meets U. S. Specification "Sealer A."

VAR-SEAL—A penetrating seal. Write for full description.

CAR-NA-SEAL—100% Bakelite and similar phenolic gums. A seal for wood floors—tough as leather yet thoroughly pliable—that gives a luster. Preserves the floor by excluding moisture and dirt from the pores while protecting the surface from rough usage. Car-Na-Seal is an ideal dressing for gymnasium floors. Provides a firm, safe footing. No danger from slipping. Marks left by rubber soles (rubber burns) easily removed with mop. Protects marking of basketball court, etc. Alkali and acid resisting. Car-Na-Seal is quickly applied with a lamb's wool mop. No buffing is required. Meets U. S. Specification "Sealer C."



Silent Chief Floor Machine

CAR-NA-PAINT—Car-Na-Seal with pigment added to give a flexible and very durable finish—suitable for concrete or wooden floors. Not to be confused with ordinary paint. Applied with paint brush. Comes in the following colors: Green, Maroon, Tile Red, Dark Brown, Linoleum Brown, Dark Gray and Light Gray. Meets U. S. Specification "Sealer C," except contains color pigment.

CAR-NA-CRETE—The super-surfacer for concrete floors. Made by an entirely new principle. Dries to a hardness 90% the equal of plate glass. Proof against moisture, alkali, gasoline, oils, etc. Resists hydrochloric, nitric and sulphuric acids up to 50% concentrations. Resists water, heat, cold and abrasion. Perfect adherence—wears like iron. Supplied in several colors—gray, brown, green and tile red. Applied with brush or sprayer—dries quickly. Meets U. S. Specification "Sealer D."

CAR-NA-VAR—Car-Na-Var is a mop-applied liquid containing waxes and varnish gums. Because of our special process these waxes and gums are perfectly dispersed. Car-Na-Var dries almost immediately and when rubbed resembles a fine varnish. However, the wax content supplies sufficient pliability to prevent the finish from being brittle like varnish, and unlike varnish the friction of traffic enhances the polish. It is the varnish content which gives Car-Na-Var its hardness, its adhering qualities and superior durability. Car-Na-Var by tests has proven at least three times as durable as floor wax. It becomes a permanent part of the floor, thereby materially reducing maintenance costs. Car-Na-Var is supplied in "Natural" which is stainless and several popular colors, including: Dark Oak, Light Oak, Walnut, Cherry, Mahogany, Maroon, Bright Green, Olive Green and Mission. Meets U. S. Specification "Undercoater A."

RUBBER-VAR—A waterproof liquid emulsion made of varnish gum and waxes with an aqueous thinner. Applied with mops and buffed to high polish. It should not be confused with the water waxes as it does not wash off. It is easily cleaned, eliminates the need of frequent scrubbings and when repairs are made, shows no overlaps.

CONTINENTAL "18"—Continental "18," in effect, is a lacquer made of wax. Actually it is not a lacquer. It is applied with a mop like liquid wax but levels itself out in drying like lacquer or varnish. The coating is uniform. It dries in thirty minutes, producing a tough, lacquer-like film of high gloss—not brittle like lacquer or varnish but pliable like wax and remarkably durable. When thoroughly dry, the film becomes so waterproof that it may even be used on outdoor surfaces such as painted porches, etc. As the film seasons over a period of several days, the gloss grows richer. Traffic marks, more pronounced during the first few days of seasoning, may readily be removed with a dust mop. Continental "18" will outwear all ordinary wax treatments. Worn spots can be repaired without showing overlaps. Can be applied on practically all kinds of floors, painted, varnished or waxed surfaces. Meets U. S. Specification "Finish Material."

GENERAL REQUIREMENTS AND SPECIFICATIONS

Specification Writer. In any and all events, copy the following paragraphs Nos. 1 to 4 inclusive as a preamble to the specifications and as an explanation of requirements of the general contractor.

1. Materials. All materials used for cleaning, filling and treatment of floors under this contract shall be of one brand by one manufacturer as manufactured under the trade-names by the CONTINENTAL CAR-NA-VAR CORPORATION, Brazil, Indiana; or as manufactured under the respective trade-names by the National Floor Engineers, Inc., 217 East 68th Street, New York City; or by the Hygea-Tech Laboratories, Brazil, Indiana, and shall meet the respective specifications of the U. S. Treasury, Branch of Public Buildings, "Treatments for Floor Finishes."

2. General. All material shall be applied in strict accordance with the manufacturer's printed directions to suit the particular flooring material in the amounts and manner specified.

Mop Application—Materials shall be "mop-applied" with the following types of mops:

Lamb's Wool—Tri-C Lamb's Wool Mops or equal.

Cotton String—Cotton string mops shall be of two lengths with a head 6 in. wide and strands about 15 in. and 20 in. long, respectively.
Exception: With the exception of Car-Na-Crete, Car-Na-Paint or Flor-Fil.

Note: Continental "18," or Glo-Rite, or Hygea-Brite "18," must not be rubbed until dry. Seal-Var, Var-Seal and Car-Na-Seal must be flowed on to the floor.

3. Polishing—Polishing, where specified, shall be done with a Silent Chief machine or equal, a single disc, concentrated weight on the brush electric floor machine. On porous floors where polishing is done before the treatment is completely dry, use a fibre brush and finish with a soft (Tampico) brush. If treatment has been applied too thick and brush waves appear, use mat of clean "O" or "OO" steel wool beneath weight or brush and repolish or rub out waves with burlap.

Note: A Silent Chief electric floor polisher is advocated.

Steel wool rings for removing excess materials, raised grain, and/or for burnishing a new finish are to be made to fit the disc of the floor machine above described and the steel wool is to be woven vertically instead of horizontally.

4—Sweep floors clean of all dust or other foreign matter.
Treatment of wood floors—Maple, Beech, Birch, Pine and Oak floors. (Strip flooring, Unit Block Tile and Edge-Grain.)

Note: Oak floors are to be filled except when specified that filler is to be eliminated and additional coat of seal to be used.

OAK FLOORS

5—Shall be filled with Flor-Fil, as manufactured by the CONTINENTAL CAR-NA-VAR CORPORATION, Brazil, Indiana; or Na-Fe Filler or Hygea-Fil, using not less than an average of 15 lbs. of filler for each 1000 sq. ft. of oak floors. The paste filler to be mixed thoroughly with turpentine or painter's naphtha to the consistency of good house paint. Apply filler with brush or mop, rubbing thoroughly across the grain. When it sets and starts to turn dull in appearance, rub floors across the grain to remove surplus filler. Let filler set eight hours or more before giving floor additional treatment. If the floor is to be stained, use dyed filler in the color selected.

5-A—Since the oak floors are not to be filled with a silex type filler but with a seal, apply an additional coat of Car-Na-Seal, as manufactured by the CONTINENTAL CAR-NA-VAR CORPORATION, Brazil, Indiana; or Bake-O-Seal, or Hygea-Seal, as directed and at the option of the architect or owner.

OILED FLOORS OR OLD FLOORS

6—Write for detailed specifications.

WOOD FLOORS—MAPLE, BEECH, BIRCH, PINE, OAK

7—Shall be given two coats of Car-Na-Seal, as manufactured by the CONTINENTAL CAR-NA-VAR CORPORATION, Brazil, Indiana; or Bake-O-Seal, or Hygea-Seal, using not less than an average of one gallon for each 300 square feet on the first coat, and not less than an average of one gallon for each 500 square feet on the second coat, without any dilution. Each coat is to be flowed on with a lamb's wool mop to cover the surface completely. The first coat must be thoroughly dry and free from tackiness, then steel wool with a steel wool pad under a concentrated weight, single disc electric floor machine until high lights are removed and the raised grain smoothed. Allow from 8 to 14 hours for drying time between coats.

FOR OAK WITHOUT FILLER, AND GYM. FLOORS

7-A—When the second coat is dry and free from tackiness, next apply a third coat of the material.

Except Gymnasium Floors

7-B—Shall be treated by applying with a lamb's wool mop one coat of Car-Na-Var, as manufactured by the CONTINENTAL CAR-NA-VAR CORPORATION, Brazil, Indiana; or Varni-Glo, or Wax-O-Var, using not less than an average of one gallon to each 1000 square feet. Rub the material out to cover the surface completely and when dry, polish with a single disc, concentrated weight electric floor machine. Next apply and polish, in the same manner, one coat of Continental "18," as manufactured by the CONTINENTAL CAR-NA-VAR CORPORATION, Brazil, Indiana; or Glo-Rite or Hygea-Brite "18," using not less than an average of 1 gallon to cover each 1000 square feet.

MAPLE, BEECH, BIRCH, PINE AND OAK

8—Write for detailed specifications.

LINOLEUM FLOORS

9—Shall be cleaned with a solution of 1 gallon of water and 2 ounces of Clean-O-Shine, as manufactured by the CONTINENTAL CAR-NA-VAR CORPORATION, Brazil, Indiana; or Clean-Rite or Hygea-Kleen, using not less than an average of one gallon for each 4000 square feet, to neutralize any alkali or free surface oil, rinse the cleaned floor with a clean water mop and mop with clean dry cotton mop to remove any streaks. When floor is dry, apply with lamb's wool mop two thin coats of Car-Na-Var, as manufactured by the CONTINENTAL CAR-NA-VAR CORPORATION, Brazil, Indiana; or Varni-Glo, or Wax-O-Var, using not less than an average of one gallon to each 1000 square feet per coat. Then apply one coat of Continental "18," as manufactured by the CONTINENTAL CAR-NA-VAR CORPORATION, Brazil, Indiana; or Glo-Rite or Hygea-Brite "18," using not less than an average of one gallon to each 1000 square feet, each of the above coats of materials to be polished thoroughly when dry with a single disc, concentrated weight on the brush electric floor machine. Exceptions where the linoleum is furnished with a sealer treatment applied at the factory, one coat of Car-Na-Var, or Varni-Glo, or Wax-O-Var, may be omitted. This, however, is at the option of the architect or owner.

CORK TILE AND CORK CARPET FLOORS

10—Write for detailed specifications.

MASTIC COMPOSITION (TROWELLED) FLOORS

11—Write for detailed specifications.

ASPHALT COMPOSITION TILE FLOORS

12—Shall be cleaned with a solution of 1 gallon of water and 2 ounces of Clean-O-Shine, as manufactured by the CONTINENTAL CAR-NA-VAR CORPORATION, Brazil, Indiana; or Clean-Rite, or Hygea-Kleen, using not less than an average of one gallon for each 4000 square feet. Then rinse the cleaned floor with a clean water mop and mop with a clean dry cotton mop to remove any streaks. Next apply with a clean lamb's wool mop, two coats of Continental "18," as manufactured by the CONTINENTAL CAR-NA-VAR CORPORATION, Brazil, Indiana; or Glo-Rite, or Hygea-Brite "18," using not less than an average of one gallon to each 1000 square feet per coat, each of the above coats of material to be polished thoroughly when dry with a single disc, concentrated weight on the brush electric floor machine.
Remarks—In case lime, plaster, and other craftsmen's dirt has become impregnated into the floor, or the floor is gray in color due to such exposure, then each tile is to be cleaned by hand with kerosene, and "00" steel wool to remove the dirt and grayish cast, then cleaned as specified.

RUBBER TILE FLOORS

13—Shall be cleaned with a solution of 1 gallon of water to 1 ounce of De-Ter-Go or Maintenite, as manufactured by the CONTINENTAL CAR-NA-VAR CORPORATION, Brazil, Indiana; or Disolvo, or Hygea-Zolve, using not less than an average of 10 pounds for each 1000 square feet to be cleaned. The cleaning solution shall be followed with a clean damp rinse mop, then mopped with a clean dry cotton mop to remove any streaks. Then apply with a clean lamb's wool mop two coats of Rubber-Var, as manufactured by the CONTINENTAL CAR-NA-VAR CORPORATION, Brazil, Indiana; or Rubber-Lac, or Rubber-Tone, using not less than an average of one gallon to each 2000 square feet. Then mop apply one coat of Continental "18," as manufactured by the CONTINENTAL CAR-NA-VAR CORPORATION, Brazil, Indiana; or Glo-Rite or Hygea-Brite "18," using not less than an average of one gallon to each 1000 square feet. Each coat of material shall be thoroughly polished when dry with a single disc, concentrated weight on the brush electric floor machine.

TERRAZZO AND MARBLE FLOORS

14—First damp mop the floor with clean water, then apply to the wetted area, a solution of one gallon of water to 2 ounces of Clean-O-Shine, as manufactured by the CONTINENTAL CAR-NA-VAR CORPORATION, Brazil, Indiana; or Clean-Rite, or Hygea-Kleen, using not less than an average of one gallon to each 4000 square feet cleaned. Then scrub the floors with this solution and squeegee off the excess. Then mop the floor with a clean water mop, then dry mop to remove any streaks. Next apply with a clean lamb's wool mop, two coats of Rubber-Var, as manufactured by the CONTINENTAL CAR-NA-VAR CORPORATION, Brazil, Indiana; or Rubber-Lac, or Rubber-Tone, using not less than average of one gallon to each 2000 square feet. Then apply, in the same manner, one coat of Continental "18," as manufactured by the CONTINENTAL CAR-NA-VAR CORPORATION, Brazil, Indiana; or Glo-Rite or Hygea-Brite "18," using not less than an average of one gallon to each 1000 square feet. Each coat to be polished when dry with a single disc, concentrated weight on the brush electric floor machine.

QUARRY TILE AND SLATE FLOORS

15—Write for detailed specifications.

CEMENT FLOORS

16—Shall be cleaned with a solution of 1 gallon of water and 1 ounce of De-Ter-Go, as manufactured by the CONTINENTAL CAR-NA-VAR CORPORATION, Brazil, Indiana; or Disolvo, or Hygea-Zolve, using not less than an average of 10 pounds per 1000 square feet. After the scrubbing, the raised excess lime, cement, dirt and excess cleaning material shall be squeegeed off and then rinsed with a clean water mop and dry mopped to remove any streaks. Then the floor shall be etched with a solution of 10% of commercial muriatic acid and water. When effervescence ceases, rinse with clear water, then let floor dry. Next apply two coats of Car-Na-Crete (made from plantation rubber resin), or Car-Na-Paint (made from phenol resin and color pigment), as manufactured by the CONTINENTAL CAR-NA-VAR CORPORATION, Brazil, Indiana; or Crete-Paint (made from plantation rubber resin), or Bake-O-Paint (made from phenol resin and color pigment), or Cement-Kote (made from plantation rubber resin), or Hygea-Paint (made from phenol resin and color pigment), using not less than an average of 1 gallon to each 450 sq. ft. Colors in which materials are to be supplied are Brown, Tile Red, Battleship Gray and Green. Allow the floors to dry thoroughly between each coat, not less than 8 to 12 hours. Next apply with a lamb's wool mop one coat of Continental "18," as manufactured by the CONTINENTAL CAR-NA-VAR CORPORATION, Brazil, Indiana; or Glo-Rite, or Hygea-Brite "18," using not less than an average of 1 gallon to each 1000 sq. ft,, polishing thoroughly when dry with a single disc, concentrated weight on the brush electric floor machine. The type and color of material to be used, whether made from plantation rubber resin or from phenol resin and color pigment, is at the option of the architect or owner.

MAGNESIA COMPOSITION FLOORS

17—Write for detailed specifications.

MASONITE

18—Write for detailed specifications.

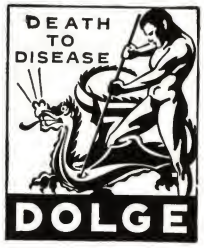
THE C. B. DOLGE CO.

Manufacturers of Floor Maintenance Products

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WESTPORT, CONN.

DOLGE has been established over 47 years. Many important developments in the maintenance field have originated in the DOLGE Laboratories. At work in these laboratories are some of the keenest minds in this industry. The large, modern DOLGE plant is equipped with automatic equipment, operated under the direction of highly skilled technicians. Result: dependable products.



DOLGE Floor Finishes have been tested and approved by the Oak Flooring Manufacturers Association, Maple Flooring Manufacturers Association, Rubber Manufacturers Association and individual flooring manufacturers recognized as leaders in the industry. In addition, DOLGE offers in evidence thousands of letters from satisfied users among schools, factories, institutions, hospitals, etc.



THESE DOLGE FINISHES BEAUTIFY, PROTECT AND PRESERVE FLOORING

Dolcorock—The DOLGE high surface or gloss finish, recommended for hardwood, cement and magnesite floors. It is ideal for gymnasium and dance floors because of its high coefficient of friction and resistance to rubber burns. Dolcorock resists heat—is virtually infusible. It resists water — is recommended for shower room floors. It is durable — stands up well under the heaviest traffic. Natural color of Dolcorock: pale amber, which can be modified as desired with Dolco Pigment Base (see below). Imagine a thin sheet of transparent rock fitted perfectly to your floor: that's Dolcorock.

Dolcovar—The Dolge seal or satin finish, recommended for hard wood, cement, magnesite, cork and unglazed tile floors, where no high surface coat is wanted. It remains even with the surface of the floor, all excess being wiped off at the time of application. Working into the pores, it shuts out discolorations. Resists heat, moisture. Natural color of Dolcovar: pale amber. When maintained with wax (see Dolcowax below) all the wear is on the wax.



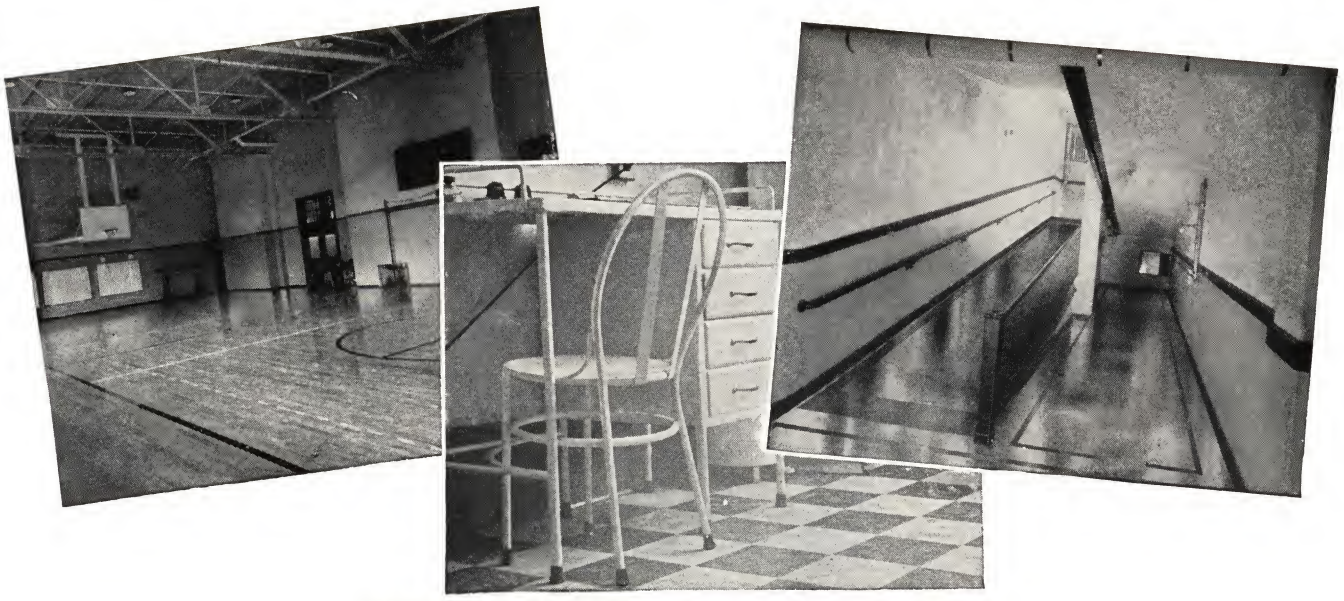
4 WAYS TO APPLY

Ease of application means money saved on the job. And these Dolge floor finishes go on so easily that no technical skill is needed to secure excellent results. Dolcorock, Dolcovar and Dolco Pigment base may be applied with lamb's wool or fibre mop, brush or cheesecloth pad. Dolcowax is applied with a lamb's wool applicator.



Dolcowax—A new-type wax, recommended for hardwood, linoleum, cork, mastic, rubber and all other floors, where a lustrous, easily-maintained wax finish is wanted. Is ready for traffic 20 minutes after application; requires no rubbing. Dries to soft lustre which is increased by dry buffing. Contains high content of genuine carnauba wax, selected for both ease of application and durability.

Dolco Pigment Base—Mixed with Dolcorock or Dolcovar for use on cement. By adding Pigment Base to either of these finishes, the desired shade of any standard color is produced. Pigment base in no way detracts from the durability of these products.



FINISHING AND REFINISHING HARDWOOD FLOORS

Preparation.—New floors should be sanded, and swept free from dirt and dust. Old floors should be similiarly sanded and swept, except where unusual conditions are encountered, in which event Dolge will furnish specifications gratis on request.

High Surface or Gloss Finish.—Apply 2 coats of Dolcorock where traffic will be ordinary; apply 3 coats where traffic will be extremely heavy. Average coverage on new floors, 600 square feet to the gallon. Dries tack-free in 6 hours, but for best results at least 24 hours should be allowed for each coat to dry. *Maintenance:* remove ordinary dirt with mop carrying trace of floor oil, such as Dolge Lustra Oil. Remove heavy dirt with mild cleaning liquids, such as Dolco Pine Cleaner or Briteway.

Seal or Satin Finish.—Apply 2 or 3 coats, depending upon porosity of floor; 2 coats are sufficient for new maple, pine or filled oak. First coat may be diluted with 10% to 25% xylol or naphtha for greater penetration. Average coverage on new floors, 600 square feet to the gallon. While Dolcovar often dries in 8 hours, at least 24 hours should be allowed each coat for best results. *Maintenance:* when surface is maintained with new-type wax, such as Dolcowax, all the wear is on the wax. If no wax surface is wanted, maintain same way as Dolcorock, directly above.

PREPARATION AND FINISHING OF CEMENT FLOORS

Preparation.—Under no circumstances should new cement be sealed or otherwise finished until at least 3 weeks after laying. Then it should be cleaned with a material such as Ban, rinsed and dried. After cleaning, it should be washed with a solution of 1 part of commercial muriatic acid in 10 parts of water to counteract remaining traces of alkali; finally it should be rinsed and thoroughly dried.

High Surface or Gloss Finish.—Apply mixture of Dolcorock and Dolco Pigment Base, with which the wanted shade of any standard color can be obtained. If amber cast is not objectionable, Dolcorock alone may be used. For other colored effects, Dolco Pigment Base alone may be used. The porosity of the floor will determine the number of coats and coverage. Troweled cement usually requires only 2 coats; cast cement usually requires 3 coats. Coverage on troweled cement averages 450 square feet to the gallon. Coverage on cast cement averages 350 square feet to the gallon. Allow 24 hours for each coat to dry. *Maintenance:* Same as for hardwood floors finished with Dolcorock (see above).

Seal or Satin Finish.—Apply Dolcovar. Troweled cement usually requires only 2 coats; cast cement usually requires 3 coats. Allow 24 hours for each coat to dry. Coverage on troweled cement averages 450 square feet to the gallon. Coverage on cast cement averages 350 square feet to the gallon.

Maintenance: Same as for hardwood floors finished with Dolcovar (see above).

FINISHING LINOLEUM AND CORK FLOORS

Preparation.—New linoleum or cork flooring should always be cleaned thoroughly with a neutral material, such as Dolco Pine Cleaner, or with Briteway Liquid. Then it should be rinsed and dried thoroughly.

Sealing.—New linoleum requires no sealing. New cork should always be sealed. Apply 2 coats of Dolcovar, and allow 24 hours for each coat to dry. Coverage will average 325 square feet to the gallon. Old linoleum can often be preserved by sealing with Dolcovar; no figures on coverage because linoleum varies so.

Waxing.—A wax surface should aways be maintained on linoleum and cork flooring. Apply 2 coats of Dolcowax on new linoleum; while the first coat will dry dust-free in 20 minutes, allow 24 hours for drying to secure best results. The second coat will require only 20 minutes to dry. Average coverage; 800 square feet to the gallon. On sealed cork, apply 1 coat of Dolcowax; coverage will average 800 square feet to the gallon. On unsealed cork, apply 2 coats of Dolcowax, as on new linoleum; coverage will average 600 square feet to the gallon.

Maintenance—Dry buffing keeps the Dolcowax surface clean under ordinary conditions. Worn areas in the traffic lanes may be recovered without overlap.

PREPARATION AND FINISHING OF MASTIC FLOORS

Preparation.—Clean with an alkaline material such as Ban, rinse with plain water and dry thoroughly.

Waxing.—Apply 1 coat of Dolcowax; coverage will average 800 square feet to the gallon.

ESTABLISHED 1906

FINNELL SYSTEM, INCORPORATED

Manufacturers of Waxing, Polishing and Scrubbing Machinery

ELKHART, INDIANA

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FINNELL ELECTRIC FLOOR MACHINES—THE ANSWER TO FLOOR CLEANING PROBLEMS

Applicable to Every Type of Floor

The Finnell Electric Floor Machines, together with a full line of Finnell accessories: Mop trucks, cleansers, sealers and waxes, will provide the proper treatment for every type of floor.

Finnell offers a series of machines specially built for large area work. Another for small congested or cut-up areas, and also a line of proved portable machines.

Finnell Machines are fast, powerful and flexible and give the greatest possible coverage in the shortest time at a remarkably low cost. Since these units are practically noiseless in operation they are the first choice of architects for use in hotels, hospitals, libraries and schools where quietness is a prime essential.



The Finnell 213P for Large Office Floors

33 Years' Experience Are Built Into All Finnell Equipment

FINNELL SYSTEM, INCORPORATED, has had 33 years of specialized experience in the design, construction and operation of equipment for floor treatment and maintenance. Every Finnell product developed through these years has been tested and proved successful under actual operating conditions. The reason for this is that quality materials and careful workmanship are built into every Finnell product. The General Electric motors and Timken roller bearings are indicative of the quality of materials used throughout.

Let Us Help You Solve Floor Maintenance Problems

Architects, engineers and other officials are invited to utilize the services offered by FINNELL SYSTEM, INCORPORATED.

Since floors represent a large investment, their proper care and maintenance is a major problem. The return on this investment depends largely upon the way the floor is treated, the right method of cleaning and subsequent treatment. Proper care consists of the right selection of equipment and the proper use of the machinery and materials. We shall be happy to advise you on the methods we have found most successful in treating your particular floor. The Finnell service, which is entirely at your disposal, consists of floor surveys (to determine areas and proper machinery), written recommendations and demonstrations with the machinery and materials recommended.

For further details see your local Finnell representative, or write to FINNELL SYSTEM, INCORPORATED, Elkhart, Ind.

The Only Complete Line of Floor Maintenance Equipment

Not only is FINNELL SYSTEM, INCORPORATED, the oldest and largest manufacturer in this field, but it is the only company offering a complete line of Electric Floor Machines, Mop Trucks, Sealers, Waxes, and Cleaners for effectively and economically maintaining and treating all kinds and types of floors and floor coverings in all classes of buildings.

FINNELL ELECTRIC FLOOR MACHINES FOR ARCHITECTURAL APPLICATION

Finnell 200 Series for Large Areas

These large units are used in skyscraper office buildings where corridors must be scrubbed on definite schedules to maintain the interior cleanliness so vital to management and rentals; in department stores where thousands of square feet of floors must be kept scrupulously clean to display merchandise; and in factories, textile mills, etc., with acres of floor space to maintain, to prevent soilage to manufactured goods.

The 200 Series automatically distributes the proper amount of scouring powder, scrubs clean, and, at the same time, removes the dirty water and emulsion from the floor. One operator will cover 25,000 to 60,000 sq. ft. in 8 hours; twice as fast as hand mopping—*ten* times faster than hand scrubbing.

For large areas, specify Finnell. For the proper size machine, consult with the Finnell Engineer or write this office.



Finnell 100 Series

Finnell 100 Series—For Congested or "Cut-Up" Areas (Shown at Left)

The intermediate sizes and types of Finnell units are used to better advantage where floor areas are congested or cut-up. The requirements of some schools, hospitals, banks, bakeries, retail stores, and hundreds of other establishments and institutions are in this class.

The Finnell 100 Series is ideally suited for this work. It is particularly suitable for schools and institutions with permanently fastened seats and desks. This type unit, in the proper size, works around and beneath low set furnishings and fixtures. It handles as easily as an electric vacuum cleaner and is designed for an interchangeable brush, reducing the larger models into small units. Two machines for one—a truly great advantage.

Finnell 300 Series—A Portable Type for Open Areas

In the Finnell 300 Series, for use in open areas, is a motor weighted brush especially adapted to polishing. Proper weight distribution in relation to thrust and brush ring speed gives a balanced operation—virtually, a fingertip control. All machines are equipped with heavy rubber bumpers for protection of interior trim and are built to render many years of exacting service.

Finnell Mop Trucks

The Finnell Mop Trucks furnish an abundant supply of clean water at the place where the mopping is in progress and a means for quickly wringing the mop. A mop shield prevents the mop from dropping into the dirty water when it is being wrung dry.

A complete line is available from which the proper size and model for each area can be selected.

Finnell 84X—For Removing Heavy Accumulations of Dirt, Oil, Etc., from All Floors (See Illustration Below)

This machine is equipped with scarifying brushes that literally cut away the hard, lumpy coatings of dirt, oil, grease, and steel filings so that they may be swept up. The wire pins (and sometimes knives) are made of music wire of various gauges; square wire with sharp edges and flat blades as used on a butcher block are also employed.



Finnell 84X

Because this machine is subjected to heavy thrusts and jars, it is equipped with oversize gears and heavy horsepowered motor. Oversize Timken roller bearings and a case hardened, polished nickel steel worm are housed in a leakproof gear case.

Brushes Are Interchangeable—Tampico or Palmetto fiber brushes may be easily exchanged for the scarifying brushes. Plates for scarifying brushes can be returned to us for refilling pins when worn.

FINNELL WAXES

Finnell Kote—A solid wax; produces best wax film possible. Applied hot.

Liquid Kote—This product is Finnell Kote in liquid form.

Cream Kote—Manufactured from same high quality materials that characterize Finnell Kote and Finnell Liquid Kote.

Liquid Wax—Recommended where conditions are such that frequent applications must be made regardless of the wax content.



Finnell 300 Series

Aqua Wax—A water emulsion carrying an unusually high percentage of genuine No. 1 carnauba.

FINNELL SEALERS

Gloss Seal No. 1—A special finish for gymnasiums, school furniture, desks, seats, church pews, bars, etc.

Gloss Seal No. 7—Same as Gloss Seal No. 1 but penetrates more deeply.

Gloss Seal No. 9—An ideal preservative and finish for wood, cement, cork, magnesite and linoleum floors.

Traffic Seal—This material is a strictly penetrating sealer; excellent for school traffic lanes.

Finnell Fulfil—A filler and sealer of the oil and wax types. Recommended for porous wood floors; rejuvenating old linoleums; treating magnesite floors.

FINNELL CLEANSERS

Finola—The original scouring powder; unsurpassed as a scrubbing compound.

Century Scouring Powder—A new Finnell product developed to meet the demand for a mild abrasive cleanser.

Solar Soap Powder—Leaves less soap deposit than cheaper products containing animal fats. No disagreeable odor.

Finnell Rubber Cleanser—Has been endorsed by the Flooring Division of the Rubber Association of America.

Setol—Recently Finnell formulated this new industrial cleaning product to be used in solution. One hundred per cent soluble in water, it dissolves oily, greasy coatings quickly and is used in either mopping or scrubbing. Seven pounds to fifty gallons of water makes a heavy-duty cleaning solution.

For Further Information—Send for This Additional Information

(1) Finnell System of Floor Maintenance—A 12 P. Catalog
(2) Exhibit Sheet Finnell 100 Series
(3) Exhibit Sheet New 200 Series
(4) Exhibit Sheet Finnell 300 Series
(5) Exhibit Sheet Finnell 84X
(6) Exhibit Sheet 118R

also sheets on Mop trucks, Accessories, Powders, Waxes, Cleaners.

	100 SERIES				300 SERIES	
Machine No.	111	113	115	118	315	319
Brush Ring Diameter	11 in.	13 in.	15 in.	18 in.	13 in.	17½ in.
Brush Spread	11 in.	14 in.	16 in.	19½ in.	15 in.	19½ in.
Brushes per Set	3	4	4	5	.....	.....
Brush Ring Speed	230 r.p.m.	230 r.p.m.	237 r.p.m.	237 r.p.m.	200 r.p.m.	160 r.p.m.
Motor G-E	¼ hp.	⅓ hp.	½ hp.	¾ hp.	½ hp.	¾ hp.
Cable B&S Gauge	No. 16	No. 16	No. 15	No. 14	No. 15	No. 14
Length	40 ft.	40 ft.	50 ft.	50 ft.	50 ft.	50 ft.
Wheels, diameter	3¾ in.	3¾ in.	4¾ in.	4¾ in.	.....	.....
Wheels, swing up	.....	.....	.....	.....	4¾ in. diam.	4¾ in. diam.
Tires, rubber	Detachable	Detachable	Detachable	Detachable	Detachable	Detachable
Water Tank on handle	1¾ gals.	1¾ gals.	1¾ gals.	1¾ gals.	.....	.....
Water Tank on machine	.....	.....	3½ gals.	3½ gals.		
Handle	.....	.....	.....	.....	Adjustable	Adjustable
Net Weight with Water Tank	1¾ gal. tank 59½ lbs.	1¾ gal. tank 66½ lbs.	1¾ gal. tank 95½ lbs. 3½ gal. tank 98 lbs.	1¾ gal. tank 112½ lbs. 3½ gal. tank 115 lbs.	....	....
Net Weight without Tank	55 lbs.	62 lbs.	91 lbs.	108 lbs.	95 lbs.	130 lbs.

HILLYARD SALES COMPANY

DISTRIBUTORS—HILLYARD CHEMICAL CO.

CABLE ADDRESS
"Hilco"

EXECUTIVE OFFICES
ST. JOSEPH, MO.

BRANCH OFFICES AND WAREHOUSES IN PRINCIPAL CITIES



Madison Square Garden—Hillyard's Wood Seal Primer and Super Gym Finish

WOOD FLOORS

Treatment with Penetrating Seal and Wax

Penetrating Seal No. 21—Thoroughly fills and seals wood floors against damage by stains, grease or dirt. It fills the pores of the wood to a depth of ¼ in., and does not build up a surface gloss, but leaves a dull, flat finish which does not show traffic marks.

Two coats of Seal and two coats of *Hil-Brite Self-Polishing Wax* produce an ideal floor for classrooms.

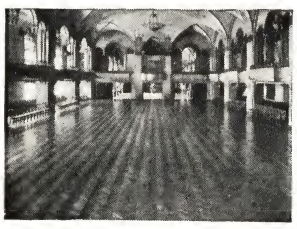
Specification No. 1—Treatment for Classrooms, Corridors, Dance Floors, etc.

(1) Close Grained Woods—After floor has been sanded to proper smoothness, the surface shall be swept clean and then rubbed with cloths wrung out of naphtha and fastened on the block of a large push broom to remove all dust, sand and grease. Immediately on clean, dry floor apply two coats of *Hillyard's Penetrating Seal No. 21,* allowing at least 24 hours to elapse between coats. Each coat of Penetrating Seal No. 21, when dry, shall be steel-wooled, using No. 3 steel-wool brushes on an electric polishing machine (such as *"Hillyard's Steeltonian"* or *Hillyard's Scrubbing and Polishing Machine).*

(2) Open Grained Woods—*Oak*—Immediately after sanding and cleaning, floor shall be filled with *Hillyard's Paste Wood Filler,* after which one coat of *Penetrating Seal No.* 21 shall be applied and steel-wooled after drying 24 hours.

(3) Wax Finish—All areas shall be swept free of dust and dirt, and two coats of *Hil-Brite Self-Polishing Wax* shall be applied according to directions to be furnished by the manufacturer, HILLYARD CHEMICAL COMPANY, St. Joseph, Missouri.

(4) Maintenance of Sealed Floors—When worn or dirty spots appear, apply *Hillyard's Buffing Seal* rather sparingly and buff immediately with No. 3 (coarse) steel-wool or No. 2 (medium) steel-wool, using an Electric Steelwooling Machine such as *Hillyard's Steeltonian,* or an Electric Scrubbing Machine (with steelwool plates) such as *Hillyard's Lowboy Scrubbing and Polishing Machine.*



Ball Room, Statler Hotel, Boston, Mass.

GYMNASIUM FLOORS—(WOOD)

Treatment with Super Gym Finish

Hillyard's Floor Finishes enjoy a nationwide popularity backed by more than a quarter century of practical experience. Thousands of gymnasiums throughout the United States are using *Hillyard's Super Gym Finish*—a high quality bakelite finish that is lustrous, long wearing, elastic and non-skid.

The price of a gymnasium floor is measured not by first cost, but by average expense over a period of years.

Specification No. 2—Treatment for Gym Floors

Floor shall be sanded to a smooth surface, using No. ½ or No. 0 sandpaper for finishing. Immediately after sanding, floors shall be swept clean, removing all dust and dirt before application of the floor finish.

First Coat: *Hillyard's Wood Primer,* spread evenly and rubbed or brushed thoroughly. All markings for athletic games shall be painted on top of this prime coat (the layout to be exact and to be approved by architect or proper school authority).

Second and Third Coats: Hillyard's Super Gym Finish. Twenty-four hours shall be allowed for all coats to dry properly. (The Primer coat and first coat of Finish shall be steel-wooled.) Also, before the application of Primer and Finish the surface shall be rubbed with naphtha cloths as in Specification No. 1.

Note: A diagram of official gymnasium markings will be furnished on request by HILLYARD SALES COMPANY, St. Joseph, Mo.

TERRAZZO

Treatment with Terrazzine Process

Endorsed by the National Terrazzo and Mosaic Association, and recommended by prominent architects and terrazzo contractors. A terrazzo floor properly installed requires slow curing.

Terrazzine—by sealing the moisture into the floor—retards the curing process from 15 to 20 days, thus insuring uniform and thorough hardening.

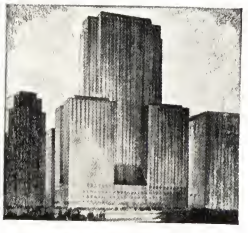
Terrazzine prevents pitting, dusting and checking, brings out the rich colors in the floor, seals against stains, produces a brilliant non-slippery finish when polished.

Specification No. 3—Terrazzine Treatment

Immediately after the Terrazzo has been "rough stoned," apply a liberal coating of *Terrazzine* according to directions furnished by the manufacturer, HILLYARD CHEMICAL COMPANY, St. Joseph, Mo.

This treatment shall be allowed to remain on the floor for at least 15 days and until other trades have completed their work. The surplus Terrazzine shall then be removed by "fine stoning" the floor until a smooth, finished surface is produced.

All grinding dust and dirt shall be removed by the contractor by thorough washing with such cleaning agents as are recommended by the manufacturer. In no case shall harsh abrasives or caustic soap powder be used in cleaning this terrazzo floor.



New Marshall Field Building, Chicago, Ill.
Treated with Terrazzine Process

Ask for Free Catalog and Maintenance Manual containing valuable information on Floor Finishes and Building Maintenance

HIGHEST QUALITY FLOOR FINISHES AND TREATMENTS

More Than Thirty Years of Dependable Service

A nation-wide organization that provides personal supervision of the new job, also proper schooling in correct maintenance of the finished job

TILE

Treatment with Shine-All and Onex-Seal

Shine-All (a neutral Chemical Cleaner) not only thoroughly cleans all ceramic, faience and vitreous tile, but leaves a light, protective film which serves to protect the face of the tile and produces a brilliant sheen.

Shine-All contains no abrasives nor caustic chemicals; hence does not injure nor discolor tile surfaces, nor cause pitting or checking. Regular use of Shine-All simplifies the cleaning process, cuts cleaning costs and insures lasting beauty of tile floors.

Specification No. 4—Treatment for Tile

Quarry Tile—Just before final inspection, Quarry Tile floor shall be thoroughly cleaned with steel wool, using a solution consisting of 1 part *Shine-All neutral Chemical Cleaner* to 7 parts warm water. After floor becomes thoroughly dry, a treatment of *Hillyard's Onex-Seal Finish* shall be applied, strictly according to directions as furnished by the manufacturer, HILLYARD CHEMICAL COMPANY, St. Joseph, Mo.

Ceramic, Faience and Vitreous Tile—Just prior to final inspection, all ceramic, faience and vitreous tile areas shall be cleaned by scrubbing with a solution consisting of 1 part *Shine-All neutral Chemical Cleaner* and 7 parts water. (This strong solution for first cleaning only.) Do not rinse after scrubbing. When floor becomes thoroughly dry, buff with electric polishing machine.

ASPHALT TILE

Treatment with Hil-Brite Self-Polishing Wax

Recommended by foremost asphalt tile manufacturers. *Hil-Brite* penetrates and seals the floor against grease and dirt, forms a tough, protective coating, provides a brilliant finish without buffing, dries bright in 20 to 30 minutes, does not water spot, is not slippery.

Specification No. 5—Treatment for Asphalt Tile

(1) Immediately after Asphalt Tile floor has been laid, and prior to any traffic, all excess cement shall be removed and floor swept clean. A solution consisting of equal parts of warm water and *Shine-All neutral Cleaner* shall then be spread on floor and allowed to dry.

(2) Just before occupancy of building, floor shall be scrubbed with a solution of 7 parts warm water and 1 part *Shine-All.* Then rinse thoroughly with clear water.

(3) When floor is completely dry, apply two coats of *Hil-Brite Self-Polishing Wax* according to directions to be furnished by the manufacturer, HILLYARD CHEMICAL COMPANY, St. Joseph, Mo.

(4) If wax finish is not desired, apply evenly on clean, dry floor after operation 2 a solution of 40% *Shine-All* and 60% water, and allow to dry. Then buff with electric polishing machine.

LINOLEUM, LINOTILE AND RUBBER TILE

Treatment with Hil-Brite Self-Polishing Wax

Leading manufacturers of linoleum, linotile and rubber tile have endorsed *Hil-Brite* because it is easily applied, dries quickly, produces a beautiful finish without buffing, withstands traffic to a remarkable degree and seals the floor. It does not water spot.

Specification No. 6—Treatment for Linoleum, Etc.

(1) Immediately after completion of floor thoroughly clean with *Shine-All neutral Cleaner* (1 part Shine-All to 7 parts warm water). Then rinse and allow to dry.

(2) On the clean, dry floor apply two coats of *Hil-Brite Self-Polishing Wax* according to directions to be furnished by manufacturer, HILLYARD CHEMICAL COMPANY, St. Joseph, Mo.

WOOD FLOORS

Treatment With Buffing Seal

Hillyard's Buffing Seal fills and seals the pores of a wood floor, preventing penetration of moisture, stains and dirt, and producing a smooth, non-skid surface which is easily cleaned by a light buffing with the *Steeltonian Machine* or with *Hillyard's Automatic Cotton Floor Brush.*

Specification No. 7—For Classrooms, Corridors, Stores, etc.

(1) New Floors—*First Coat*—Sweep floor thoroughly, then make liberal application of *Hillyard's Buffing Seal,* leaving surplus amount on surface. After one hour buff with No. 3 steel-wool, using *Hillyard's Steeltonian Machine.*

Second Coat—Apply as before (medium heavy). Let stand 30 minutes, then buff until smooth, lustrous surface is produced.

(2) Old Floors—Dirty or oil-soaked floors shall be thoroughly swept and a medium light coat of *Hillyard's Buffing Seal* shall then be applied. Work a small area at a time. Within ten minutes buff dry with No. 3 steel-wool, using an Electric Steel-wooling Machine such as *Hillyard's Steeltonian.*

Then apply second coat of *Hillyard's Buffing Seal* (using liberal amount) and allow to stand 20 to 40 minutes to insure maximum penetration. Buff well with No. 3 steel-wool, as before, until a pleasing lustre is produced. If a higher polish is desired, allow second coat to set up for 24 hours and apply two coats of *Hil-Brite Self-Polishing Wax.*

"STEELTONIAN" STEEL WOOLING MACHINE

This powerful, high speed (drum-type) Steel Wooling Machine fully meets needs of schools, stores, bakeries, hospitals and public buildings where traffic conditions are most severe. Correct mechanical principles and rugged construction fit the *Steeltonian Steel Wooling Machine* for heaviest work or for fine polishing.



Special Features—¾ hp. G-E motor (developing 2 hp.). Buffing drum—10-in. width—speed 950 r.p.m. Lubricated for life of machine. Frame—welded steel, one piece. Built-in dust collector.

Full particulars sent on request.

THE "HILTONIAN LOWBOY" SCRUBBING AND WAXING MACHINE

Leads the field in utility, efficiency and economy. Correct mechanical principles and low, compact construction combine to produce a machine that is silent in operation, perfectly balanced, easy to handle, steady and straight running.

The *"Hiltonian Lowboy,"* being a "multiple" brush machine, does a thorough job of scrubbing, waxing or polishing in less than ordinary time.

Furnished in four sizes: 21-in. Lowboy for heavy duty, 16- and 15-in. Lowboys for medium work, and 12-in. Lowboy for small jobs.

"Hiltonian Lowboys" *sell for less* and *do more.* Write for descriptive literature and specifications.



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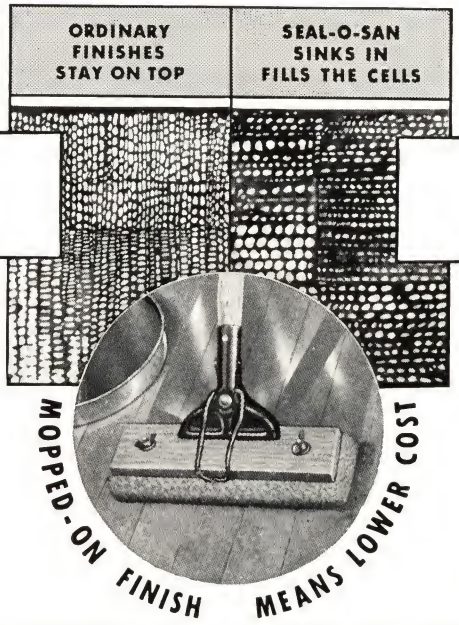
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TWO SPECIAL FLOOR FINISHES MADE EXPRESSLY TO WITHSTAND HARD USAGE

For an Easily Applied Economically Maintained Non-Slippery Gymnasium Floor Finish.

For Classroom Floors, Corridors, Auditoriums, and all areas subject to Heavy Traffic



GYMNASIUM SEAL-O-SAN

Gymnasium Seal-O-San is made expressly for gymnasium floors. The free-flowing compound fills and hardens the wood fibres at the surface of the floor and thus prevents grease, dirt or rubber burns from penetrating the surface. It produces a beautiful, long-wearing surface, 100% non-slippery.

Seal-O-San has been tested and approved on more than 4000 gymnasium floors. In Indiana—the home of basketball—more than 90% of all gymnasium floors are finished with Seal-O-San.

POSITIVELY NON-SLIPPERY—The outstanding feature that makes Seal-O-San the leading gymnasium floor finish is its ability to make the floor 100% non-slippery. The permanent seal is flexible without tackiness. That is why it provides a non-skid surface easily gripped by the basketball shoe. This non-slippery seal permits players to stop and turn suddenly without danger of skid or fall.

Since the Seal-O-San finish is flexible, it will not chip, crack or soften under friction. That is why it can withstand the abuse of countless gymnasium activities.

EASILY MAINTAINED—Floors finished with Gymnasium Seal-O-San or Penetrating Seal-O-San can be kept in perfect condition with a minimum of expense. Because dirt, stains, rubber burns, etc., remain on the surface of the floor, they can easily be removed. Expensive scrubbing is seldom necessary.

To keep the beautiful Seal-O-San finish looking like new, all that is needed is an occasional dry cleaning with a mop.

PENETRATING SEAL-O-SAN

Penetrating Seal-O-San, like Gymnasium Seal-O-San is a specially prepared floor finish that is applied with a mop. It contains hard-drying oils and waterproof resins which penetrate deeply into the wood and become part of the floor. Since it leaves no surface film to scratch or break down, Penetrating Seal-O-San is ideal for use in areas subject to extremely hard wear.

Ordinarily, two coats of Penetrating Seal-O-San will seal the floor and give it an attractive dull sheen resembling hand-buffed furniture.

WHERE TO USE IT—Penetrating Seal-O-San may be used on new floors, or on old resanded floors. Also on untreated, cleaned floors.

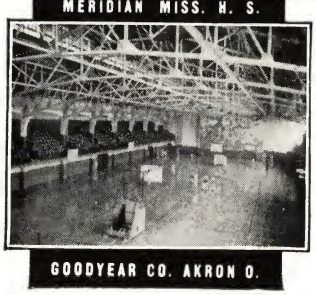
Architects will find in Penetrating Seal-O-San a floor finish particularly adapted for projects where the floor to be treated cannot be closed to traffic for any great length of time. Because floors treated with Penetrating Seal-O-San can, if necessary, be turned over to traffic within a few hours after the application of the first coat. The second coat can then be applied when convenient.

ADVANTAGES OVER SURFACE FINISHES—Architects taking decorating bids will assure themselves of lower figures by specifying Penetrating Seal-O-San. Because Penetrating Seal-O-San, applied with a mop, offers tremendous savings over costly hand brushed finishes. Coverage is generous, app. 250 sq. ft. to the gallon for a 2 coat application.

Any traffic scratches, spots, etc., can be removed by buffing the affected area only, with steel wool.



MERIDIAN MISS. H. S.



GOODYEAR CO. AKRON O.

OUTLINE SPECIFICATIONS

Materials and Workmanship

All wood floors (indicate location) shall be finished with Penetrating Seal-O-San as manufactured by the Huntington Laboratories, Inc., of Huntington, Indiana, and shall be applied strictly in accordance with manufacturers directions. (All gymnasium floors, hand-ball court, and squash-court floors shall be finished with Gymnasium Seal-O-San.)

Preparation

Sanding of a new wood floor that is to be treated with Seal-O-San shall begin with No. 3 paper, going over the entire floor. Finish with a fine grade of sandpaper.

Floors previously finished with varnish or seal shall first be sanded with No. 3 Open Coat paper, then finished with No. ½ paper.

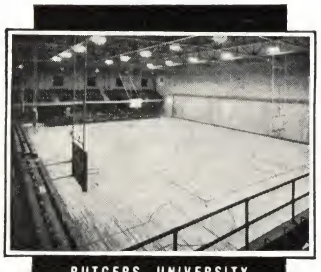
Remove all sanding dust from floor.

Application

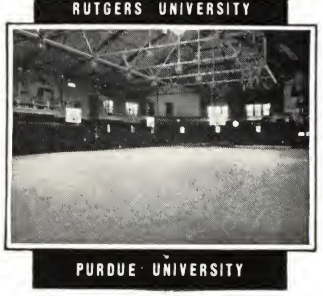
Immediately after sanding, spread Penetrating Seal-O-San over the floor, along the grain of the wood, in a thin uniform coat. Squeegee first coat dry, then burnish lightly with No. 2 steel wool. Apply second coat in same manner. (Note: Gymnasium Seal-O-San is applied in same way except that first coat is sanded lightly with No. 1 paper. Basketball court lines shall be painted when first coat is dry.)

It is advisable to wax floors treated with Seal-O-San or Penetrating Seal-O-San, if floors are used for general purposes. Never wax a gymnasium floor.

Prices, samples, and a complete list of installations will be furnished on request. Our trained consultants strategically located in all sections of the country are at your service.



RUTGERS UNIVERSITY



PURDUE UNIVERSITY

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JOHNSON'S FLOOR FINISHES

For Schools, Hospitals, Apartments, Office Buildings, Stores, Etc.

For Durability—Ease of Maintenance—Maximum Beauty

JOHNSON'S QUICK DRYING PASTE WOOD FILLER—To fill the myriad pores of oak or other open-grain wood to give a smooth, even foundation for the finish.

JOHNSON'S PENETRATING FLOOR SEALER—Seals the surface and supplies the necessary body for the finish coats. Gives the greatest amount of protection without a thick, scratchable body. The protective film lies in the wood or linoleum flooring, not *on* it.

JOHNSON'S TRAFFIC WAX (Paste)—Imparts maximum beauty. Nothing approaches the exquisite lustre of polished wax which stays beautiful because unsightly scratches and heel marks rub out. It makes cleaning easy. Dust simply wipes off the waxed surface—eliminates practically all scrubbing. To simplify upkeep, traffic spots can be polished or re-waxed as needed without going over entire floor. Protects finish and greatly reduces costly refinishing.

JOHNSON'S NO-BUFF FLOOR FINISH—A liquid finish which requires no buffing or polishing.

APPLICATION SPECIFICATIONS—WOOD AND LINOLEUM

(1) OAK (OR OTHER OPEN-GRAIN WOODS) FILLER

Fill wood with No. 15 Johnson's Quick Drying Paste Wood Filler. Allow the filler to set, but before it has hardened, wipe off (across the grain) any surplus from the surface. Filler shall be of such color as to produce the effect required to match the approved samples. Allow filler to dry 24 hours before sealer is applied.

(2) CLEANING OLD LINOLEUM

Clean thoroughly and allow to dry. Use a mild neutral cleaner and rinse. Make certain that all wax is removed.

(3) SEALING

Note: *Most linoleum is sealed before it leaves the factory—that is, the upper layers are bound together with a tough film which resists traffic and prevents soil and stain from penetrating. If the seal has not been worn through, sealing may be omitted.*

Note: *All wood floors should be sealed. Oak or other open-grain woods should be first filled as in par. 1. Close-grain woods, such as maple, birch, pine and beech, need no filler.*

Seal floors with 1 coat of Johnson's Penetrating Floor Sealer. Floor Sealer shall be brushed or mopped onto floor in full even coat. After 15 minutes, wipe with clean rag to remove Sealer which has not penetrated—leave no "bright spots." Allow to dry 8-10 hours and apply second coat, if needed, in same manner.

On Wood—After last coat has dried for 6 hours, it may be buffed with No. 3 steel wool under a wire brush. This procedure is not necessary but produces a beautiful satiny effect.

(4) WAXING

Note: *Either a spirit solvent wax which requires polishing or a self-polishing material can be used.*

Polishing Wax—Apply 2 coats of Johnson's Traffic Wax (Paste). Be sure each coat is allowed to dry a half-hour or longer before it is polished and a couple of hours or more allowed between coats. Use a high-speed electric polisher for buffing as it will give a harder, more burnished effect than hand methods.

Note: *Johnson's Traffic Wax Paste is recommended for this original finish. Liquid Wax will be found easier for subsequent cleaning and maintenance.*

No-buff Floor Finish — Apply 2 coats of Johnson's No-buff Floor Finish. Apply in a full even coat and allow to dry (approximately 20 minutes). Second coat may be applied as soon as first is thoroughly dry.

MIDLAND CHEMICAL LABORATORIES, INC.

Manufacturers of Floor Preserving and Finishing Materials

DUBUQUE, IOWA, U. S. A.

The definite trend toward more attractive floors has led to the founding of many companies producing floor treatments. The resulting competition has led, in many cases, to a decrease in quality in order to decrease price.

The MIDLAND CHEMICAL LABORATORIES, INC., has progressed since its founding, more than a third of a century ago, on the sole basis of highest quality products and finest service.

Our research laboratory is constantly experimenting and testing Midland products in an effort to improve wherever possible. You may specify Midland Products with absolute assurance that the results you desire will be obtained.

MIDLAND GYMLOH

Use—On wood, or composition gymnasium floors.

Description—A special treatment for gymnasium floors containing a high percentage of bakelite and tung (chinawood) oil. Acts as both a seal and finish. Gymloh is non-slippery and affords wonderful traction, will not hold rubber-burns. This finish will not peel, craze, alligator or flake and is very resistant to heat, alkali, alcohol, dilute acids, boiling water and stands excessive use. Dries to a beautiful lustre which does not darken light colored floors.

Coverage—Wood: 600 sq. ft. per gallon, one coat; 350 sq. ft. per gallon, two coats.

MIDLAND LOHSEAL

Use—On wood, composition, linoleum, cork, masonite and concrete.

Description—Effective, practically colorless, pore and fibre seal. Applied with either a lambs wool or felt mop. Excellent as a seal or a base for a wax treatment. It dries within a few hours.

Coverage—Wood: 400 sq. ft. per gallon, two coats.







The above illustrations and those opposite show the operations in preparing, finishing, and maintaining modern floors.

These phases of maintenance are covered completely in our Architect's Floor Manual, AIA File No. 231, which will be sent free at your request on your letterhead.

MIDLAND EV-R-GLO WAX

Use—Unexcelled for waxing and maintaining wood, linoleum, rubber, terrazzo, composition, asphalt tile and other types of modern flooring.

Description—A water emulsion wax which, when dry, resists water, thus eliminating unsightly water spots, Dries with a polish—does not require buffing—easily applied with a lambs wool applicator—very economical, since the wax film is not affected or removed by water mopping—made with the highest grade No. 1 N C Carnauba Wax.

Coverage—1000 to 3000 sq. ft. per gallon, one coat, depending on the type of flooring.

MIDLAND MID-SEAL

Use—On marble, terrazzo, unglazed tile, slate and similar flooring materials.

Several treatments will eliminate the dusting of concrete floors.

Description—A seal and waterproofer which protects the flooring from daily traffic. Polishes to an attractive luster.

Coverage—Terrazzo: 800 sq. ft. per gallon, one coat.

MIDLAND MID-CEDAR DUST LAYER

Use—For mop sweeping any type of floor.

Description—A volatile, non-slippery, non-greasy, non-sticky cedar oil preparation which is not injurious to floor finishes. To be used with the dry mop method. It polishes, cleans and picks up all dust quickly and efficiently.

TILEOLEUM (LIQUID AND POWDER)

Use—Excellent for cleaning tile, marble, terrazzo, slate, concrete and composition floors. Not recommended for use on rubber floors.

Description—There are three types of Tileoleum:

Tileoleum Sassafras, a mild liquid with powerful cleansing action, scented with sassafras.

Tileoleum Pine, a liquid cleanser for use in making stock scrubbing solutions. It contains pine oil.

Tileoleum Powder, a finely granulated, powerful preparation for use in removing rust, paint and metal stains from Tile, Terrazzo and Marble floors and walls.

Midland Tileoleums will not attack or affect the bond or tone of delicate, colorful installations.

MIDLAND CLEANSOLEUM

Use—On practically every type of modern flooring, especially adapted for linoleum and cork floors.

Description—A neutral cleansing compound which contains no acids. The action is not a burning but rather a dissolving and tearing down of soil deposit; the surface and body of the floor is not attacked in any way.

Midland
MAINTENANCE
SERVICE

Founded to aid and advise, without cost or obligation toward more economical and efficient maintenance.







CO-OPERATIVE SERVICE

The Midland maintains a Service Division which will gladly co-operate with you by offering advice and suggestions on any problems relating to finishing or maintaining modern floors. This service is extended to all architects. We ask that you use this service as often as necessary, there is no cost or obligation.

MINWAX COMPANY, INC.

Wood Finishes and Masonry Coatings

11 West 42nd Street
NEW YORK, N. Y.

BRANCH OFFICE: CHICAGO, ILL.

FACTORY: DELAWANNA, N. J.

Products

MINWAX FLAT FINISH.
MINWAX FINISHING WAX.
MINWAX BRICK AND CEMENT COATING.
MINWAX ALKALOX, A BASEMENT FLOOR PAINT.

For pages on Minwax Waterproofing and Dampproofings, and Caulkings, see File Index or Waterproofing Section.

Engineering Service

Our experience equips us with special engineering knowledge on application of our product, which we offer without reservations, to those seeking satisfactory results.

We have representatives in the principal cities; for address consult local telephone directory.

MINWAX METHOD OF WOOD FINISHING

Brings Out the Natural Beauty of the Wood

The Minwax method is the superior way of securing a truly lasting and serviceable lustrous wax finish, that brings out all the natural beauty of the wood. It does this easily, with certainty and at a minimum cost, and differs from all ordinary methods of finishing: First, by adapting to modern conditions the "old time" principle of placing the finish *in the wood,* making it an actual part of the wood itself, instead of merely on the surface where it can be easily marred and spoiled. Second, by greatly simplifying application by combining the complete treatment — preserving, protecting, staining (if desired) and finishing, all in one easily applied material. Because Minwax Flat Finish goes into as well as on the wood itself, the surface possesses non-slip characteristics and the finish is patchable and must last until the wood is actually worn down. Through over twenty years' service, time and hard usage have proven that, like the "old time" finishes, Minwaxed surfaces mellow and grow in beauty with only usual simple care.



Residence, Coraopolis Heights, Pa. *Chas. & Edw. Stotz, Architects*

Minwax Flat Finish Develops the Full Natural Beauty of Wood

Minwax Flat Finish is Made in Two Types

The basic material of the Minwax method is Minwax Flat Finish, which is made in two types, and in Transparent and Masking colors.

(1) (Standard Type) Minwax Flat Finish — Cures more slowly, penetrates deeper and gives a soft luster rather than a high polish. Made only in transparent colors. Waxing with Minwax Finishing Wax is optional *after* a curing period of two weeks.

Recommended for: Standing trim, exterior half-timber, and for floors where soft polish is desired, also for school and industrial flooring.

(2) Minwax Quick Drying Flat Finish—Cures quickly, offers wider choice of colors, gives higher polish and harder finish. Made both in transparent colors and masking colors. Waxing with Minwax Finishing Wax after 12 hours is always recommended.

Recommended for: Residential and apartment floors and for interior woodwork paneling and furniture.



For Residences
Res., Poundridge, Conn. *W. B. Kirby, Archt.*



For Schools
New Rochelle High School. Guilbert & Betelle, Archts.



For Housing
Hillside Homes, New York. Clarence Stein, Archt.

COLORS AND SPECIFICATIONS

Transparent Colors for Floors, Woodwork and Paneling

The following clear, transparent colors are produced in *both standard type Flat Finish and Quick Drying Flat Finish.*

Natural—The clear natural finish. It emphasizes slightly the colors of the wood.

Natural Oak—The lightest brown stain color. Adds just enough color to develop the character and natural beauty of the wood.

Golden Oak—A light golden stain color. Gives a bright pleasing color for those desiring light floors or straw or light honey tones on pine.

Light Oak—A medium warm brown stain color, one which emphasizes the grain pattern a little more strongly.

Dark Oak—A deep, rich, full toned brown stain color that on oak gives a medium dark floor or wood work.

Dark Walnut—The darkest of the transparent stain colors. A deep warm brown walnut stain that strongly emphasizes the grain.

Masking Colors for Paneling, Woodwork and Furniture Only

The following colors are pigmented and tend to produce a more uniform, even tone. These colors are *not* recommended for floors. *Made only in Quick Drying Flat Finish.*

Ipswich Pine—This color, especially recommended for pine, gives the honey brown color associated with aged pine paneling. Developed after a study of the original paneling in the American Wing of the Metropolitan Museum of Art, this color is deservedly popular. Color easily made lighter with No. 209 Natural Quick Drying Flat Finish.

Driftwood—A gray stain recommended for pine that gives gray overtones over a smoky light brown ground. A light stain that holds the grain and texture of the wood.

Colonial Maple—A stain which on birch or maple gives the fine brown honey tones of old maple.

Cape Cod Maple—Recommended for birch and maple furnitrue, this stain is the reddish or cherry maple color.

Special Walnut—A cool brown deep walnut stain color for birch or maple furniture or paneling, and for where wood needs to be brought to a uniform tone.

Red Mahogany—This is the traditional red mahogany in a stain that produces a uniform tone. Must be well cured before waxing.

Residential Floors

Advantages—The finish produced under the following specification offers several advantages:

(1) A beautiful wax finish of whatever color desired.

(2) A finish that will not mar or scratch.

(3) A wax finish that is not dangerously slippery.

(4) A finish that eliminates future rescraping; because it is patchable as to color and finish.

(5) A finish that improves with usual care.

A finish that is approved and endorsed by the National Oak Flooring Mfrs. Association.

Specifications—*Preparation*—When other trades have finished work, the floors shall be scraped smooth and clean, using not less than three grades of paper, finish cut to be No. 00 paper or finer. Surface shall be swept free from dust.

For High Polish and All Refinishing Specify Quick Drying Type—Apply two thorough coats of Minwax Quick Drying Flat Finish, color as selected, wiping each to remove surplus and to even out, in not less than ten minutes or more than twenty minutes. Apply one coat of Minwax Finishing Wax (Paste) and buff to a satisfactory lustre with electric polishing machine. Twenty-four hours shall be allowed between coats. Protect floors with building paper pasted at laps.

Softer Polish and Maximum Penetration, Specify Standard Type—Apply thorough flow coat of Minwax Flat Finish (Standard Type), color as selected. After two to four hours wipe *thoroughly* with rags removing all excess. Repeat for second coat when dry, 12 to 24 hours. Wipe second coat thoroughly rubbing to dry polish. Allow 24 hours for drying and polish with electric polishing machine. Protect floors with building paper pasted at laps.

Note: For apartments, etc., we recommend "comeback" form of specification: Omit polishing above specified and add following paragraph: When apartment is ready for occupancy this contractor shall remove paper, clean floor thoroughly with rags or steel wool as necessary. Apply one coat of Minwax Liquid Finishing Wax and polish with electric machine.

Note: Fillers are not necessary but can be used if desired, in which case apply in usual manner after first coat of Minwax Flat Finish.

Refinishing Old Floors—The preceding specifications apply to this work. Quick Drying Flat Finish is recommended.

On Floors (School and Industrial)

Advantages—The finish created under the following specifications offers the following advantages:

(1) A finish that will resist penetration of dirt even where dust laying oils are used.

(2) Which being penetrative will add maximum protection and resistance to wear.

(3) Which because of its mineral wax character is resistant to all chemicals.

(4) Which is approved and endorsed by Maple Flooring Manufacturing Ass'n.

Specifications—*Preparation*—See paragraph under Residential Floors. *Specify Standard Type Natural No. 9 only. Stain colors not recommended for maple, beech or birch floors.*

All maple floors shall receive two coats of Minwax Flat Finish No. 9, as follows: *1st Coat*—Immediately after the final sanding apply one liberal coat of Minwax Flat Finish No. 9 (about 600 sq. ft. per gal.) with a brush or mop, after about twenty minutes even up and spread out any surplus, close off floor for 24 hours. *2nd Coat*—After other trades have completed their work, thoroughly sweep and dust the surface and apply a second coat of Minwax Flat Finish No. 9 (about 900 sq. ft. per gal.). Buff while wet with No. 3 steel wool to loosen up dirt and remove stains. Remove all surplus together with dirt and stain, wiping thoroughly with rags. 24 hours later, polish thoroughly with polishing machine padded with No. 1 steel wool and close off floor for 24 hours before use.

On Trim and Paneling

Advantages—The finish produced by the following specifications offers several advantages.

(1) A finish that develops the natural beauty of the wood.

(2) That is simple, easy and economical to apply.

(3) That gives rubbed wax effects quickly and economically.

(4) That is immensely serviceable under hardest service conditions.

(5) That will not scratch or mar and that can be maintained or renewed with minimum effort.

(6) Approved by Western Pine Ass'n and Southern Cypress Ass'n.

Specification—*Preparation*—Wood shall be clean free from all shellac, varnish or other finish. Immediately prior to application sand all surfaces with No. 0 sandpaper or steel wool removing all hair grain and leaving perfectly smooth surface.

In General Specify Standard Type Flat Finish for Trim, and on Outside Woodwork Standard Type Only.

Apply two coats of Minwax Flat Finish (Standard Type) color as selected, wiping to remove excess as directed and rubbing final coat to a dry polish. Allow 24 hours between coats.

Where Color Is Made Only in Quick Drying Type (as Ipswich Pine) or where, because of the type of wood, masking colors are needed, specify Quick Drying Type.

Apply two coats of Minwax Quick Drying Flat Finish, color as selected, wiping to remove excess as directed by manufacturer. Apply coat of Minwax Liquid Finishing Wax and polish. Allow 24 hours between coats.

MINWAX BRICK AND CEMENT COATING

Preserves, Beautifies and Waterproofs all Masonry Surfaces

Minwax Brick and Cement Coating differs from all paints in that it has been developed from Minwax Clear Waterproofing. This is one of the oldest and most efficient mediums for waterproofing exposed masonry. From this product the vehicle for Minwax Brick and Cement Coating has been developed, adding to its basic waterproofness the ability to carry color uniformly, to flow smoothly and evenly under the brush, while retaining its tendency to penetrate and bite deeply into the pores of the masonry. This penetrative quality of the vehicle is fundamentally important, making the coating part of the surface and places the waterproofing deep into the masonry.

Selection of a coating for structures is based on several important requirements. First, its ability to truly waterproof the surface, to protect the masonry and to prevent and reduce stain and dirt collection. Second, to produce a uniform, natural, clean appearance that holds the texture and architectural character of the masonry. Third, to give long life and minimum renewal and maintenance cost. Since 1909 Minwax Brick and Cement Coating has been demonstrating to architects and owners its superior ability to meet these requirements.



Minwax Brick and Cement Coating Used in the Plant of Hoffman-LaRoche Co., Nutley, N. J.

Specifications

General—(1) Surfaces to which Minwax Brick and Cement Coating is to be applied should be thoroughly cured, sound, free from dust, sand, scale or other loose material and thoroughly dry when the material is being applied.

(2) Apply .... coats of Minwax Brick and Cement Coating, colors as selected, with brush or air spray, allowing 24 to 48 hours between coats. Thin first coats as directed with Minwax B. & C. Thinner only; apply final coat straight without thinning or adulteration.

(3) Do not apply this material in wet or foggy weather or when outside temperature is below 45° F. When work is interrupted by rain, permit surface to dry thoroughly before continuing. Store material in a warm place.

Extent of Work—On all exterior masonry extend the coating work in such a manner as to prevent the possibility of moisture getting into the wall back or above the treated surfaces. Coat right up to the eave boards or over the coping and down the back of parapets to roof flashing. Inspect window frames and where there is an open joint caulk with Minwax Caulking Compound.

Number of Coats—Two coats will give excellent results under most conditions. *In all cases* to assure uniform color "touch up" of suction spots which show light after first coat, is important. *Three coats* are recommended for very porous surfaces, as *common brick,* for severe exposures as *swimming pools,* etc., and where maximum life and service is desired.

Covering Capacity—200 to 300 sq. ft. per gallon per coat.

Colors—White, Cream, Yellow, Caenstone, Limestone, Terra Cotta, Brownstone, Cement Grey, Green, Blue, Brick Red.

MINWAX ALKALOX

The Alkali-Proof Paint Unaffected by Dampness

Alkalox is a paint specifically designed for use on basement floors where dampness and alkalies make results with ordinary coatings uncertain or unsatisfactory.

Alkalox possesses the following qualities:

(1) Will *dry* normally and quickly in basements.
(2) Will *not* be softened or made sticky by dampness in concrete.
(3) Will *not* be stained or burned by alkalies.
(4) Will *not* be injured by condensation.
(5) Will withstand alcohol, acids, lye, gasoline.
(6) Will stand up *outdoors* as well as inside.
(7) Is approved for exposed Transite, asbestos shingles, etc.

Alkalox possesses these qualities because it is made with new synthetic gums adapted to this use by our more than 30 years' experience in this field.

The alkali-proof quality of Alkalox is clearly shown by Pittsburgh Testing Laboratory Report No. NY-32749, dated May 17, 1937, from which the following summary is taken.

Uses—While designed specifically for basement floors the remarkable chemical resistance of Alkalox makes its use desirable in many other hard-to-paint conditions: garages, filling stations, dairies, chemical plants, battery rooms, for Transite, asbestos shingles, etc. Alkalox is equally effective outdoors or inside.

Colors—Alkalox for floors is made in four standard colors: Tile Red, Medium Gray, Linoleum Brown, Forest Green; also for Transite in a Flat White which can be tinted with limeproof colors in oil.

Specification—*Preparation of Surface*—*New Floors* shall be clean, free from oil, wax or grease. Wash surface with 10% solution muriatic acid, rinse thoroughly and allow floor to dry before proceeding. Do *not* use zinc sulphate or other neutralizer. *Old Floors Unpainted:* Wash as necessary to remove oil, wax or grease with strong alkaline cleaner or lye, rinse and proceed as above for New Floors. *Painted Floors:* We recommend removal of old paint with lye or alkaline remover, rinse and proceed as above for New Floors.

Application—Apply two or more coats, thinning first coat as necessary (generally 10-20%) with Alkalox Reducer and brushing well into surface. Apply second and subsequent coats with full brush flowing on coating. *Avoid unnecessary brushing out,* thinning second coat slightly if necessary to assure easy brushing. Allow twenty-four hours between coats and before using surface.

Caution—Alkalox can be applied to damp surfaces only when there is some suction to the surface and drying conditions prevail. It is not recommended for soaking wet surfaces, or to prevent leakage, or against water-pressure coming behind coating.

Report of the Pittsburgh Testing Laboratory on the suitability of Alkalox for use on new, green concrete and to resist moisture working in from the back.

Quotation is from Report No. NY 32978, dated May 17, 1937:

"Slabs of 1:2:4 concrete were cast and after twenty-four hours were coated with Alkalox and set with their underside in water." (That is, green, new concrete with water in back of the coating.)

Conclusions:

"*Drying*—Alkalox dried to touch satisfactorily and normally."

"*Condition of Film*—The film of Alkalox was sound and hard with no evidence of the effect of alkalis and no efflorescence."

"*Bond to Surface*—Alkalox showed satisfactory adhesion on all samples."

PITTSBURGH TESTING LABORATORY
N. C. HOYLES, Mgr. New York District
(Signed)
E. R. MAURER, Chemist in Charge

THE SELIG COMPANY, INC.

Manufacturers of Floor Finishes, Waxes, Polishes and Maintenance Supplies

MAIN OFFICE

336-350 Marietta Street, ATLANTA, GA.

WESTERN OFFICE, THE SELIG CO. OF TEXAS, INC.

2207 Commerce Street, DALLAS, TEXAS

Products

JIM KOTE BAKELITE and TUNG OIL FINISH and FLOR-O-SEAL especially developed seals for Gymnasium and Classroom floors; O-BRITE-O SELF-POLISHING WAX; VARNA-WAX a combination of Varnish and Wax; VARNASEAL a special seal for Terrazzo and Travertine Floors; SCRUBZOL neutral Cleanser.

Also other Finishes, Waxes, Polishes and Cleaners for all types of flooring.

The Company

We have been engaged in the manufacture of floor finishes, waxes, polishes and cleansers, as well as disinfectants, insecticides, liquid soaps, and sanitary supplies for over forty-two years. Our products are all of the highest quality and we invite architects to bring us their problems pertaining to floor maintenance and we will gladly make suggestions. There are no obligations involved.

FLOOR MAINTENANCE SERVICE

SELIG trained and experienced floor maintenance engineers are qualified to assist in any problem of scientific floor finishing and maintenance. They will gladly assist in setting up the proper and most economical schedule of maintenance. Please discuss your problems with us freely.

We manufacture a complete line of floor finishes and maintenance materials. Our various floor materials have been approved by the leading makers of flooring materials such as wood, linoleum, cork, rubber and asphalt tile, marble, terrazzo, magnesite, masonite, etc.

FINISHES AND CLEANSERS FOR ALL TYPES OF FLOORS

Jim Kote

A chemically balanced bakelite and tung oil gymnasium finish. Does not rubber burn, impervious to alkali, salt water, alcohol and common acids. Easily applied and maintained.

Packed in 65, 35, 20, 10 and 5-gallon drums.

Flor-O-Seal

A floor seal especially developed for classroom use. When properly applied does not leave a surface film and as a result does not show traffic lanes. Easily applied, long wearing and economical.

Packed in 65, 35, 20, 10 and 5-gallon drums.

Varna-Wax

A high grade wax of strictly number one pure refined Carnauba wax combined with certain varnish gums in an oil solvent vehicle. Varna-Wax produces a hard resilient, waterproof surface that looks well and wears well. It requires polishing and may be used on ail floors, except asphalt and rubber or other floors harmed by oil solvents.

Packed in 65, 35, 20, 10 and 5-gallon drums.

O-Brite-O

A self-polishing wax with an unusually high content of only the finest number one Carnauba wax. Easily applied, and when dry leaves a hard resilient long wearing surface. Dries with a shine, is easily maintained and is safe to use on any type of floor.

Packed in 65, 35, 20, 10 and 5-gallon drums.

Varnaseal

An effective seal for terrazzo and travertine floors. Seals against dirt, grease, oil, stains and foreign matter. Easy to apply, makes maintenance easier and gives your terrazzo or travertine floors the kind of protection needed.

Packed in 65, 35, 20, 10 and 5-gallon drums.

Scrubzol

A strictly neutral liquid cleanser especially developed and approved for cleaning linoleum, cork, asphalt tile, marble, terrazzo, travertine, magnesite, masonite and other similar floors. Scrubzol is a concentrated product, therefore, economical to use.

Packed in 65, 35, 20, 10 and 5-gallon drums.

A FEW SATISFIED USERS OF SELIG PRODUCTS

Mfg. Div. Marshall Field, Spray, N. C.
Firestone Cotton Mill, Gastonia, N. C.
Atlanta Athletic Club, Atlanta, Ga.
Charles Loridans Bldg. Corp., Nashville, Tenn.
Pineville Consolidated Schools, Pineville, Mo.
Roosevelt Hotel, New Orleans, La.
Wheeling Steel Corp., Wheeling, W. Va.
Keenesburg Centralized Schools, Keenesburg, Colo.
Eastern Air Lines, Miami, Fla.
Roswell City School, Roswell, New Mexico
First National Bank, Dallas, Texas
Broadway Development Co., Enid, Okla.
Harrisonburg Public Schools, Harrisonburg, Va.
Cheshire Bros. Motor Co., Nogales, Ariz.
Craighead County, Jonesboro, Ark.
Jefferson County Commission, Birmingham, Ala.
Atlanta Biltmore Hotel, Atlanta, Ga.
Emory University, Emory University, Ga.
Progressive Life Ins. Co., Rogers, Ark.



Agnes Scott College Library, Decatur, Ga.



"Gym," Y.M.C.A., Greensboro, N. C.

L. SONNEBORN SONS, INC.

Floor Preservatives; Technical Paints, Enamels and Varnishes

88 Lexington Avenue, NEW YORK, N. Y.

BRANCH OFFICES IN PRINCIPAL CITIES — FACTORIES, NUTLEY, N. J.

For Our Page on Waterproofing and Dampproofing Materials, see File Index

LAPIDOLITH TRADE MARK

Description—A colorless liquid chemical to prevent disintegration and dusting of concrete floors. For over 25 years Lapidolith has continually proven the most dependable after treatment by which to insure long wearing, economically maintained floors. It is equally efficient in preserving terrazzo floors. The chemical action of Lapidolith on concrete is demonstrated by the photographs below, taken from an official report of Prof. R. J. Colony of Columbia University, New York.



No. 1 Untreated Concrete

Microphotographs of Specimens of Concrete

Magnified 50 Diameters



No. 2. Same Concrete, Lapidolized

No. 1. Note large numerous voids (black spots) and roughness of surface.
No. 2. Note roughness is reduced and voids filled with network of newly formed hard crystalline substance.

As a result of his examination, Prof. Colony says:

"The external application of Lapidolith to concrete surfaces results in (a) the formation of an optically isotropic but crystalline substance, derived by a reaction between components of the Lapidolith and the cement matrix of the concrete which (b) has a tendency to fill in voids and cavities and act as a binding agent, thus rendering the surface smoother and more uniform."

Application—Flush on and spread with mop or broom after concrete is set (usually about 10 days after pouring), in 3 applications by mixing with water, in proportions as directed. Simple to apply and areas can be used without delay between applications.

Concrete of average density requires about 1½ gal. for each 100 sq. ft. of surface for the 3 applications.

Specifications—Harden and dustproof the following concrete or terrazzo floor areas (specify) with 3 applications of Lapidolith manufactured by L. Sonneborn Sons, Inc., New York, applied according to their directions, or under their supervision and guarantee.

LIGNOPHOL For Wooden Floors TRADE-MARK

Description—Lignophol is a liquid containing special gums, oils, fungicidal and preservative chemicals. These have been chosen for their specific value as penetrants and preservatives in checking the growth of fungus and mold and preventing splintering, warping, and common wood floor wearing problems. Lignophol is recommended as a superior finish and preservative for maple, oak, pine, spruce, walnut, birch and beech. Furnished in natural, light brown, medium brown and dark brown shades. Lignophol is available either in a penetrating finish or in a wax finish.

Application—Lignophol should be applied with a three or four-knot roofing brush. On close grained woods 1 gal. will spread over 400 to 500 sq. ft.; over porous woods, 1 gal. will spread over 350 to 450 sq. ft.

Specifications, Penetrating Finish—After scraping, all wood floors shall be given one application of Lignophol Penetrating Finish (color to be selected) applied according to the manufacturer's directions, or under their supervision.

(1) *Finishing*—Rub down entire surface thoroughly in two hours with clean, dry cloths, or clean, dry mops.

(2) After the floor is thoroughly dry, it should be buffed with an electric polishing machine, using fine steel wool, or weighted polisher. This will produce an especially smooth, non-slip finish, and attractive sheen.

(3) All floors not to be used immediately after buffing, or which may be subject to any traffic by workmen, are to be covered with finely powdered cornmeal, using 1 lb. per 100 sq. ft.; cornmeal to be left on the floor until workmen leave the building, or until floors are ready for use. Cornmeal has an absorbing and drying effect.

Specifications, Wax Finish—After scraping, all wood flooring shall be given one application of Lignophol Wax Finish (color to be selected) according to the following directions or under the manufacturers' supervision. Rub down entire surface thoroughly in one hour with clean, dry cloths. Immediately after rubbing down, buff with electric polisher, to give medium gloss. Wherever high gloss is required, allow 24 hours to elapse after polishing, then apply one coat paste wax and polish after 20 minutes.

Floorlife No. 59 and No. 69

Both are efficient sealers and finishes, composed of treated gums and oils suitable for all types of wood floors. A long wearing, durable gloss finish is obtained with these two materials. Two coats are recommended and the covering capacity is estimated at about 500 sq. ft. to the gal., one coat.

Floorlife No. 69 is specified where two coats must be applied the same day.

A complete list of local installations on these products will be gladly furnished on request. The growing number of users for all of Sonneborn's tested floor treatments is constantly growing and it is impossible in the space provided to give a satisfactory idea of the thousands of successful installations.

HARDENING, DUSTPROOFING AND DECORATING CONCRETE FLOORS

Sonneborn's Cement Filler and Dustproofer

Description—Ordinary paint films do not supply that extra toughness essential for the severe traffic, floor paints must withstand. Sonneborn's Cement Filler and Dustproofer is especially made for cement floors. It is not water soluble and is unaffected by transient contact with acids, oils or solvent.

It is a compound of treated gums of maximum toughness and durability, coloring, and selected varnish oils, giving a penetrative coating that is smooth, dustless, flexible, unusually durable and decorative.

Application—The same as ordinary paint. 1 gal. will cover about 300 sq. ft., one coat, or about 200 sq. ft., two coats. Selection can be made from 10 colors, including transparent.

Specifications—Fill and dustproof the following cement floors (specify area) with two coats of Sonneborn's Cement Filler and Dustproofer (color as selected) manufactured by L. Sonneborn Sons, Inc., New York, in accordance with their directions or under their supervision.

TECHNICAL PAINTS

Cemcoat Interior Enamel

Description—A zinc, lithopone and oil paint of superior excellence and outstanding performance. Durable, non-poisonous, washable, sanitary, color permanent and resistant to action of free lime because of the specially treated oils used. Suitable for all types of surfaces. Easy flowing. Available in white or a range of colors; in gloss, eggshell or flat finishes.

Full Specifications and List of Users sent on request.

Cemcoat Exterior Waterproof and Decorative Coating

Description—A weatherproof and decorative coating for dampproofing exterior walls above grade. Made in flat or gloss finish, white or in colors.

Full Specifications and List of Users sent on request.

S.R.P. Rust Inhibitive Protective Coating for Metal Surfaces

A new development in the protection of metal surfaces. The S.R.P. Coatings form a film much more impermeable than the standard metallic primers or finish coats. They have a peculiar characteristic which makes them rust-inhibitive to a very unusual degree and they likewise afford protection against acids and alkalies.

They make an extremely durable and satisfactory priming or finishing coat for all metallic surfaces.

S.R.P. No. 75 should be specified for the priming coat. S.R.P. No. 87 for the finish coat.

Full Specifications and List of Users sent on request.

***Special Note:** Our research laboratories and technical staff have developed many outstanding products in wall sizes, interior and exterior protective coatings and paints and varnishes to meet problems that are peculiar to localities and industries. The services of this combined staff are available to the Architect in the interest of "surface conservation."*

G. H. TENNANT COMPANY

ESTABLISHED 1870

MINNEAPOLIS, MINN. WESTFIELD, N. J.

THE TENNANT SYSTEM OF FLOOR TREATMENT AND MAINTENANCE

What It Is

The Tennant Floor Treatment and Maintenance System consists, first, in filling and hardening the wood fibers by applying a penetrating seal which is immediately burnished in by a roll of steel wool revolving at high speed. This quickly produces a surface resembling a hand-rubbed furniture finish—smooth—nonporous—non-slippery—*in* not *on* the wood. The floor is then immediately ready for use. With no surface film to mar or scratch, the floor remains smooth. Dirt does not penetrate even under the traffic of many footsteps or of heavy industrial trucking.

Dry Cleaning—Floors are swept daily with an oil mop. When they begin to show traffic stains which the oil mop does not remove, they are buffed with a steel wool roll or cylindrical fiber brush revolving at high speed. The vacuum on the machine picks up all dirt.

Its Advantages

Hardening and sealing the wood fiber and eliminating the use of water are the main reasons for the success of the Tennant System as applied to wood floors receiving heavy traffic. Even the splintering usually seen where floors are trucked over is avoided. The expense of patching is saved. It is difficult to realize the wear a wood floor can withstand when maintained by scientifically correct methods.

Floors treated and maintained by the Tennant Method are bright, clean, attractive and light-reflecting.

Its Applications

The Tennant System is applicable to all types of wood floors, especially in:

(1) Industrial Plants—Tennant-treated floors have conclusively demonstrated their superior wearing qualities, even under machine shop conditions.

(2) Bakeries (and Other Food Industries)—The Tennant System provides the highest standards of cleanliness and sanitation.

(3) Schools and Colleges—(a) Classrooms. (b) Gymnasiums. (c) Cafeterias. (d) Auditoriums.

(4) Retail Stores—(a) Drug. (b) Dry Goods. (c) Shoe. (d) Candy.

(5) Public Buildings—(a) Armories. (b) Post offices. (c) City halls. (d) Courthouses, etc.

(6) Office Buildings—(a) Offices. (b) Corridors. (c) Reception rooms. (d) Libraries. (e) Display rooms. (f) Conference rooms.

(The Tennant machine is used for scrubbing and wax polishing, as well as for dry cleaning with steel wool.)

Representative Users of Tennant System

UNITED STATES GOVERNMENT—Tennant Equipment is listed on General Schedule of Supplies. Over 600 Tennant Machines are used for maintenance of floors in most of the newest and largest Federal buildings located in every state.
Western Electric Co., Kearney, N. J.
American Bakeries Corp., Atlanta, Ga.
The Andrew Jergens Co., Cincinnati, Ohio
J. B. Ivey Co., Charlotte, N. C.
Frigidaire Corp., Dayton, Ohio
Procter & Gamble Co., Cincinnati, Ohio
Cannon Mills, Kannapolis, N. C.
J. I. Case Company, Racine, Wis.
Van De Kamps Bakeries, Los Angeles, Cal., and Seattle, Wash.
Buick Motor Car Co., Flint, Mich.
General Electric Co., Fort Wayne, Ind.
Continental Baking Co., New York, N. Y.
Hershey Chocolate Co., Hershey, Pa.
L. Bamberger & Co., Newark, N. J.
Chicago Towel Co., Chicago, Ill.
Board of Education, Fort Wayne, Ind.
Board of Education, Pasadena, Cal.
Board of Education, Asheville, N. C.
Radcliffe College, Cambridge, Mass.
City of St. Paul, Minn.
Iten-Barmettler Biscuit Co., Omaha, Neb.
City of Baltimore, Md.

See The Tennant System at Work

As the Tennant System is now in use nationally, in all probability it is being employed on numerous floors in your own locality. Names of local users and illustrated circular and specifications will be sent upon request.

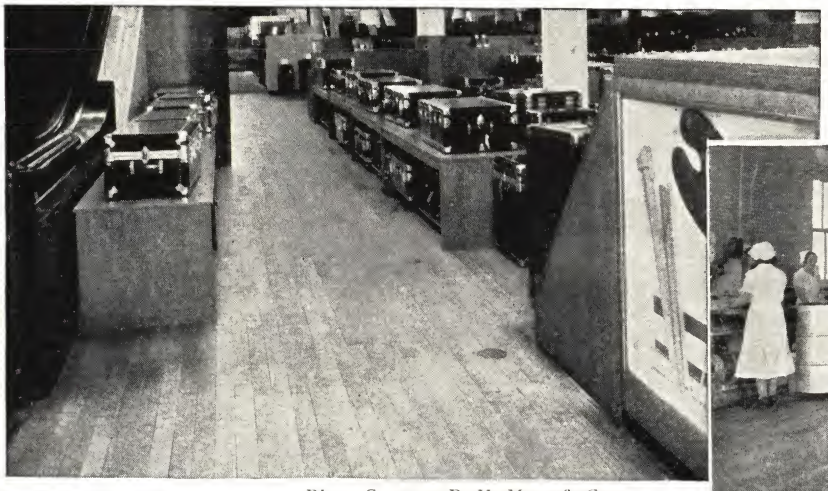


Photo Courtesy R. H. Macy & Co.

Buffed floors have a finish resembling that of hand-rubbed furniture, reflect more light, retain their original attractiveness permanently, and are easily kept clean and dust-free without the use of water. They are refinished as needed wherever traffic is heaviest without time out for drying and without lap marks. They never require resanding.

Visitors are immediately aware of a sanitary plant when they see these bright well-kept floors. "Tennant" dry-cleaning prevents warping, cupping, discoloration, caused by water. Subfloor is always dry and sanitary. Mold and vermin are eliminated. Total costs are less than for scrubbing as smooth floors clean easily and sealed floors, kept dry, wear indefinitely.

Photo Courtesy Drake Bakeries, Inc.



17
47

TELEPHONE
MOrsemere 6-5117

VITRA SEAL COMPANY

INCORPORATED
Manufacturers of Permanent Floor Finishes
531 Church Street, RIDGEFIELD, N. J.

FOR SMOOTH, ATTRACTIVE AND WEAR-RESISTANT FLOORS

VITRA SEAL
A Permanent, Scratch-Resistant Floor Seal

Vitra Seal is prepared for the integral sealing of the pores in wood and other floors of homes, schools, and institutions. The floor material is made impervious to stains, scratches and discoloration by the penetrating action of the hard drying oil vehicle carrying durable solids into the open pores or grain. Colors are enhanced and the natural beauty of wood grains accentuated. Dries in 1½ to 2 hours. Heavy traffic areas, when worn can be redressed without lapping. Floors treated with the Vitra Seal process are scratch-proofed, and future scraping is eliminated as no surface gum coat remains on the floor.

VITRA FINISH
For Providing Lustre

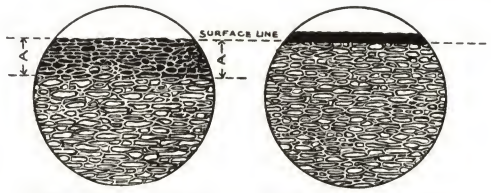
Vitra Finish is used on floors previously treated with Vitra Seal, to establish a high-finish lustre. Floors thus treated present a smooth, hard, non-slippery surface. Vitra Finish dries hard in 15 minutes, leaving a non-greasy film with none of the disadvantages of ordinary wax finishes. Vitra Finish can also be used to advantage over floors coated with shellac or varnish. When used in either manner Vitra Finish provides extra protection and creates a surface which definitely facilitates cleaning — the use of a dry mop, and an occasional steel wooling supplanting the usual scrubbing methods.

Licensed Contractors

Licensed contractors trained for the Vitra Seal method of floor finishing are available in principal cities They are equipped to satisfactorily complete any floor job according to correct specifications and advise proper maintenance. A list of these operators may be obtained from the manufacturer.

Colors

Comes in golden oak, brown walnut, red, light oak, dark oak, olive green, black. Can be supplied in any shade.



"A" shows approximate penetration beneath the surface of penetrating wood seal.

Note that a top coating dries above the surface and does not penetrate and support the cells.

Micro Diagrammatic Drawing of Wood (Magnified)

Maintenance

Simply use a dry mop for picking up surface dirt. When worn spots appear apply a coat of Vitra Finish over these spots and let dry about fifteen minutes. Before completely dry polish with a polishing machine or dry cloth. If floor is subjected to extremely heavy traffic, steel wool occasionally. After long and heavy wear redress traffic spots by applying coat of Vitra Seal with steel wool and removing surplus with cloth. When dry apply thin coat of Vitra Finish and polish.

Coverage

Average Coverage Per Gallon
Wood Floors, *Vitra Seal*
650 sq. ft. per coat
Wood Floors, *Vitra Finish*
1500 sq. ft. per coat
Cement Floors, *Vitra Seal*
300 sq. ft. per coat



Specifications

Wood Floors (New or Rescraped)—Wood floors shall be sanded clean and all shellac, varnishes or other finishes entirely removed. Apply two (2) coats of Vitra Seal, steel wooling to remove surplus between each coat. Allow two (2) hours drying between each coat. Apply one (1) coat Vitra Finish and polish with heavy electric polishing machine. Finished floors should not be used for at least two (2) hours after completion.

Wood Trim, Furniture, School Desks—All woodwork should be dry, smooth and clean. All holes, scratches or cuts shall be filled. Apply two (2) coats Vitra Seal removing surplus between each coat. Apply one (1) coat Vitra Finish and polish.

Magnesite, Composition or Cement Floors—Sand paper, removing all cement residue and former finishes and smoothing the entire floor. Apply two (2) coats Vitra Seal and two (2) coats Vitra Finish.

Wood Floors (Finished) with Gum Coats—After floors have been treated with shellac or varnish, apply two (2) coats of Vitra Finish, each coat to be buffed down with a heavy electric polishing machine.

Linoleum Floors—Clean floors to remove all old finishes. When perfectly dry apply two (2) coats Vitra Finish.



A Vitra Seal Treated Floor



**North Carolina State University
Chapel Hill, N. C.**

A Few of the Prominent Institutions Using Vitra Seal Products

North Carolina State Univ., Chapel Hill, N. C.
Cornell University, Ithaca, N. Y.
Union Theological Seminary, New York, N. Y.
New York Hippodrome, New York, N. Y.
P. J. Young Dept. Store, New Brunswick, N. J.
Duke University, Durham, N. C.
Georgian Court College, Lakewood N. J.
Ridgefield Park Schools, Ridgefield Park, N. J.
Union City Schools, Union City, N. J.
New York Schools, New York, N. Y.
City Hall, Union City, N. J.
St. Mary's Academy, No. Plainfield, N. J.
Crouse Irving Hospital, Syracuse N. Y.
Fairview Sanitarium, Paramus, N. J.
Berea College, Berea, Ky.
Johns Hopkins Hospital, Baltimore, Md.
Syracuse University, Syracuse, N. Y.
Masters School, Dobbs Ferry-on-Hudson, N. Y.
Englewood Hospital Englewood, N. J.
Miami University, Oxford, Ohio
Museum of Arts, Cincinnati, Ohio
Xavier University, Cincinnati, Ohio
Curtiss Aeroplane & Motor Co., Inc., Buffalo, N. Y.
Arcola Country Club, Arcola, N. J.
Swiss Chalet, Rochelle Park, N. J.
Medical Arts Building, Inc., Norfolk, Va.
Treasury and War Depts., Washington, D. C.
Catholic Universities of America, Washington, D.C.
Ohio State University, Columbus, Ohio
Cincinnati Club, Cincinnati, Ohio

GLASS
- SECTION - 18

Section Number 1/5 Catalog Number

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AMERICAN WINDOW GLASS COMPANY

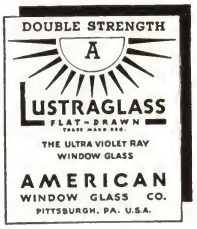
GENERAL OFFICES
Farmers Bank Building
PITTSBURGH, PA.

DISTRICT SALES OFFICES
ATLANTA, GA. BOSTON, MASS. CHICAGO, ILL. DETROIT, MICH. LOS ANGELES, CAL. NEW YORK, N. Y.
PORTLAND, ORE. ST. LOUIS, MO. SALT LAKE CITY, UTAH SAN FRANCISCO, CAL. SEATTLE, WASH.

EXPORT OFFICES: SAN JUAN, PUERTO RICO

FACTORIES
ARNOLD, PA. BELLE VERNON, PA. JEANNETTE, PA.

PRODUCTS



Lustraglass—A flat drawn clear sheet window glass (the ultra-violet ray window glass).

Lustrablu and Lustragold—For mirrors, table tops and other decorating purposes.

Crystal Sheet—$\frac{3}{16}$ in., $\frac{7}{32}$ in. and $\frac{1}{4}$ in. thicknesses.

Greenhouse Glass—"The whitest of all."

Bulb Edge Glass—For shelving, window ventilators, counter partitions and wherever glass is used without a frame.

Ornamental Etched Glass, Ground Glass and Chipped Glass—For doors, partitions and other special uses where a translucent glass is required.

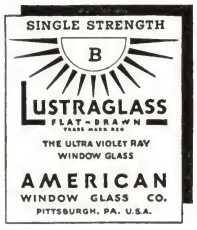
Plexite, the Safer Safety Glass—For automobiles, busses, railroad and street cars, airplanes, boats, asylums, factories, etc.

Armor-Lite Bullet-Proof Glass — For bank protection, prisons and armored cars.

Lustrawhite Picture Glass — Superfine, Selected and Standard qualities.

Photo Glass—For camera use, lantern slides, diagnostic X-ray and microscopic use.

LUSTRAGLASS, THE ULTRA-VIOLET RAY WINDOW GLASS



Lustraglass is a clearer, whiter, more lustrous window glass that provides many extra advantages at no extra cost. It is the closest approach to perfect transparency ever attained in a window glass.

It is generally recognized that the most effective ultra-violet rays in sunlight are those having a wave length from 313 mu. down to 302 mu. Ordinary window glass transmits practically nothing below 313 mu. Ultra-violet rays are seldom available in sunlight below 302 mu.

Lustraglass does transmit more daylight and a substantial amount of the shorter (more effective) ultra-violet rays of sunlight. Yet Lustraglass costs no more than ordinary window glass.

Process and Production

Lustraglass is produced by an improved vertical drawn machine process that assures absolute flatness, superior lustre, uniform thickness and quality.

Tests

Scientific tests with poultry and plants have proved the effectiveness of Lustraglass transmission.



Folder 3516 illustrates the marked increase in health, growth and strength of plants and poultry raised under Lustraglass as contrasted with similar specimens raised under ordinary window glass. Copies of folder 3516 will be supplied free on request.



Glazing of Lustraglass

Lustraglass can be glazed either side out with the assurance that the appearance and clear visibility will be of the same high standard whether viewed from the inside or outside of a building.

Chemical and Physical Properties of Lustraglass

The chemical properties of Lustraglass assure maximum resistance to discoloration, fade, stain or rust. Tests demonstrate great tensile strength and a high modulus of rupture to withstand maximum wind pressures.

Identification Labels

Every light of *genuine* Lustraglass, the ultra-violet ray window glass, is labeled to identify its genuineness as well as thickness and quality.

Packing

Lustraglass is packed with paper between each light and is further protected by the use of a specially processed corrugated board instead of straw. This reduces breakage and freight charges.

Grading

Lustraglass is graded in "A" and "B" qualities, both of which are free from many of the imperfections permitted in Government specifications.

Grades and Qualities

"A" Quality—Lustraglass ("A" Quality) is a perfectly flat, white, high lustre product of uniform thickness and appearance.

"B" Quality—This quality is free from all glaring defects and differs only from "A" Quality in that it contains imperfections which would prevent its being graded as "A" Quality.

A TRULY MODERN SCHOOL

Glazed with Lustraglass

In the classroom where children spend a great percentage of their daylight hours, windows have a decided effect upon their health, eyesight and disposition . . . Here in the Northville, Michigan Grade School, the windows are large and they are glazed with Lustraglass, the truly modern window glass. Lustraglass is the whitest of all window glass.

It transmits more daylight and more of the healthful ultra-violet rays of sunlight. Much credit must be given to architects, *Lyndon & Smith,* contractors, *H. B. Culbertson Co.,* and glazing contractors, *Schroeder Paint & Glass Co.,* all of Detroit, Michigan, for their example of what a modern school should be.







F. S. Lincoln, Photographer

Dimensions

Glass is cut to dimensions ordered with an allowable tolerance of $\frac{1}{32}$ in. per $\frac{1}{8}$ in. thickness.



THICKNESSES AND WEIGHTS

Table 1—Average Thickness and Weight of Clear Sheet Window Glass

Single Strength	.091 in.	18.9 oz. per sq. ft.
Double Strength	.125 in.	26. oz. per sq. ft.
Crystal Sheet	.193 in.	40. oz. per sq. ft.
Crystal Sheet	.218 in.	45. oz. per sq. ft.
Crystal Sheet	.248 in.	51.5 oz. per sq. ft.

Note: The above are subject to the usual average allowable variations.

MAXIMUM DIMENSIONS RECOMMENDED

	Width (in inches)	Length (in inches)
Single Strength	40	50
Double Strength	60	80
Crystal Sheet, $\frac{3}{16}$ in., $\frac{7}{32}$ in. and $\frac{1}{4}$ in.	76	120

Inspection

Every light of "A" Quality glass, after being cut and inspected by experienced cutters, is re-inspected by men specially trained for that work. The quality is again checked by the chief inspector.

Suggested Specifications

All window glass used in this building shall be Lustraglass, a product of AMERICAN WINDOW GLASS COMPANY, and shall be (here specify the thickness and quality of glass desired). The Lustraglass label must appear on each light of Lustraglass.

Note: If the AMERICAN WINDOW GLASS COMPANY'S glass is specified, this company, upon request, will inspect the installation and without expense report whether the glass furnished is the kind, quality, and thickness specified.

LUSTRABLU

A beautiful translucent blue glass for mirrors, table tops and other ornamental purposes. Used extensively in Florida and Southern California as a "sun shade" window glass. Available in all dimensions: 16 oz., single, double, $\frac{3}{16}$ in. and $\frac{7}{32}$ in. sheet. Also $\frac{13}{64}$ in. polished plate glass. Send for a sample.

LUSTRAGOLD

For the first time in America a lovely translucent glass with a true gold color for mirrors, table tops, and other ornamental purposes. Available in all dimensions. 16 oz., single, double, $\frac{3}{16}$ in. and $\frac{7}{32}$ in. sheet. Send for a sample, and see for yourself the soft, warm beauty of this new glass.

CRYSTAL SHEET—$\frac{3}{16}$ IN., $\frac{7}{32}$ IN., $\frac{1}{4}$ IN. THICKNESSES

Crystal Sheet Glass possesses a brilliant surface, uniform thickness and is the flattest and whitest window glass produced by any process.

Being lower in price than polished plate, it is frequently used instead of plate for many purposes at a considerable saving.







PLEXITE THE SAFER SAFETY GLASS

REG. U.S. PAT. OFF.

Plexite Safety Glass is a new and distinctly superior product in every respect. Plexite provides much greater protection and resistance to fracture than ordinary safety glass.

The Soundproofing Qualities of Plexite Should Be of Special Interest to the Architect

While manufactured originally for automobiles, Plexite, because of its soundproofing properties, has proved of outstanding value in apartment houses and other buildings in keeping out street noises.

Plexite does not "let go" or become "blotchy" after it has been in service for a period of time, nor will it discolor from exposure to sunlight for any length of time.

Plexite Safety Glass can be easily and quickly cut into any shape or size with an ordinary glass cutter's wheel and a sharp knife.

Instead of rigid resistance to impact, as is characteristic of ordinary safety glass, Plexite yields or "flexes" like a net on impact, resulting in less glass being displaced and greater safety.

Plexite resists the penetration of moisture and requires no sealing. The binder used in making this new safety glass imparts a lighter color to the glass than nitrate or acetate cellulose.

Plexite Safety Glass is available in thicknesses ranging from .134 to .288 in. Ask for Plexite Booklet.

ARMOR-LITE BULLET-PROOF GLASS FOR BANK PROTECTION

Provides positive protection against gunfire.

This glass is available in thicknesses ranging from .979 to 1.255 in.

Armor-Lite D.P.T. is approved by the Underwriters' Laboratories, Inc.

FOURCO GLASS COMPANY

MANUFACTURERS OF

Window, Heavy Sheet, Photo and Bulb Edge Glass

GENERAL OFFICES

Union National Bank Building

CLARKSBURG, WEST VIRGINIA

SALES OFFICES

NEW YORK, N. Y., 11 W. 42nd Street — FORT SMITH, ARK. — CHICAGO, ILL., 58 East Washington Street

DETROIT, MICH., 14867 Faust Avenue

OPERATING FACTORIES

CLARKSBURG, W. VA. — VINCENNES, IND. — SISTERSVILLE, W. VA. — FORT SMITH, ARK.

Product

FLAT DRAWN SHEET GLASS for all purposes.

Brand—Clearlite

CLEARLITE WINDOW GLASS is vertically drawn in flat sheets. This improved method produces glass that is perfectly flat and of unusual clearness—two qualities of prime importance to buyers and users of window glass.

Other advantages of CLEARLITE are its uniform thickness, natural fire polish, brilliant lustre and great tensile strength. Every light is labeled for the buyers' protection, packed with paper between each light, and enveloped in corrugated paper board in strong well made wooden boxes.

Uses

For all purposes where perfectly flat glass is required.

Clearlite WINDOW GLASS A QUALITY

EASY ON THE EYES

Not only for lighting of homes and buildings, but for mirrors, furniture, display cases, French doors, etc.

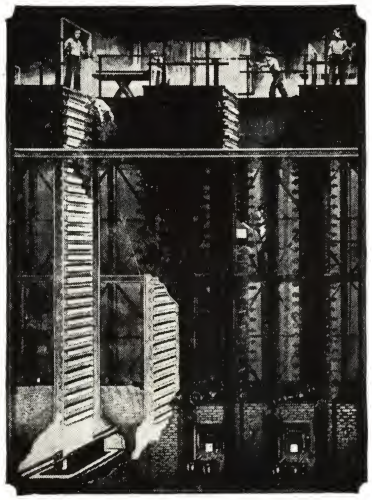
Grading

CLEARLITE is graded according to the highest standards adopted by flat glass manufacturers of America and these standards of grading are strictly adhered to.

THICKNESS

For	Lights per Inch		
	Minimum	Average	Maximum
Single strength glass	10.50	11.00	11.50
Double strength glass	7.50	8.00	8.50
16-oz picture glass	13.00	13.50	14.00

For	Thickness in Inches		
	Minimum	Average	Maximum
Crystal sheet or heavy window glass—			
3/16-in. glass	0.187	0.193	0.200
7/32-in. glass	.212	.218	.225
1/4-in. glass	.240	.248	.255



Vertically Drawn in Perfectly Flat Sheets

A Perfectly Flat Sheet from Start to Finish

As illustrated to the left, CLEARLITE is vertically drawn from the molten state to the finished sheet—and it remains flat during this process. This assures glass of perfect flatness, uniform thickness, natural brilliant fire polish and great tensile strength. Thoroughly annealed as it is drawn, CLEARLITE is a clear vision glass of the finest quality.

Service and Distribution

CLEARLITE is obtainable from the leading jobbers in the principal cities. If the jobber is unable to supply you, write or wire direct to FOURCO GLASS COMPANY, Clarksburg, W. Va.

Prompt shipment can be made from any one of the company's plants. The company, or nearest sales office, is prepared to furnish any information or offer recommendations to cover any requirements that may be submitted.



Clearlite Glass Carries This Label Designating Quality



Glass

LIBBEY · OWENS · FORD

FLAT DRAWN SHEET GLASS • POLISHED PLATE GLASS • TUF-FLEX TEMPERED PLATE GLASS • VITROLUX COLOR FUSED TEMPERED PLATE GLASS • AKLO HEAT-ABSORBING PLATE GLASS • VITROLITE COLORFUL STRUCTURAL GLASS • GLASTONE STRUCTURAL GLASS FACED MASONRY • EXTRUDALITE STOREFRONT METAL • BLUE RIDGE FIGURED AND WIRE GLASS

Glass IN ARCHITECTURE

As America rebuilds, the rule of common sense in architectural planning everywhere is evident. Ornamental appendages of prewar days are gone. The vision of a new type of architectural beauty based on related functional forms is a definite reality.

In this sweeping new movement in architecture, GLASS is being emphasized more and more. Its unique characteristics, enhanced by latest improvements in manufacturing processes, solve many a problem in residential, commercial and industrial building.

The fact that the average person spends at least half a lifetime between four walls makes self-evident the need for ample fenestration, more and larger windows. Window Walls, Picture Windows, Sun Porches and Solaria, as integral features of design, help the average person to bring more light and air into the daily pattern of his life. These are but a few of the ways in which glass, skillfully handled by the architect, compensates for the limitations of modern living habits.

In interior design, the beauty and practical utility of glass are recognized by architects as valuable aids, with generous areas of wall space being specially allotted to mirrors. Architects realize that mirrors mean much to the successful execution of interiors . . . that mirrors will double the apparent size of a room. Mirrors bring light to shadowed corners. Mirrors are gay and sparkling as they reflect lights and throw back color motifs. Their importance brings mirrors, unquestionably, within the architect's province to design and place judiciously throughout. Color, too, is now available for interesting effects with mirrors of L·O·F Polished Plate Glass . . . in blues, peach and green.

The glass industry has kept pace with the modern trend of architectural design. It has developed new and practical types of glass whose special characteristics and physical properties open up broader fields for the use of the product in design and construction. Tuf-Flex Tempered Plate Glass is three to seven times stronger than regular plate glass and has unusual resistance to physical and thermal shock. Vitrolux Color-Fused Tempered Plate Glass has the same physical properties as Tuf-Flex and is available in a wide range of colors. This glass enables the architect to practically build with color and light. Aklo, the heat absorbing plate glass, absorbs the infra-red rays of the sun and when used in double glazing fulfills many important useful functions in design and construction. All of these special glasses are discussed in detail in this catalog.

The increasing demands on glass – for more light and distinctive character in all types of modern construction – emphasize the importance of unvarying, highest quality in the product specified and used.

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SELECTING THE RIGHT GLASS

● **The current trend in building which demands so much of glass has created the need for specialized types of glass to meet special requirements. As a result, well-known types of flat glass have been greatly improved. New types have been developed. Their uses cover an ever-broadening field, summarized in the following outline of glazing practice.**

SHEET GLASS

● A Quality Double Strength is widely used in glazing private homes, apartment houses where low rentals prevail, smaller hotels, schools, hospitals and other public buildings.

POLISHED PLATE GLASS
(Clear and in Colors)

● In buildings and in private homes where the importance of quality glazing is recognized, Polished Plate Glass is used exclusively. It is essential for store windows. Its use in many mirror installations falls logically within the province of the architect. To furnish even broader opportunities in mirror treatment, L·O·F Polished Plate Glass is also now regularly produced in golden plate, three shades of blue, a peach and a green.

FIGURED AND WIRE GLASS

● Figured Glass is generally specified for office corridors, partitions, skylights, elevator doors and other openings where obscurity is desirable. As a decorative medium, its distinctive character is employed in many homes and public buildings. Wire Glass is used in skylights and light wells and usually is required by building codes in openings exposed to the possibility of fire.

SAFETY GLASS

● Safety Glass has many uses in industrial plants and in other buildings as a protection against theft.

VITROLITE

● Vitrolite Opaque Structural Glass is furnished in a variety of plain and agate colors for use in bathrooms and kitchens in the home, modern store-front facings, store interiors and fixtures, wainscoting, theater lobbies, toilet partitions in public buildings and similar installations. It is preferred for its unusual structural beauty, for sanitation and for the ease and economy with which its sparkling surface can be maintained.

GLASTONE

● Glastone is a specially prepared concrete masonry unit to which a permanent facing of Colorful Structural Glass is bonded and mechanically anchored. Glastone meets the wide demand which exists today for structural glass in the form of a load-bearing masonry unit, to be *built into* and become an integral part of the building itself. For complete description of this interesting modern product see pages 50 to 53 of this catalog.

TUF-FLEX

● Tuf-Flex Tempered Plate Glass has many specialty uses which employ the advantages of its peculiar properties. Its resistance to impact and thermal shock makes it ideally suited for uses where greater strength is necessary such as in display cases, revolving doors, display shelves, sign facings and show-window trim. Tuf-Flex cannot be cut, mitered, beveled or edged after tempering, and **must** therefore **be ordered from the factory in exact sizes** required.

VITROLUX

● Vitrolux Color Fused Tempered Plate Glass has the same physical characteristics as Tuf-Flex with the added feature that it is available in a wide range of attractive colors—some translucent and some opaque. It answers the architect's demand for a material that will enable him to use luminous color as an integral part of the structure itself, and may be used to create unusual exterior or interior lighting effects. For more complete information see pages 11 to 15 of this catalog.

AKLO

● This Plate Glass, with its special chemical composition, has the unusual property of absorbing infra-red heat rays. This is an important aid in maintaining even temperatures within a structure. AKLO Plate Glass reduces the cost of operating air-conditioning equipment for cooling purposes, because it reduces the total load for a given window area. Recommended for storefronts and lighting fixtures where perishable products are to be displayed.

L·O·F SHEET GLASS



The formation of the sheet by the Exclusive L·O·F Flat Drawing Process is illustrated above. Here the glass is being drawn from the melting tank and passed through carefully regulated gas flames which give it a natural fire finish and lasting brilliance.

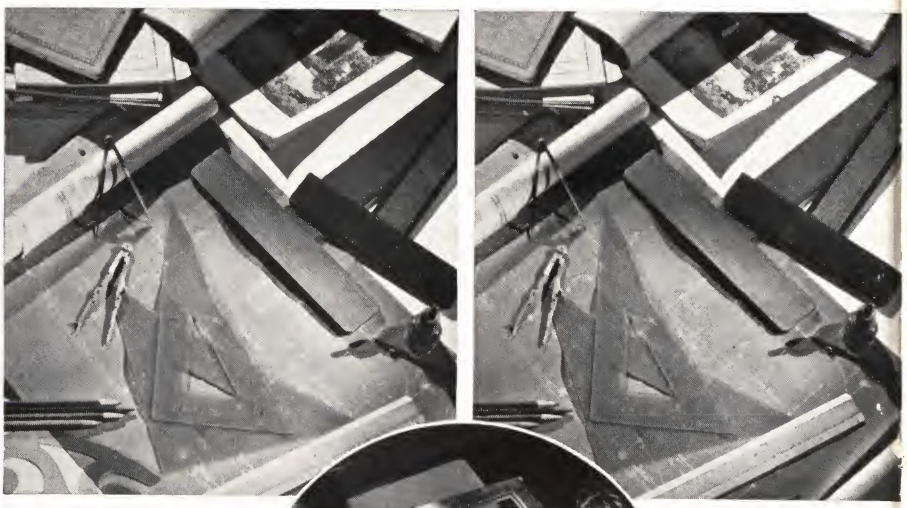
● When first introduced over 19 years ago, the Exclusive Libbey·Owens·Ford Flat Drawing Process revolutionized the window glass industry. This process has been constantly refined and improved. Today the glass made by it is brighter, flatter and clearer than any the industry has ever offered. The exceptional flatness of L·O·F Sheet Glass is vitally important when it is used in double glazing—so essential for air conditioning and lower fuel cost.

After the glass is drawn from the tank by the Exclusive L·O·F Sheet Glass Machine, it is thoroughly annealed in lehrs four or five times longer than those used in any other process. This slow and thorough annealing eliminates strain, making a less brittle glass and consequently one in which there is far less breakage.

Because of these characteristics and the wide public acceptance enjoyed by all L·O·F products, a closed specification for L·O·F Quality Glass assures your client's satisfaction.

Can you tell which is which?

While this is by no means a technical or scientific test, it is nevertheless a very practical one, and convincing evidence that L·O·F Quality Sheet Glass is exceptionally clear and flat. It explains, in some measure, why so many architects write a closed specification for this fine glass. For your protection, instruct contractors and builders to leave the labels on until final inspection has been made.

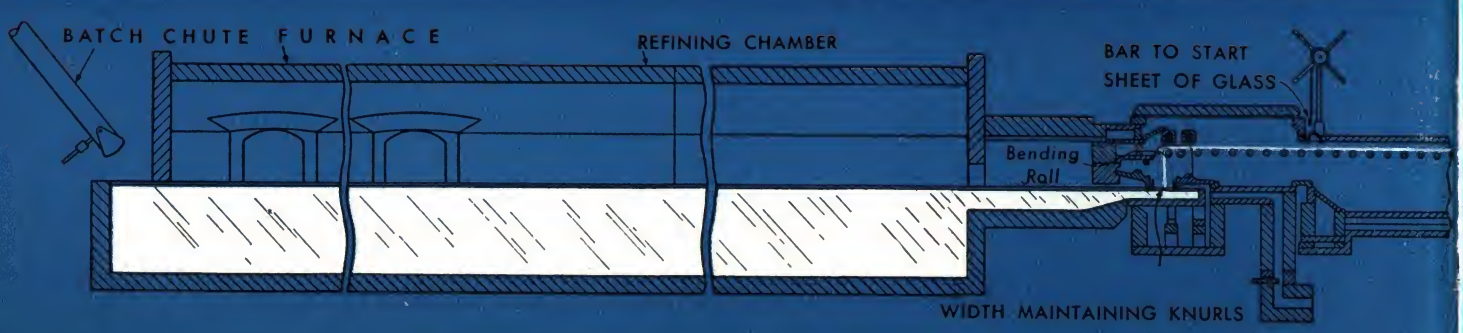


The authenticity of these photographs is attested to by Underwood & Underwood.



One of these pictures was taken through a piece of L·O·F Quality Glass. (In the other there was **nothing** between the camera and the subject.)

A PRACTICAL DEMONSTRATION OF THE *Superior Quality* OF L·O·F QUALITY SHEET GLASS



PRACTICAL INFORMATION ON SHEET GLASS



● **Libbey·Owens·Ford Flat Drawn Sheet Glass is manufactured in several grades and of varying thicknesses. Single Strength and Double Strength Sheet Glass are regularly supplied in two standard grades—A Quality and B Quality. Both are labeled. (A blue label indicates Double Strength —a red label, Single Strength.)**

FLATNESS . . . . . .

The L·O·F exclusive process of manufacture draws the glass into a flat sheet directly from the molten state. This process produces a glass so free from wave that it gives a clearer, sharper image.

TOLERANCES IN THICKNESS . . .

L·O·F Sheet Glass Table of Thickness Standards is given below:

	Thickness, in.		Lights per in.		Av. Weight, oz. per sq. ft.
	Min.	Max.	Min.	Max.	
SINGLE STRENGTH	.087	.100	10.5	11.50	19.55
DOUBLE STRENGTH	.118	.133	7.5	8.50	26.00
$\frac{3}{16}$" SHEET	.187	.200	5.0	5.35	40.00
$\frac{7}{32}$" SHEET	.212	.225	4.4	4.70	45.00
PICTURE GLASS	.056	.067	15.0	17.00	13.00

DIMENSIONS . . . . . .

L·O·F Sheet Glass is cut to dimensions well within the allowable limits of Government specifications, less than 1/32 in. per $\frac{1}{8}$ in. thickness.

PACKING . . . . . .

All L·O·F Sheet Glass is shipped in Cushion Corner Cap packages —the neatest, cleanest, and nearest to moisture-proof method of packing so far developed.

STANDARD SPECIFICATIONS . . .

All Flat Drawn Sheet Glass shall be Libbey·Owens·Ford A Quality Double Strength, except as otherwise noted, packed in Cushion Corner Cap boxes. Each light shall bear the Libbey·Owens·Ford label, indicating strength and quality of the glass.

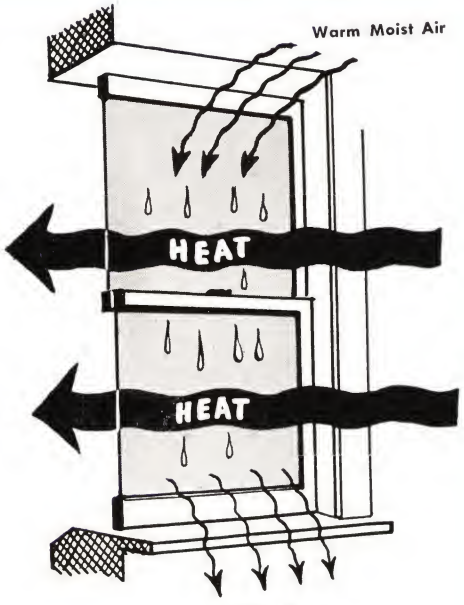


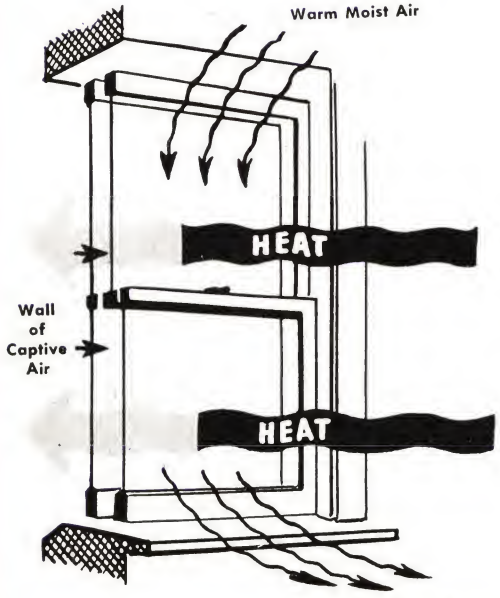
"Window Conditioning"

BUILT-IN, DOUBLE-GLASS INSULATION — CAN REDUCE HEAT LOSS AS MUCH AS 30% — THE MOST IMPORTANT SINGLE FACTOR IN HOME INSULATION

THIS IS WHAT HAPPENS WITH SINGLE-GLAZED WINDOWS

Cold outside air chills the glass to nearly its own temperature . . . On the inside, warm humid air is chilled in contact with this cold glass, moisture condenses as fog, obliterating the view and runs down glass to sill and wall beneath . . . The chilled air drops to the floor causing drafts.





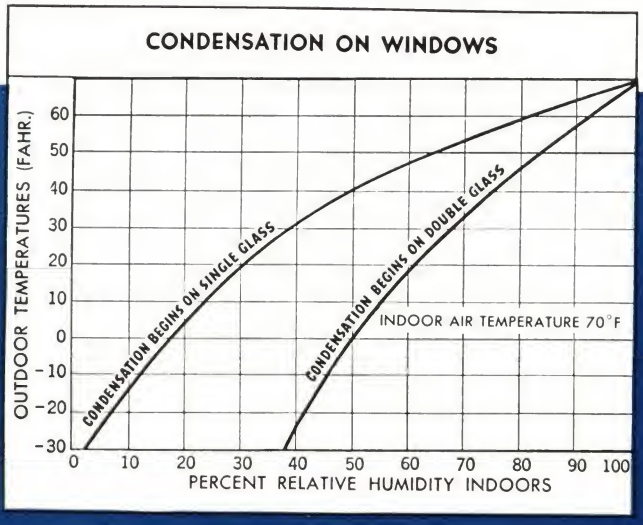
THIS IS WHAT HAPPENS WITH "WINDOW CONDITIONING"

Though the temperature outdoors remains at zero and indoor temperature 70° F. and healthfull humidity is maintained, the insulating wall of captive air between the two sheets of glass keeps the inner window glass nearer room temperature, thus preventing condensation and fogging.

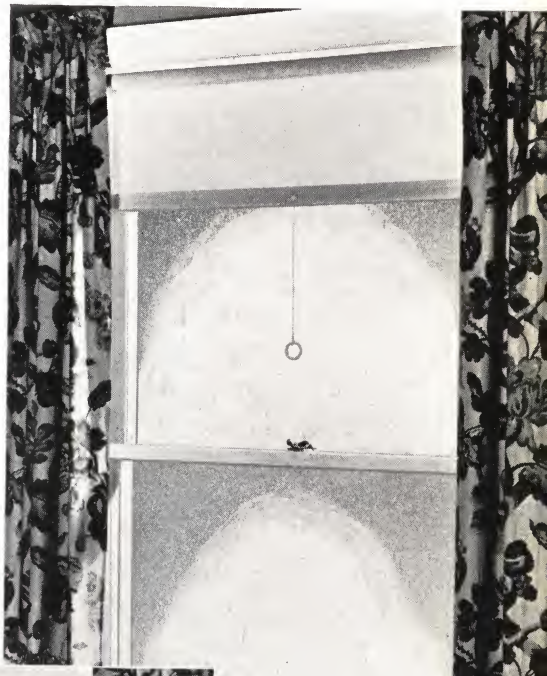
● The true economy of "Window Conditioning," double-glass insulation, is easily explained to your clients. "Window Conditioning" like all other forms of building insulation, pays for itself in fuel savings alone. And because "Window Conditioning" costs less than other desirable forms of insulation and *saves more fuel* for each dollar invested, its inclusion in your specifications represents sound planning. Another important consideration; through "Window Conditioning," it is possible to materially reduce the size (and cost) of the heating unit specified. In many basementless type homes, where utility room space is at a premium, this feature of "Window Conditioning" represents considerable savings in space as well as original cost.

Then, too, with the increasing acceptance of modern winter air conditioning with its higher healthful humidity, "Window Conditioning" becomes almost a necessity if fogged windows, soiled draperies and excessive cleaners' bills are to be prevented. There are many forms of prefabricated, double-glazed windows available in both wood and steel sash, and in both double hung and casement type.

FOR MORE ECONOMICAL HOMES

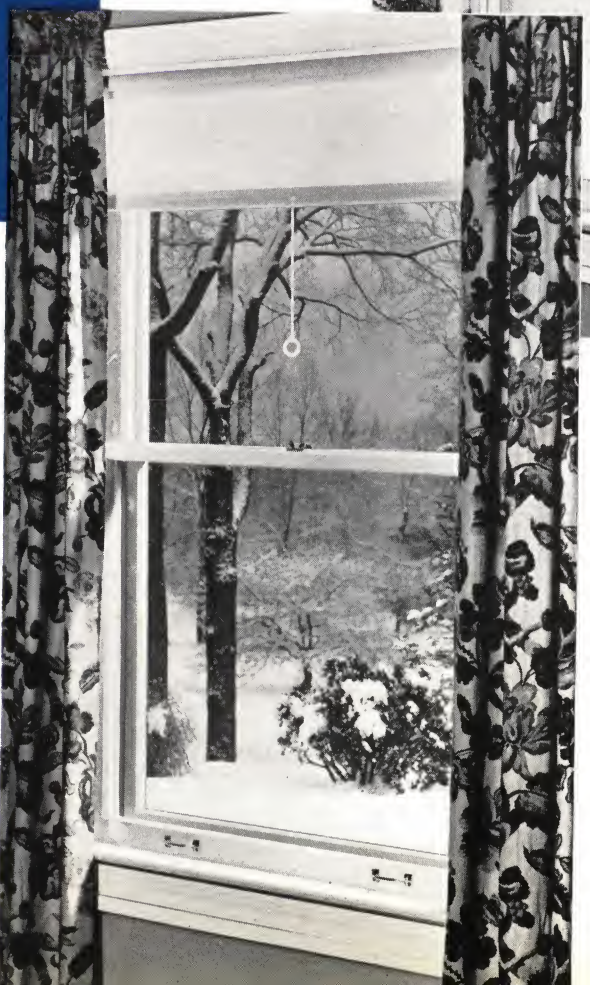


This chart shows that "Window Conditioning"—Double-Glass Insulation—prevents condensation and fogging of windows when a healthful humidity is maintained indoors even though the outside temperature falls way below zero. In severe weather, condensation rarely occurs on windows in the "Window Conditioned" home.



AT THE RIGHT

Note how the single glazed window is fogged up with moisture which has frozen on its surface.



AT THE LEFT

With "Window Conditioning" the glass remains clear—you can see outdoors.

QUALITY GLASS IS IMPORTANT

● With double glazing, the quality of the glass is doubly important since you are looking through two pieces of glass instead of one. Because of an exclusive manufacturing process, L·O·F Window Glass is noted for its greater freedom from waviness and distortion, making it especially suited to "Window Conditioning." These advantages cost no more. When you specify winter windows or double-glazed sash, specify L·O·F. Each light bears the L·O·F label—your client's guarantee of quality in window glass.

L·O·F POLISHED PLATE GLASS

● **Libbey·Owens·Ford Polished Plate Glass is manufactured in plants fitted throughout with the finest and most modern equipment. Only raw materials of highest quality are used. The sparkling luster and brilliance characteristic of L·O·F Plate Glass are a result of grinding and polishing by highly accurate machines. Grinding removes surface inequalities as the glass reaches this stage of manufacture. Polishing, which imparts distinctive beauty to L·O·F Plate Glass is accomplished by felt-covered rotating discs. Each light of glass is carefully inspected and graded before it receives the identifying L·O·F label. Because of its superior finish, unusual clearness and enduring brilliance, discriminating architects prefer and specify Libbey·Owens·Ford Polished Plate Glass for an increasing number of uses.**

PRACTICAL INFORMATION

The very finest polished plate glass, which is used almost exclusively in making the costliest mirrors, is known as "First Silvering Quality." Owing to the high cost of selecting this quality, it is never specified for building purposes. The next quality is called "Second Silvering" and is often used for high-grade glazing work, but is seldom specified in sizes over 20 sq. ft. Most of the plate glass used in glazing is known as "Glazing Quality." Definite requirements for tolerances in thickness and dimensions are set up in U. S. Government specifications. The general requirements under U. S. standards are:

SIZE AND THICKNESS

The standard thickness of plate glass shall be 1/8, 3/16, 1/4, 3/8, 1/2, 5/8, 3/4, 1, 1 1/4 and 1 1/2 in. Sheets are available 1/4-in. thick in sizes having a maximum area of 250 sq. ft. Glass of 1/4-in. thickness may be furnished in any dimensions under the maximum 126 x 284 in. The standard stock thickness for glazing purposes is 1/4 in., but this may vary between 7/32 and 5/16 in. Standard thickness of colored plate glass is 7/32 in.

TOLERANCES IN THICKNESS

The maximum and minimum thickness allowed shall not be more than the given thickness plus or minus one half the difference between the standard thicknesses, although for 1/4-in. glass occasional plates as thick as 5/16 in. are supplied. The general variation in thickness should not be more than 1/32 in. for individual lights under 10 sq. ft., in thicknesses up to 1/4 in. The variation in lights over 1/4 in. in thickness should not exceed one half the total tolerance for that thickness.

STANDARD SPECIFICATION

Where polished plate glass is specified or shown on plans, it shall be manufactured by the Libbey·Owens·Ford Glass Company, and shall be of (—) quality and (—) thickness (insert quality and thickness) in accordance with U. S. Government Standards.

POLISHED PLATE GLASS FOR *Mirrors*

MIRRORS have become, in many instances, an integral part of architectural design. In modern residences, as well as in stores and public buildings, they form an important part of the interior decorative motif. As the use of silvered plate glass continues to broaden, its specification and adaptation become more and more a province of architecture.

Libbey·Owens·Ford Polished Plate Glass is noted for its brilliant polish and freedom from imperfections.

STANDARDS OF QUALITY • For the guidance of the architect and owner and for the protection of the mirror manufacturer, the following standards of quality have been approved by the Mirror Manufacturers Association of America.

A QUALITY • The central area of mirrors of this quality shall be free from major defects, but may contain well-scattered seed and short faint hair lines, when not grouped, and occasionally very light short finish visible only on close inspection. The outer area, in addition to the foregoing, may contain seed and short faint scratches when not grouped.

No. 1 QUALITY • The central area of mirrors of this quality may contain scattered seed, faint hair lines, and light short finish. The outer area in addition to the foregoing may contain short scratches and occasional strings not over 2 in. long.

No. 2 QUALITY • Mirrors of this quality may contain the following defects: Numerous scattered seed, occasional coarse seed. light reams, strings, light scratches, short finish if not torn, hair lines if not too densely grouped, and bulls-eye if not visible from front inspection.

THICKNESS • Plate glass mirrors of commercial standard quality shall be between 3/16 and 1/4 of an inch thick. If specific thicknesses are ordered, a variation of 1/32 in. plus or minus the given thickness shall be allowed.

SILVERING • All commercial standard quality mirrors shall be silvered in an approved manner and guaranteed for a period of one year from the date of manufacture unless the mirrors are subjected to unusual conditions, such as open weather, moist walls, steamed rooms, direct sunlight or, similar conditions.



Below—The inherent beauty of polished plate glass contributes to the cheerfulness of this attractive dining room at "Forest Lodge," Tucson, Arizona. Margaret, Countess of Suffolk is the owner, the architect, Richard Morse, A. I. A.

The romance and fascination of sparkling glass exemplified in the living room of "Forest Lodge," Tucson, Arizona, the owner, Margaret, Countess of Suffolk, the architect, Richard Morse, A. I. A.



Below—The beauty and color of the desert, painted in a picture window at "Forest Lodge," Tucson, Arizona, the owner, Margaret, Countess of Suffolk, the architect, Richard Morse, A. I. A.



An interesting interior by Virginia Conner, where the sparkling beauty of mirrored plate glass is the keynote of the decorative scheme. Note the unique use of mirrors on the doors at the right.





Interior design by Paul MacAlister, A. I. D. Grosfeld House Exhibition, New York.

Colored PLATE GLASS

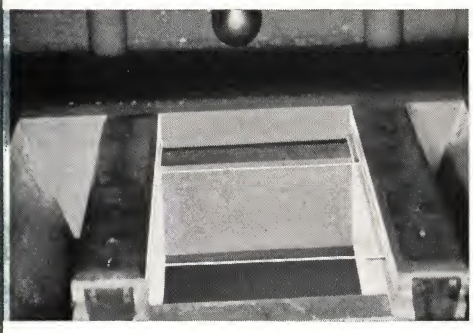
Architects and interior designers are finding that polished plate glass in colors is a valuable aid in creating interesting effects both in residences and public buildings. In mirrors, the golden, the peach, the green, and any of the three shades of blue plate glass may be used to add a cheerful emphasis to the decorative treatment. Golden plate, when silvered, gives the same effect as the more expensive and difficult to make golded mirror. Too, golden plate must not be confused with the various ambers which, when silvered, have a muddy or coppery appearance. Peach color plate glass is used both in the mirror and the reflected picture window illustrated above. From within, the view through this delicately colored plate glass window assumes unusual warmth.

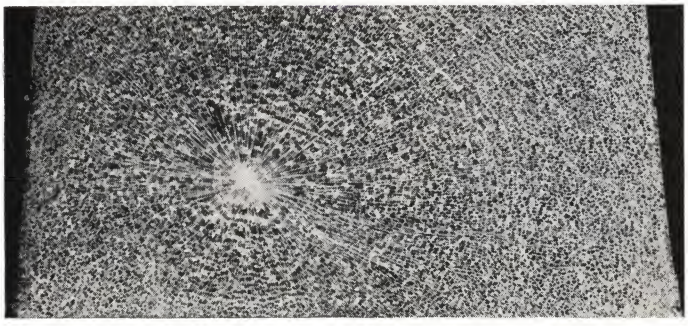
TUF-FLEX *Tempered* PLATE GLASS

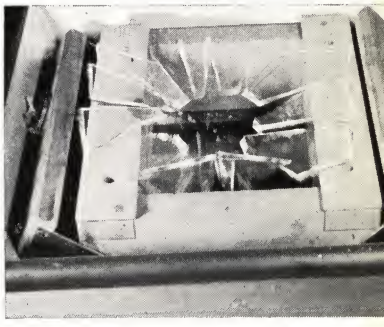
● **TUF-FLEX** is a tempered plate glass made by a special process of reheating and cooling polished plate glass. It is much stronger than plate glass of the same thickness and more resistant to impact and thermal shock. Tuf-Flex is ideally suited for glass shelving and fire-screens; for port-hole glass in ships; for sterilizing ovens, oven doors and similar enclosures subject to extreme heat changes; for glazing doors of stores and public buildings and places of amusement; for kick-plates on doors; for show-case shelves in stores and in exhibition cases in museums; for use in modern fixtures; and as a practical substitute for wire glass in skylights and monitors when additional light is required. These are a few of the many practical new uses for Tuf-Flex constantly being discovered.

Tuf-Flex is furnished in clear or colored plate glass. Vitrolite Structural Glass can also be tempered into Tuf-Flex to give it extra strength and greater heat resistance. Tuf-Flex can be supplied silvered, ground or etched, but cannot be cut after it is tempered, consequently **the exact sizes required must be specified.** It is available in sizes not exceeding 48 x 48 in. and in thickness from ¼ in. up, with the exception of Tuf-Flex made of colored plate glass which is produced in 7/32-in. thickness only. Complete information on Tuf-Flex is available in booklet form.

*While Tuf-Flex is not unbreakable, its tempering process limits its susceptibility to breakage. Chipping or puncturing exposed edges or surfaces causes the glass to disintegrate into small crystals which have a tendency to fly apart.



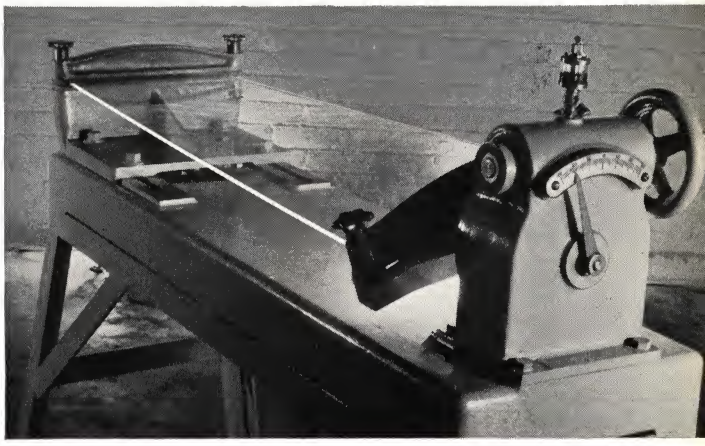






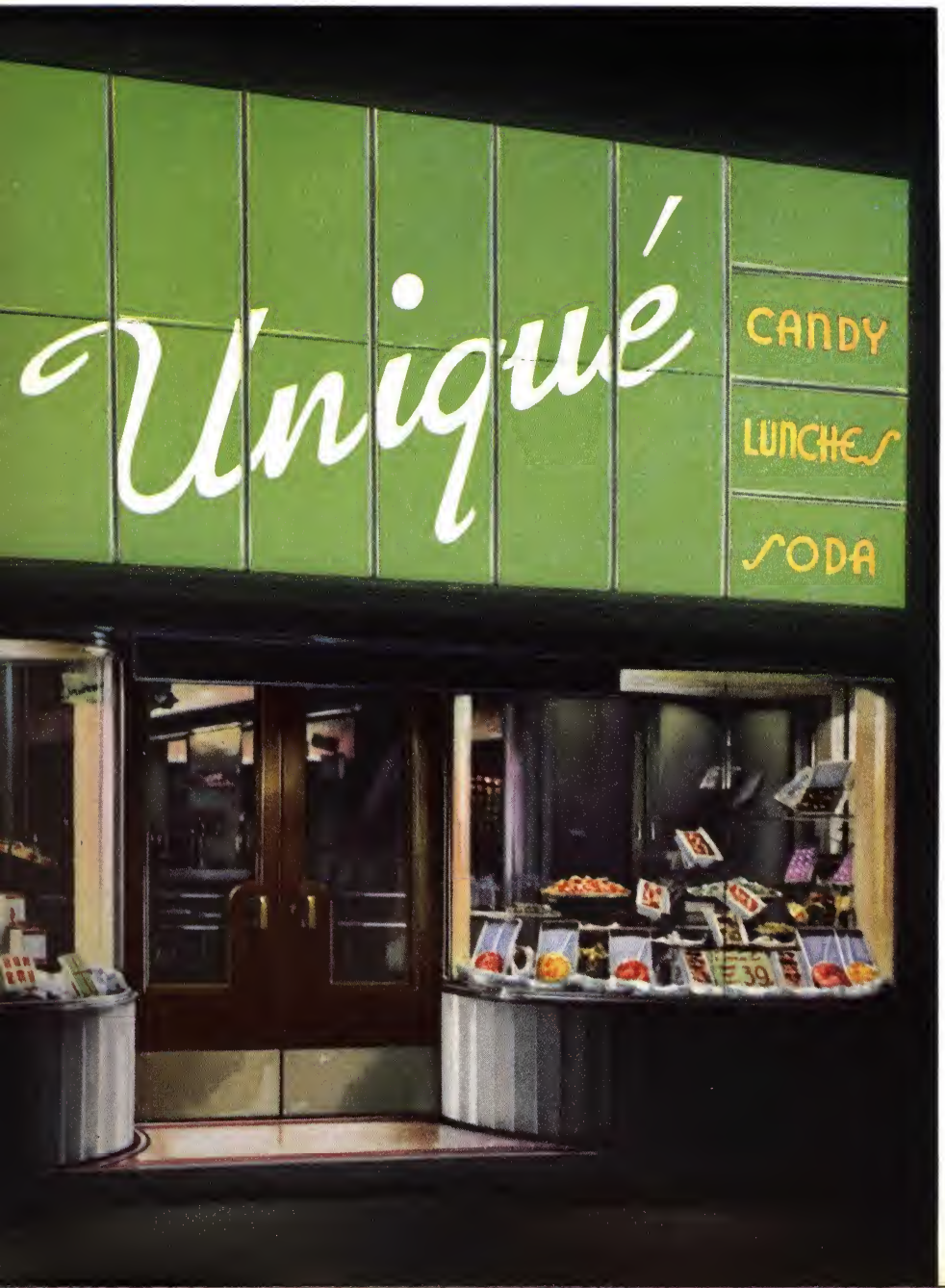
ABOVE ● The photograph on the left shows a 2-pound steel ball bounding back from a 12 x 12-in. light of ¼-in. Tuf-Flex, after a drop of 5 ft. At the right, from less than 1 ft., the same ball shatters a similar light of ¼-in. regular plate glass. The center photograph shows the manner in which Tuf-Flex disintegrates when the limit of resistance is reached.

BELOW ● At the left, Tuf-Flex does not break when molten lead is poured on it, even though the ¼-in. light rests on a cake of ice. Regular plate glass, similarly tested, shattered instantly. At the right, a 12 x 48-in. light of Tuf-Flex twists through an angle of 20 degrees without failure. Regular plate glass of the same size and thickness failed at 7 degrees.



VITROLUX COLOR FUSED TEMPERED *Plate Glass* OFFERS

Limitless combinations for store fronts . . . theaters . . . restaurants . . . gas stations



● In recent years architecture has been seeking a more skillful, a more colorful use of light. This architectural demand for a medium offering diversified colors and surfaces evenly luminous by better light diffusion has led to the creation of VITROLUX. Now, luminous color as an integral part of the structure itself opens up vast new design possibilities. Luminous buildings that "give off," not merely reflect light, become beacons of soft, glowing color. Store fronts are created that bring every eye to attention.

VITROLUX—three to seven times stronger than ordinary plate glass and highly resistant to thermal shock—is offered in a wide range of colors, translucent or opaque. It becomes, therefore, the logical companion of VITROLITE (opaque colorful structural glass, a product of Libbey · Owens · Ford Glass Company) in achieving full realization of modern design possibilities in commercial fronts and in details of residential interiors.

TWO TYPES of Vitrolux are available—TRANSLUCENT in 18 colors, OPAQUE in 9 colors, or any two-color COMBINATION. Infinite design possibilities thus afforded are further increased when considered in conjunction with VITROLITE.

TRANSLUCENT VITROLUX diffuses light with such exceptional uniformity that with properly designed lighting, no bright spots reveal the source of illumination. When not illuminated, Translucent Vitrolux appears to be a solid opaque colored glass.

No other material available today has the same combination of characteristics that makes Vitrolux the outstanding material for store fronts. Vitrolux provides even diffusion of light; the fire fused colors are an integral part of the glass and because of its unusual resistance to thermal shock it is not affected by rain or snow coming in contact with the warmed surfaces of the lighted glass area.

A colorful and attention arresting front at Niagara Falls, New York showing illuminated Vitrolux set in sparkling Extrudalite, with a bulkhead of sandblast fluted white Vitrolite. C. T. Macheras, Designer.



An entire store front may be designed to provide space for lighting and is thus transformed by the use of Vitrolux into a startlingly different new type of front —appealing to the eye—advanced in smartness. Vitrolux is ideally suited for lettering of exterior signs on store fronts and other commercial buildings. Cut-out wood or metal letters provide silhouette lettering. Also, signs of two-color Vitrolux may be furnished in two translucent colors—or an opaque background with translucent letters—or a translucent background with opaque letters. Any of these combinations produce a striking effect. Vitrolux is particularly applicable to theater fronts, transoms, bulkheads and gas stations. And because of its exceptional strength and unusual resistance to thermal shock, Vitrolux is highly effective in the creation of attractive overhead hanging signs—particularly in localities where codes normally restrict the size of glass panels because of danger of breakage. For if broken, this new, remarkable type of glass crumbles into relatively small particles resembling bath salts—an added provision for public safety.

While Vitrolux is not unbreakable, its tempering process limits its susceptibility to breakage. Chipping or puncturing exposed edges or surfaces causes the glass to disintegrate into small crystals, and if not framed, the crystals have a tendency to fly apart.

OPAQUE VITROLUX is made at present in nine colors, six of which match the six standard plain colors of Vitrolite and special colors can be furnished on order. Opaque Vitrolux may be installed with mastic in the same manner as structural glass.

LEFT—Luminous signs that are strikingly beautiful can be created with translucent Vitrolux. Lettering and color are an integral part of the glass.

The Baron Stiegel Room of the Brunswick Hotel, Lancaster, Pa., uses translucent Vitrolux installed in Extrudalite store front metal over bulkheads of bent red Vitrolite. The complete ensemble offers brilliant welcome to all who pass by day or by night. C. T. Macheras, Designer.

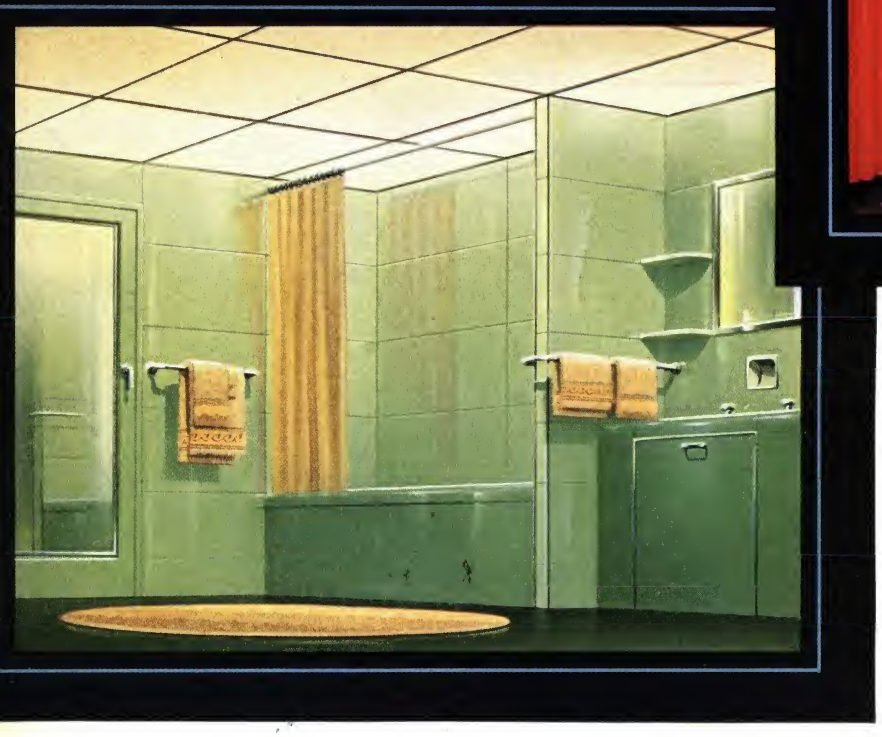


18/3

IN *modern homes* USE VITROLUX AND VITROLITE

● Rare and distinctive beauty is attained in modern bathrooms with the combined use of Vitrolite and Vitrolux. Walls of Vitrolite in soft shades with luminous Vitrolux for ceiling lighting elevate the bathroom to a new plane of attractiveness and convenience—make it modern.





GENERAL SPECIFICATIONS FOR VITROLUX

VITROLUX is Tuf-Flex Tempered Plate Glass with the added feature of vitreous color—fire-fused on the back surface to become an integral part of the glass itself. Vitrolux color is of the sunfast type and offers the same natural resistance to weathering, crazing and checking as ordinary glass. Vitrolux Glass can only be furnished cut to exact size or pattern. All edgework, pattern cutting or drilling of holes, etc. must be done at the factory.

DIMENSIONS—Thickness ¼" only. Maximum length 48". Maximum breadth 48". No lights furnished in long, thin proportions exceeding 1 to 12. Examples of limits: 2" x 24", 3" x 36", 4" x 48".

CUTTING—Vitrolux cannot be cut or ground after manufacture. This necessitates careful layout work as exact dimensions must be given in ordering.

EDGEWORK—Unless otherwise specified, all Vitrolux is furnished with seamed (or swiped) edges at no extra charge. On order, Vitrolux will be furnished with polished edges, bull noses or most types of standard edgework.

TONG MARKS—Always found along one edge. (Small lights may be produced without them.)

DRILLED HOLES—Minimum size of hole that will be drilled, ¼" diameter. All holes or apertures must have minimum distance of 1½" from perimeter to edge of light.

WARPAGE—Slight warpage possible, never serious enough to interfere with installation.

INSTALLATION—Vitrolux should be handled as glass, bearing in mind, of course, that it can be neither worked nor altered on the job. Translucent Vitrolux should be installed exactly as ordinary glass is installed. When used for structural purposes, opaque Vitrolux should be installed exactly as structural glass is installed.

Essentials

OF LIGHTING DESIGN FOR LUMINOUS ELEMENTS OF VITROLUX GLASS

LIGHTING METHOD— The recommended lighting of translucent Vitrolux Glass is accomplished by placing electric lamps behind the glass and enclosing them with reflecting surfaces. These reflecting surfaces may assume various shapes or forms referred to as Element Forms, and while no general set of design data can embrace all the conditions encountered in luminous architecture, the eight Element Forms illustrated in accompanying tables are typical of a wide range of applications.

REFLECTING SURFACE—It is extremely important to economy and effective luminosity to completely enclose the lamps behind the glass with a reflecting surface of high efficiency. All interior surfaces should have a white finish such as mat white paint.

ELECTRICAL EQUIPMENT—The lighting design is based upon the use of standard Mazda lamps, and no special fittings or reflectors are required in most elements.

BRIGHTNESS—The desirable brightness for luminous displays governs the lamp wattage to be selected. Brightness is the degree of brilliancy of a surface and is measured in Foot-Lamberts. A luminous surface of too high brightness causes glare while a luminous surface too low in brightness is drab and unattractive. An installation of any given Foot-Lamberts will have an effect of low brightness or high brightness under varying conditions such as size and brightness of nearby displays and surrounding areas and size of the installation itself. And different types of commercial establishments require not only a careful color selection but different degrees of brightness to provide the desired effect. With certain colors, too, a lower brightness often proves effective.

USE OF TABLES—The following table lists various types of installations and recommends the degree of brightness most advantageous in low-, medium- or high-brightness districts. In selecting the lamp wattages from Table II only an approximate brightness value is required from Table I.

(TABLE I)
SUGGESTED AVERAGE BRIGHTNESS VALUES FOR VITROLUX
(In Foot-Lamberts)

Type of Luminous Installation	General Brightness of District		
	Low	Medium	High
Luminous store fronts, luminous transoms, luminous backgrounds and signs	80–130	100–200	150–350
Projecting units of dominant character	50–130	70–170	150–300
Decorative flush units (Principal units in design)	30–100	50–150	100–300
Translucent letters with an opaque background	150–200	200–400	300–600
Marquees, pylons, gasoline service stations, etc.	80–150	100–250	200–400
Interior ceiling installations: (Approx. upper limits)			
High ceilings	500		
Low ceilings	250		
Interior bathroom and shower ceilings	75		

ELEMENTS— The majority of the eight luminous element forms illustrated and tabled below are adaptable to typical Vitrolux applications. Each offers advantages to particular installations such as—No. 3, shallow background; No. 1, use of lower wattage; No. 5, more suitable to corner installations.

LAMP LOCATION AND SIZE— After the selection of the element form, the table accompanying the element chosen will determine such factors as size and wattages of lamps, distance from the back of the glass to the center of the lamp and correct spacing between lamps. In the tables below,

W—represents the width of the Vitrolux glass to be illuminated.

D—is the distance from the back of the Vitrolux glass to the center of each lamp.

S—is the maximum spacing between lamps for uniformity of brightness (measured between centers of filaments).

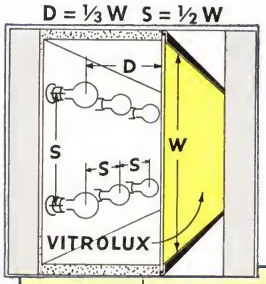
EXAMPLE— For a transom sign 30" high the element form must first be chosen. If, say, element form 2 is chosen, run down the column headed W to 30 and we find that the lamps should be spaced 10 inches behind the glass and 15 inches apart. The other figures at the right represent varying degrees of brightness as set forth in Table I. If brightness 150 is selected, the figure at the top of the column indicates that 60-watt lamps should be used.

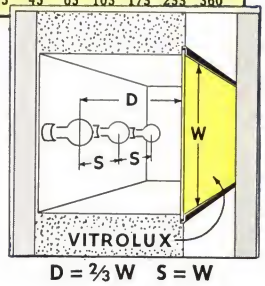
(TABLE II)
COMPUTED AVERAGE BRIGHTNESS VALUES IN FOOT-LAMBERTS FOR LUMINOUS ELEMENTS OF DIFFUSING WHITE VITROLUX GLASS

(Depreciation from initial values has been allowed for—initial brightness x 0.7)

ELEMENT FORM No. 1

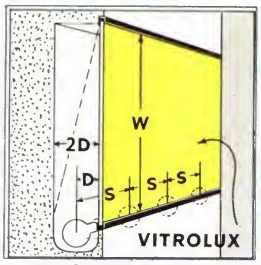
Dimensions in Inches			Watts per Lamp												
W	D	S	10	15	25	40	50	60	75	100	150	200	300	500	750	1000
6	4	6	90	160	290	500										
9	6	9	40	70	130	220	295	415	535							
12	8	12	20	40	70	125	165	230	300	430						
15	10	15		25	45	80	105	150	195	275	465					
18	12	18			30	55	75	105	135	190	320	455				
24	16	24				30	40	60	75	105	180	255	410			
30	20	30					25	35	50	70	115	165	260	450		
36	24	36						25	35	50	80	115	180	310	455	
48	32	48								25	45	65	105	175	255	360





ELEMENT FORM No. 2

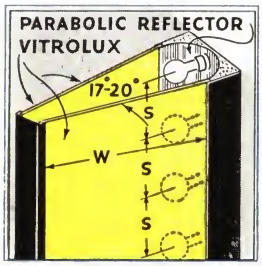
Dimensions in Inches			Watts per Lamp												
W	D	S	10	15	25	40	50	60	75	100	150	200	300	500	750	1000
12	4	6	90	160	290	500										
18	6	9	40	70	130	220	295	415	535							
24	8	12	20	40	70	125	165	230	300	430						
30	10	15		25	45	80	105	150	195	275	465					
36	12	18			30	55	75	105	135	190	320	455				
48	16	24				30	40	60	75	105	180	255	410			



D = 1/10 W S = 2/10 W

ELEMENT FORM No. 3

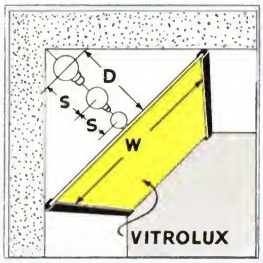
Dimensions in Inches			Watts per Lamp												
W	D	S	10	15	25	40	50	60	75	100	150	200	300	500	750	1000
18	2	4	25	45	85	145	190	265	345	490						
24	2½	5		25	50	85	115	160	210	295	500					
30	3	6			35	55	75	105	140	195	330	470				
36	3½	7				40	55	75	100	140	240	335	535			
48	5	10					30	40	50	75	125	175	280	480		



S = 2/5 W

ELEMENT FORM No. 4

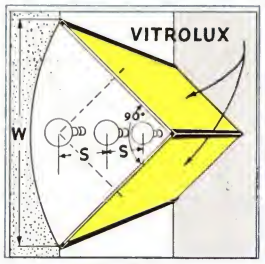
Dimensions in Inches			Watts per Lamp												
W	D	S	10	15	25	40	50	60	75	100	150	200	300	500	750	1000
18		8			35	65	85	115	155	220	370	520				
24		10				40	50	70	190	130	220	315	500			
30		13					30	45	55	80	135	195	310	530		
36		15						30	40	60	100	135	215	380	555	
42		18							30	40	70	100	165	270	400	
48		21								30	55	75	120	205	300	425



D = 2/5 W S = 3/5 W

ELEMENT FORM No. 5

Dimensions in Inches			Watts per Lamp												
W	D	S	10	15	25	40	50	60	75	100	150	200	300	500	750	1000
12	5	7½	40	65	125	215	285	400	515							
15	6	9	25	45	85	140	190	265	345	490						
18	7	10½		30	60	100	135	190	245	350	590					
24	10	15			30	55	70	100	130	185	310	440				
30	12	18				35	45	65	85	120	210	290	465			
36	14	21					35	45	60	85	150	210	335	575		
48	19	29						25	35	50	80	110	180	320	450	

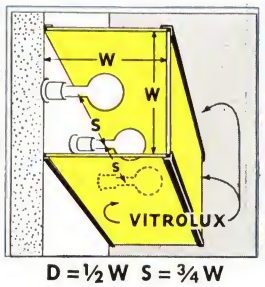


S = 1/2 W

ELEMENT FORM No. 6

Dimensions in Inches			Watts per Lamp												
W	D	S	10	15	25	40	50	60	75	100	150	200	300	500	750	1000
12	*	6	40	70	130	220	295	415	535							
18	*	9		30	55	100	130	185	240	340	570					
24	*	12			30	55	75	105	135	190	320	445				
30	*	15				35	45	65	85	120	205	290	465			
36	*	18					35	45	60	85	145	200	320	555		
48	*	24						25	35	50	80	115	180	310	450	

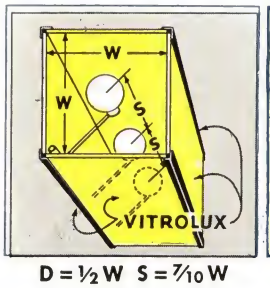
*Position Lamps Equidistant from the two sizes.



D = 1/2 W S = 3/4 W

ELEMENT FORM No. 7

Dimensions in Inches			Watts per Lamp												
W	D	S	10	15	25	40	50	60	75	100	150	200	300	500	750	1000
12	6	9		25	50	85	115	160	205	290	495					
18	9	13½			20	40	50	70	90	130	220	315	500			
24	12	18					30	40	50	75	125	175	280	480		
30	15	22½						25	35	45	80	110	175	310	450	
36	18	27							25	35	55	80	125	215	310	445
48	24	36								20	30	45	70	120	175	250



D = 1/2 W S = 7/10 W

ELEMENT FORM No. 8

Dimensions in Inches			Watts per Lamp												
W	D	S	10	15	25	40	50	60	75	100	150	200	300	500	750	1000
12	6	8½			45	80	105	145	190	270	460					
18	9	12½				35	50	65	85	125	210	295	470			
24	12	17					25	35	50	70	115	160	260	445		
30	15	21						25	30	45	75	105	165	290	420	595
36	18	25								30	50	75	115	200	290	410
48	24	34									30	40	65	110	160	230

(TABLE II—Continued)

NOTE: These tables are based on enclosed white reflecting surfaces reflecting 75% of the light.

For the sake of simplicity, only a single sheet of Vitrolux glass covers the face of the element in each of the element forms illustrated. But it is, of course, possible to use any desired number of pieces of glass for the face of the element.

To produce luminous areas larger than those shown in the tables, element forms may be combined one above or beside another. For example, the design of lighting for an area 12 ft. high may be composed of 3 units of Element Form No. 1, each 48" high, and the size and location of lamps determined directly from the table of Element Form No. 1. In this case the abutting reflecting surfaces of the three combined elements may be omitted, enclosing the lamps with the outer end and rear reflecting surfaces only.

If such a design results in a depth greater than practical, the distance behind the glass may be reduced by designing the lighting to be comprised of four element forms each 36" high, etc., etc.

LIGHTING DESIGN OF VITROLUX IN COLORS OTHER THAN WHITE

The lighting design for other colors should be determined by the same procedure followed in the design for lighting for white Vitrolux. The same values of "D" and "S" should be used regardless of color.

The lamp wattages as determined in Table II for white Vitrolux may also be used for

Ivory	**Deep Orange**
Yellow	**Chinese Red**
Bright Yellow	**Brilliant Red**
Light Orange	**Bright Red**

It is suggested that the next larger size of lamp be used for

Pastel Green	**Apple Green**
Sea Green	**Light Blue**
	Baby Blue

Lamps two sizes larger than those determined by Table II are recommended when using

Irish Green	**Dull Green**
Dark Green	**Medium Blue**

For example, in working out an installation in which Table II requires 60-watt lamps for white Vitrolux, use 75-watt lamps instead, if Pastel Green Vitrolux is used. If Irish Green Vitrolux is to be installed, use 100-watt lamps instead of 60-watt lamps.

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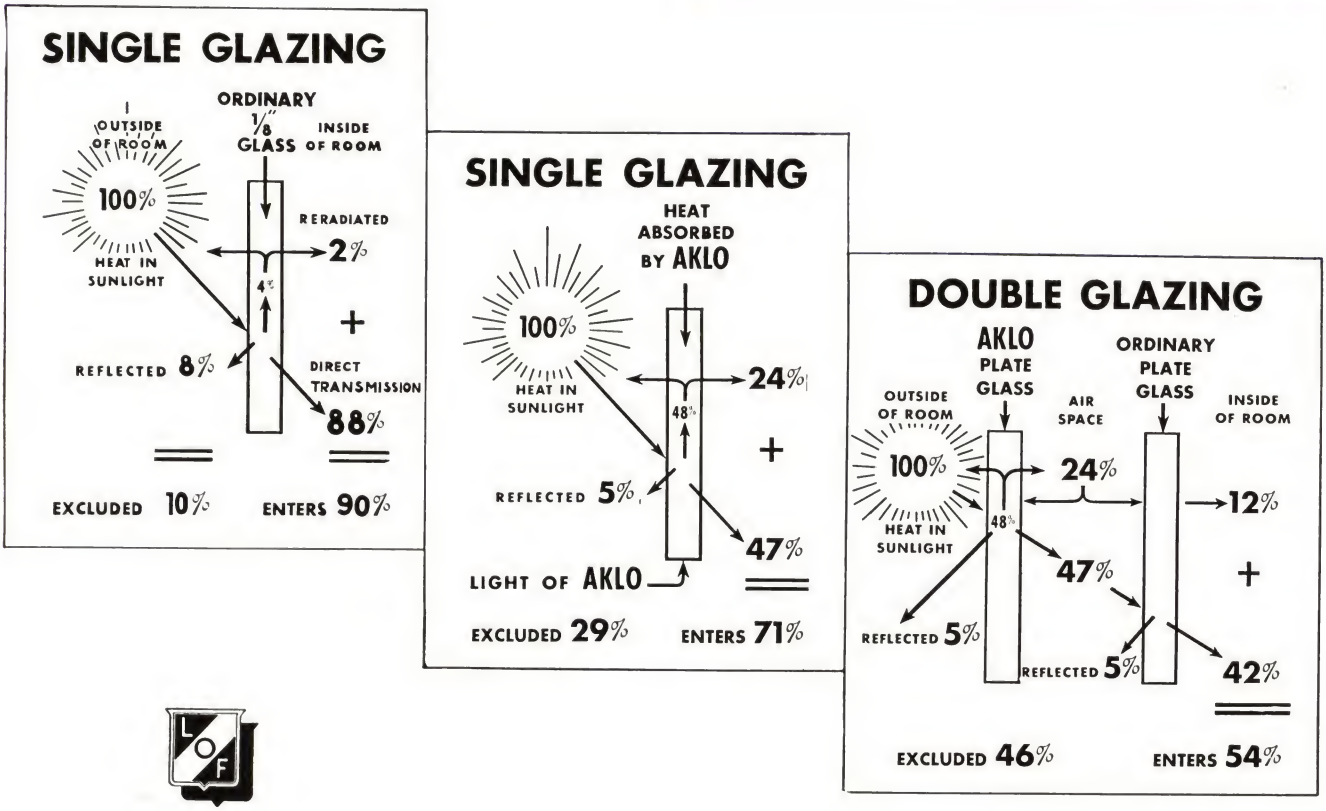
In figuring wire sizes and circuit layout, it is good practice to allow capacity for at least one size larger lamp than planned in order to provide a margin for testing or future increases of brightness.

AKLO HEAT-ABSORBING PLATE GLASS

AKLO Plate Glass is a glass of special chemical composition that has the peculiar property of absorbing heat. It is a practical aid in solving the problem of transmission of solar heat into all types of buildings. Even when air-conditioning equipment is installed to assure comfortable temperatures by artificial means, AKLO Plate Glass reduces the cost of operating that equipment by reducing the total cooling load for a given window area. Double glazing, of course, is always recommended and is practically essential with air-conditioning equipment. AKLO simply increases its efficiency, as is evident from the table at the right that records the results of laboratory experiments.

AKLO Plate Glass absorbs the infra-red rays from the sun and from artificial light. In the table at the right, the maximum temperature differences between the inside and outside of an enclosure were measured in a small box 6 x 6 x 3 in. in which a small window was placed using different kinds of glass. The temperature differences were measured with the sun shining through the glass on the blackened bulb of a thermometer. These temperatures indicate to some extent what might be expected in a large room. The maximum difference in temperature inside and outside of a room will depend upon the area of the window or the heat energy transferred into the room, volume or heat capacity of the room and the rate of heat loss through the room.

Glass	Visible Light Transmitted	Total Radiant Heat Excluded	Maximum Temperature Difference Inside Enclosure and Outside
Ordinary sheet glass	92%	10%	79.5° F.
AKLO	78%	29%	60.0° F.
Double window, ordinary sheet glass	85%	19%	77.5° F.
Double window, AKLO and ordinary sheet glass	72%	45%	48.0° F.



Blue Ridge

FIGURED AND WIRE GLASS



POLISHED WIRE GLASS

(Wire Mesh Shown Actual Size.) Used in all openings where clear vision and the security of non-scatterable fire-retardant glass are desired. Genuine polished plate glass with wire reinforcement. Note that the wire is clean—no disfiguring bubbles on the twisted wire to mar the sharp outline or distort the vision. Blue Ridge's outstanding quality product. (See table of sizes, thicknesses, etc.)

● Familiar uses for Rolled Figured and Wire Glass and Polished Figured and Wire Glass manufactured by Blue Ridge Glass Corporation include the glazing of partitions, doors, transoms, windows, and skylights. The current architectural trend introduces many other innovations. For example, a variety of attractive ornamental effects is achieved with plain or decorated figured glass panels, screens and lighting fixtures in private homes and public buildings as well as in show windows and interiors of fine stores. Structures designed to interpret the current mode which uses glass so liberally afford many opportunities for practical and distinctive applications of Blue Ridge products.

Blue Ridge Glass is carried in stock by leading glass jobbers and glazing contractors or can be furnished promptly by them through quick shipment of any pattern, size and thickness from the factory's ample supplies.

The following unvarying features distinguish this glass and keep it in high favor with leading architects of the nation: (1) Uniform quality and thickness; (2) Sparkling brilliance; (3) Attractive and efficient patterns; (4) Easily cleaned designs; (5) Light transmitting and diffusing effectiveness; (6) Versatility of use; and (7) Wire glass fire-retarding properties (approved by Underwriters' Laboratories, Inc. as Number R-2129).

In contemplating the use of or in specifying figured and wire glass, it is well to remember these few important facts: (1) State width (horizontal measurement) first, and height (vertical measurement) second, when writing the size of any kind of glass; (2) Wire glass is usually set with the wire running vertically, hence the first dimension given is understood to be across the wire twists (width) unless specifically shown otherwise; (3) Ribbed glass is generally glazed with the ribs running vertically (parallel to height); (4) Prism glass distributes light best when prisms are set horizontally (parallel to width); (5) Specify kind of glass by name and give thickness and finish (see table of Patterns, Thicknesses, Sizes and Weights); (6) Stipulate Blue Ridge Glass Corporation as the manufacturer and insist that Blue Ridge Glass be furnished.

The Standard Specification, Obscure and Wire Glass is as follows: Where figured or polished wire or obscure glass is specified herein, or shown on plans, it shall be (—) in. in thickness and shall be (—) pattern (specify thickness and pattern desired), and shall be manufactured by the Blue Ridge Glass Corporation.

BLUE RIDGE WIRE GLASS

FIRE RETARDANT NO. R-2129

STRENGTH. The exclusive method of manufacture employed by Blue Ridge effectively centers the wire in the glass. This is extremely important as wire glass is specified and used because of its fire-retarding properties and its greater resistance to breakage by impact and wind pressure as compared with unwired glass. In a series of tests conducted by a well-known physicist, it was found that glass with properly centered wire was consistently stronger than glass of the same thickness and pattern in which the wire was substantially closer to one surface than the other. The difference ran as high as 42% in some of the comparisons. When Blue Ridge Wire Glass, Figured or Polished, is specified the advantage of this extra strength is assured because the wire is placed where it should be—approximately in the center.

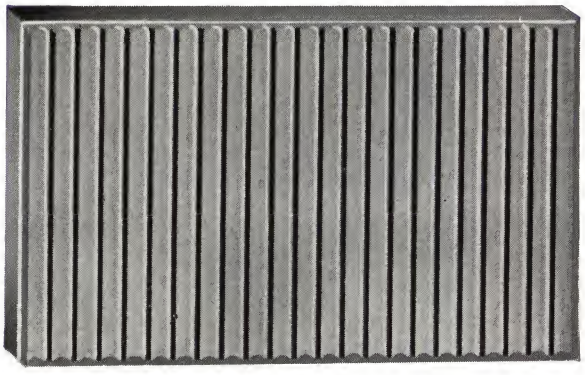
APPEARANCE. Another outstanding feature of our wire glass is its freedom from the clusters of bubbles on the wire that are so objectionable when appearance of the job is considered. And the wire itself is bright, clean and untarnished—all the result of a superior method of manufacture in which both physical properties and appearance of the product are given equal consideration.

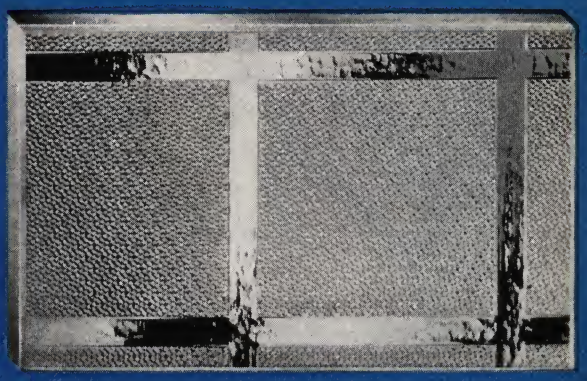
LIGHT TRANSMISSION. The effect of wire in glass is to reduce the amount of light transmitted by about 10% as compared with unwired glass of the same pattern, thickness and batch composition.

UNDERWRITERS' RESTRICTIONS. The rules and requirements of the National Board of Fire Underwriters limit the size of wire glass which can be glazed in openings exposed to fire hazard. In no case shall the unsupported area of the glass measure more than 48 in. in either dimension or exceed 720 sq. in. (5 sq. ft.). Typical maximum sizes which satisfactorily meet that requirement are 15 x 48, 18 x 40, 20 x 36 and 24 x 30. It should also be noted that wire glass used for this purpose must be set in non-inflammable materials. Blue Ridge Wire Glass is an approved fire retardant bearing number R-2129 of the Underwriters' Laboratories, Inc.

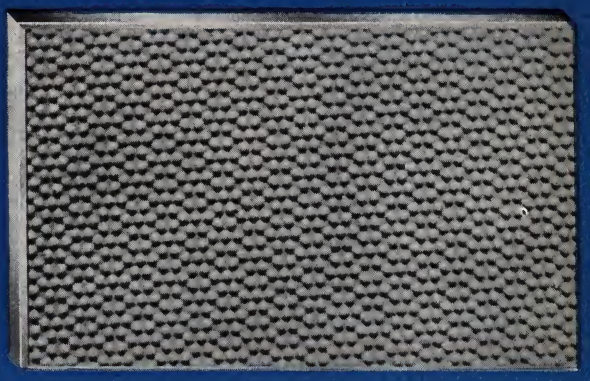
See table of Patterns, Thicknesses, Sizes and Weights for list of patterns available in wire glass.

SKYTEX GLASS • (Pattern Shown Actual Size.) A pattern containing eight parallel vertical ribs per inch which spread the light passing through the glass and drain off condensation. Chiefly used in skylights, but equally suitable for general industrial glazing. Available both plain and wired. (See table of Sizes, Thicknesses, etc.)

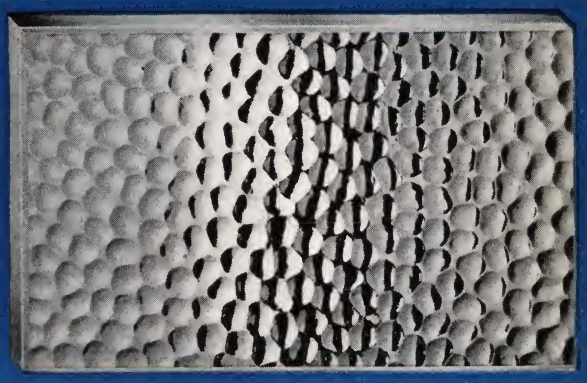




TRANSEX GLASS • (Pattern Shown About ⅓ Size, squares 3½ x 3¼ in., division lines ⅛ in. wide.) For store-front transoms. A solid sheet of glass made to resemble separate panes set in metal bars. No cemented joints to weaken under the stress of wind and rain storms. The background pattern (Diffusex) and the smooth division lines are uniformly and but slightly elevated without pits, grooves or sharp angles in either. Transex will remain clean and distribute light efficiently even under unfavorable conditions long after dirt collections have destroyed the effectiveness of ordinary tiled or prism transoms. (See table of Sizes, Thicknesses, etc.)



DIFFUSEX GLASS • (Pattern Shown Actual Size.) Primarily for interior partitions, doors and transoms, but equally effective in any location where an adequate volume of softly diffused light is desired. An attractive grouping of small and very slightly elevated lenses spaced far enough apart to avoid dirt collecting pockets and to permit easy cleaning with a moist cloth. Available both plain and wired. (See table of Sizes, Thicknesses, etc.)



HAMMERED GLASS • (Pattern Shown Actual Size.) For general industrial glazing—exterior and interior. The contiguous lenses forming the pattern distribute the light passing through the glass and accentuate the brilliance of the metal. A clean glass with beauty and mechanical efficiency. Available both plain and wired. (See table of Sizes, Thicknesses, etc.)

Some facts

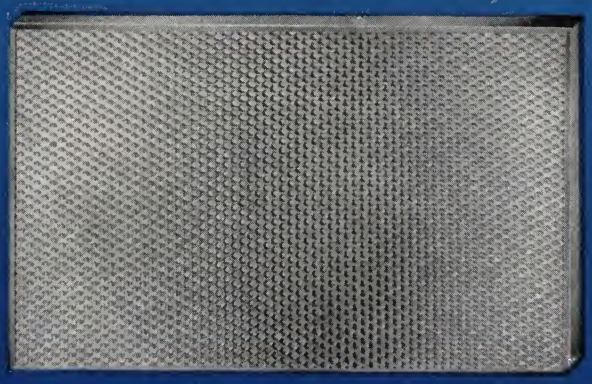
ABOUT TRANSMISSION AND DIFFUSION OF LIGHT BY figured GLASS

TRANSMISSION. Figures showing the percentage of light transmitted by one type of glass or another should always be accepted as only approximate in specifying glass for factory and commercial buildings. There are two very logical reasons why positive values cannot be established.

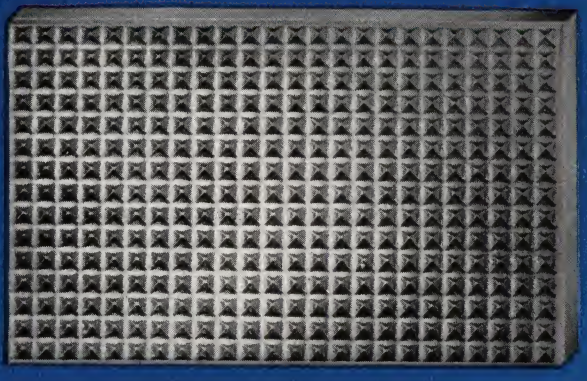
In the first place, transmission factors determined by laboratory apparatus in the hands of experienced observers often show wide variations. Differences up to 5% in the readings are not uncommon. In the second place, and of even greater significance, such studies are practically always made of glass that has been thoroughly washed and cleaned.

Obviously, glass in windows, skylights, transoms, doors and partitions in factory buildings (and to a lesser extent office buildings), cannot possibly be maintained in the same spotlessly clean condition as the laboratory samples. Glass will get dirty, some types more quickly than others, and dirt prevents the passage of light through the glass. Even clear window glass, which has two smooth surfaces, has been found to have lost about 50% of its original efficiency due to dirt collection within six months after glazing in windows of factory buildings. And the loss was 83% in the same set of tests for windows set on a slope of 60 degrees—the pitch of the average skylight.

Use glass liberally to insure adequate daylighting within buildings both old and new and, of equal importance, specify patterns that are free from grooves, crevices and pits which will collect dirt rapidly and hold it even if the glass is washed frequently. Blue Ridge Luminex, Diffusex, Industrex, Muralex, Hammered and Velvex are especially recommended for cleanliness and high transmission values. Transex, for store-front transoms, is another Blue Ridge pattern of the shallow type.



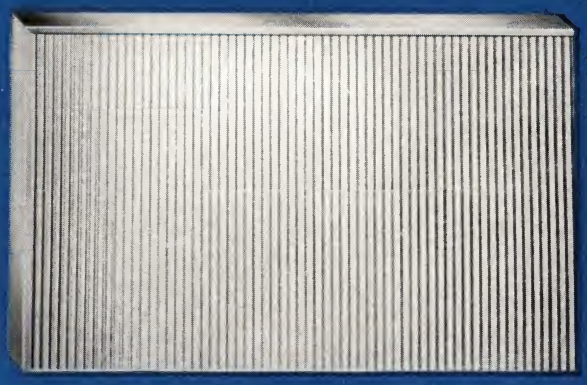
INDUSTREX GLASS • (Pattern Shown Actual Size.) For industrial and commercial buildings—exterior and interior openings. A compact arrangement of lens-shaped figures combining effective distribution of light and attractive appearance without the disadvantage of deeply cut grooved lines. Not a "dirt collector." Industrex can be easily cleaned with a moist cloth. Available both plain and wired. (See table of Sizes, Thicknesses, etc.)



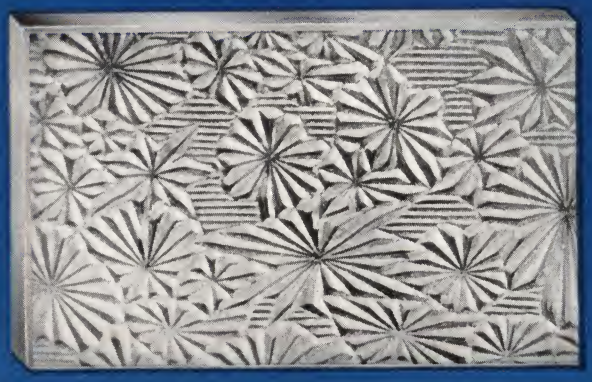
REGLEX GLASS • (Pattern Shown Actual Size.) A popular pattern for the interior glazing of fine buildings. The design is made of pyramidal-shaped indentations—64 to the square inch—which diffuse the light remarkably well and at the same time provide great obscurity. (See table of Sizes, Thicknesses, etc.)



PEBBLEX GLASS. (Pattern Shown Actual Size.) An unusually brilliant and obscure glass for office building interiors; diffuses light splendidly and affords privacy within the room. Pebblex is more deeply imprinted than some of the newer Blue Ridge patterns such as Diffusex and Muralex. Its attractive appearance has led many architects to specify it. Available both plain and wired. (See table of Sizes, Thicknesses, etc.)



RIBBED GLASS • (Pattern Shown Actual Size.) Used only for industrial glazing. Diffuses light when clean but has a tendency to collect dirt more rapidly than our newer patterns. Available both plain and wired. (See table of Sizes, Thicknesses, etc.)



FLOREX GLASS • (Pattern Shown Actual Size.) Long a favorite for interior glazing. A brilliant and attractive pattern, available both plain and wired. (See table of Sizes, Thicknesses, etc.)



MAZEX GLASS • (Pattern Shown Actual Size.) Another design for building interiors. Highly obscure, it distributes light remarkably well. Available both plain and wired. (See table of Sizes, Thicknesses, etc.)

DIFFUSION. Occasionally, we are asked to guarantee that a certain glass will **eliminate** glare but such a guarantee can never be made in good faith by any manufacturer. Glare is the result of strong contrasting bright spots on the surface of the glass. It is the function of diffusing glasses to distribute the light which passes through and consequently to lessen the contrasting bright spots but perfect diffusion cannot be obtained from any figured glass. Opal glass, which is opaque, approaches perfection but its factor of transmission is low compared with Figured Glass.

Naturally, some Figured Glasses diffuse light better than others. Blue Ridge Pebblex, Diffusex, Industrex and Muralex are excellent diffusing patterns, while Luminex, Velvex and Hammered are less efficient in this respect. Ribbed Glass and Prism, both of which collect dirt rapidly, throw light mainly in two directions.

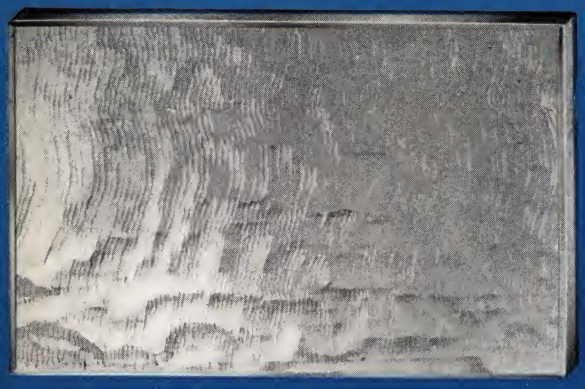
APPROXIMATE LIGHT TRANSMISSION OF VARIOUS PATTERNED GLASSES

A—Illuminometer reading of direct light.

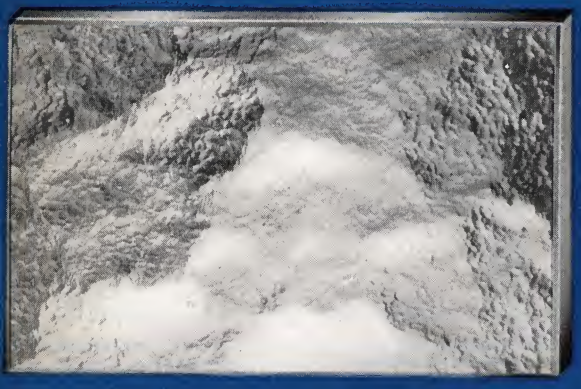
B—Illuminometer reading with glass interposed and in contact with sensitive surface of cell.

100 B/A is taken as the percentage transmission.

GLASS	A	B	100 B/A
Diffusex	12.9	11.3	87.6
Florex	13.0	11.2	86.2
Flutex	12.0	10.9	90.8
Flutex, Satinol One Side	12.0	10.6	88.3
Hammered	13.0	11.7	90.0
Industrex	12.7	11.2	88.2
Louvrex	11.8	10.8	91.5
Louvrex, Satinol One Side	11.9	10.3	86.6
Luminex	12.9	11.4	88.4
Luminex, Satinol One Side	12.9	11.2	86.8
Luminex, Satinol Two Sides	12.9	11.0	85.3
Luminex, Sandblasted One Side	12.8	9.3	72.7
Luminex, Common Acid Etched	12.9	9.1	70.5
Mazex	12.7	11.1	87.4
Muralex	12.9	11.1	86.0
Pebblex	12.8	10.2	79.7
Prism	12.8	7.8	60.9
Prism, Satinol Pattern Side	12.9	7.0	54.3
Prism, Satinol Smooth Side	12.8	7.2	56.3
Prism, Satinol Two Sides	12.9	7.0	54.3
Reedex	12.0	10.4	86.7
Reedex, Satinol One Side	12.0	9.4	78.3
Reglex	12.8	6.7	52.3
Ribbed	12.8	10.8	84.4
Skytex	12.8	10.1	78.9
Velvex	12.7	11.3	89.0
Velvex, Satinol One Side	12.7	10.8	85.0
Velvex, Satinol Two Sides	12.8	10.3	80.5



LUMINEX GLASS • (Pattern Shown Actual Size.) Especially recommended for industrial buildings where the cost of keeping glass clean is an important factor. Provides a medium distribution of light and is a relatively transparent pattern of extremely fine texture that can be glazed and cleaned like clear glass. Available both plain and wired. (See table of Sizes, Thicknesses, etc.)



VELVEX GLASS • (Pattern Shown Actual Size.) A highly practical glass for skylights, factory walls and monitors but also suitable for office partitions, doors and transoms. This unique pattern is extremely shallow, yet it creates the illusion of depth when light rays pass through the glass. An exceptionally clean glass—not totally obscure but sufficiently so for ordinary commercial and industrial building conditions. Available both plain and wired. (See table of Sizes, Thicknesses, etc.)



MURALEX GLASS • (Patterns Shown Actual Size.) A new glass for partitions, doors and transoms. Its modest dignified beauty harmonizes with any style of architecture and its mechanical efficiency insures its popularity. The pattern is finely engraved to reduce dirt collections and to afford easy cleaning. Available both plain and wired. (See table of Sizes, Thicknesses, etc.)

SATINOL

● Satinol is not a new glass. It is a process which may be applied to one or both surfaces of Blue Ridge Figured Glass. Five Satinol-Processed patterns are carried in stock by the factory as follows: Luminex and Velvex (finished thickness $\frac{3}{16}$"), and Louvrex, Flutex and Reedex, (finished thickness approximately $\frac{1}{4}$"). Other Blue Ridge designs in Satinol may possibly be obtained by special arrangements on application.

Satinol Processing gives a mellow satin-like finish which does not finger mark or spot. It materially improves the diffusing property of any glass to which it is applied and its illumination is soft, restful and pleasing to the eye. In general, Satinol on one surface reduces the transmission of light by about 3% and on two surfaces by about 6%.

Sandblasting, which is also applied to Figured Glass sometimes to improve the distribution of light, decreases transmission by 16% one surface and from 20 to 30% both surfaces—depending on the pattern of glass. Rapid collection of dirt and difficulty in cleaning are additional objections to sandblasting. Dust which accumulates on the surface of Satinol-Processed glass can be removed with a dry rag.

The label which appears on every light of genuine Satinol-Processed Blue Ridge Glass states the degree of processing. The standard Satinol Specification is: "Where obscure glass is specified herein or shown on plans, it should be (—) inch in thickness and shall be (—) pattern Satinol (one surface or two surfaces), and each light shall bear the Satinol label of the Blue Ridge Glass Corporation." Always specify the thickness, name of pattern and whether one or two Satinol surfaces are desired.







BLUE RIDGE AKLO

HEAT-ABSORBING, THERMAL-SHOCK RESISTING

Figured and Wire Glass





Interior and exterior views showing the extensive use of Blue Ridge Aklo in the plants of the Curtiss Aeroplane Division, Curtiss-Wright Corporation, Kenmore, N. Y., Albert Kahn, Inc., Architects.

● Blue Ridge Aklo absorbs a considerable portion of the sun's heat energy and at the same time allows an adequate volume of light to pass through. When it is considered that approximately 43.7% of the sun's total heat is in the visible portion of the spectrum, it is apparent that a glass which would arrest ALL of the heat would also arrest practically ALL of the visible light. Because of its special chemical composition, Blue Ridge Aklo provides a practical solution to the problem of transmitting light and decreasing solar heat.

Prior to the development of Blue Ridge Aklo, color, solar heat absorption and transmission of daylight were the distinguishing characteristics of Heat-Absorbing Figured and Wire Glass. That such glasses should possess still another property—RESISTANCE TO THERMAL SHOCK—is apparent to everybody who has experienced failure of Heat-Absorbing Glass because of sudden temperature changes. Blue Ridge now satisfies this all-important need with Aklo Heat-Absorbing, Thermal-Shock Resisting Figured and Wire Glass.

Obviously, the more efficiently a glass absorbs solar heat, the hotter it becomes when exposed to sunlight. It is also obvious that breakage may occur unless the chemical composition of such glasses is carefully devised so that they will stand sudden contrasts of heat and cold, (showers), or differences in temperature such as shadows can cause. Therefore, the chemical composition of Blue Ridge Aklo was devised with three objectives in view:

(a)—To create a glass highly resistant to thermal-shock. That quality was obtained by reducing the coefficient of heat expansion to .0000041 per degree Fahrenheit which is about 20% less than the expansion of ordinary glass.

(b)—To combine satisfactory transmission of light with high absorption of heat.

(c)—To obtain a color both pleasing and restful to the eye, (blue with light tinge of green), and at the same time sufficiently deep to reduce glare substantially. Glare may be reduced still further by Satinol Processing, Sandblasting or Acid-Etching Blue Ridge Aklo Glass.

Thickness	Total Heat Absorbs	Total Heat Transmits	Visible Light Transmitted	Efficiency Factor*
1/8"—Unwired only	62%	38%	71%	1.87
1/4"—Wired or Unwired	79%	21%	54%	2.57

**Efficiency Factor is obtained by dividing percentage of Heat Transmission into percentage of Light Transmission—a simple method of judging the effectiveness of Heat-Absorbing Glass.*

TESTING HEAT-ABSORBING GLASS—According to Section No. 24 of the March, 1938 specifications of the Procurement Division of the Treasury Department, heat absorbing glasses are tested under specific conditions relative to the heat and light sources. The samples submitted to test are polished to ¼" standard thickness or results are calculated on that thickness. The figures shown at the left have been reckoned by that method of testing.

SUGGESTED USES—Any exterior window, door, transom or skylight, where unobstructed vision is not required, will admit substantially less heat into the building if glazed with Blue Ridge Aklo Glass. Thus, go solar comfort is provided to the occupants of manufacturing plants, hotels, hospitals, stores, public and office buildings, schools and homes.

STANDARD SPECIFICATIONS—Where Heat-Absorbing Figured or Wire Glass is specified herein, or shown on plans, it shall be (—) in. in thickness, (wired or unwired)**, and shall be manufactured by the Blue Ridge Glass Corporation.

***Blue Ridge Aklo is available in ¼" and ⅛" thicknesses unwired, and ¼" thickness wired. (See table of Sizes, Thicknesses, etc. Page 27.)*

Symphony

OF LIGHT AND LINE

WITH LOUVREX AND FLUTEX GLASS

● Louvrex and Flutex were created to meet the demand for a modern decorative glass. Both have been received with enthusiasm. They give the architect and designer wider opportunities to obtain unusual and pleasing effects.

The Louvrex pattern is formed by a series of plane surfaced strips, 1″ wide, alternately ascending and descending. In appearance, these resemble louvre strips in Venetian blinds. Since the eye tends to measure from valley to valley across the ridge—a distance of 2″—Louvrex gives the effect of a pattern 2″ wide.

The pattern of Flutex Glass is more pronounced than that of Louvrex. It consists of a series of adjoining convex flutes 1″ wide, each being in effect, an elongated magnifying glass.

The flat surface of both Louvrex and Flutex is available in three different finishes: Fire Polished, Mechanically Ground and Polished, and Satinol Processed.

Polished Louvrex or Polished Flutex used in decorative display panels, or in partitions between store departments, creates a kaleidoscopic impression of merchandise in motion—always changing, always exciting.

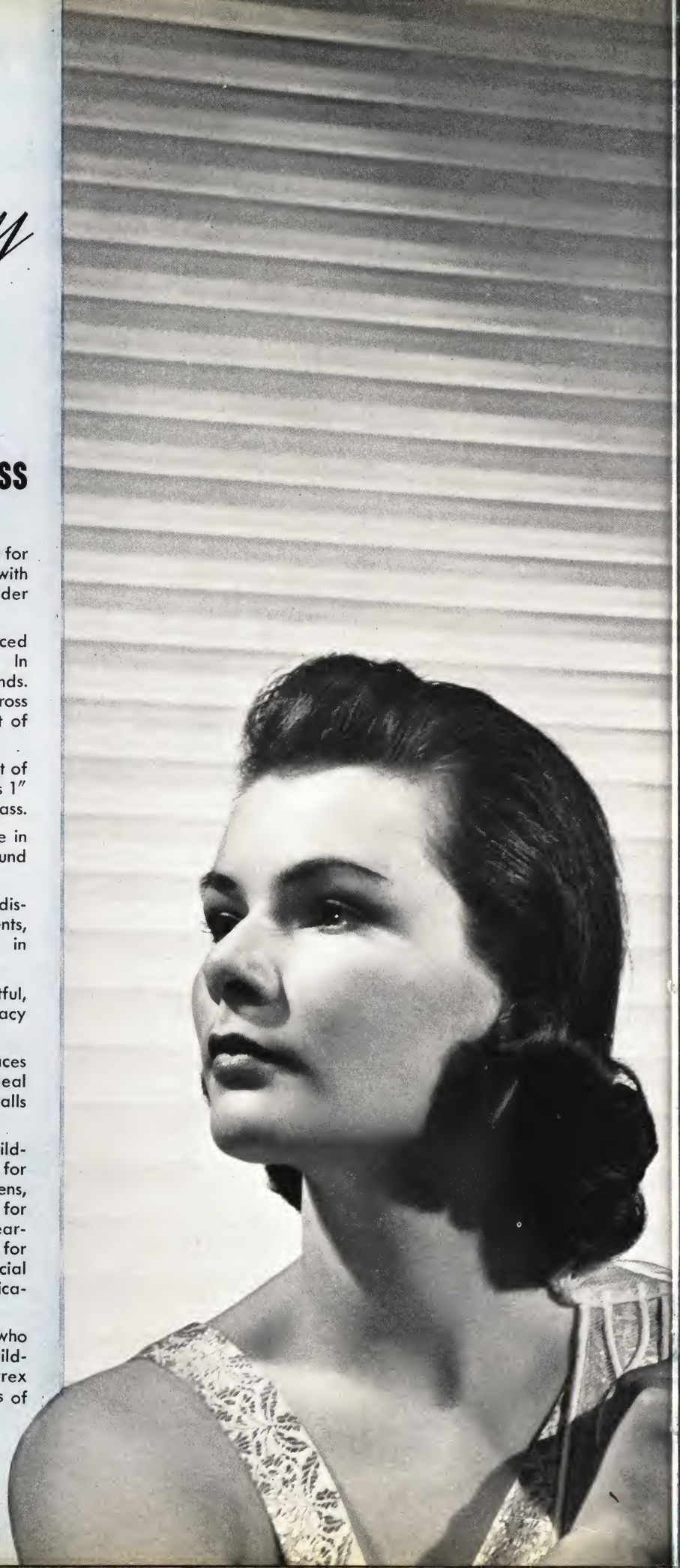
Whereas, these patterns with Satinol Finish provide restful, dignified backgrounds or windows where greater privacy and soft, diffused light are desirable.

Maximum dimensions of 54″ x 136″* permit large surfaces unmarred by joints and make both Louvrex and Flutex ideal for double-glazed walls. Used in this manner, such walls become insulated areas.

MANY NOVEL USES . . . Smart shops, stores, public buildings and homes provide many new and unusual uses for Louvrex and Flutex; in show windows and decorative screens, ventilators, partitions, transoms, mirror frames, trim for columns and pilasters. They lend a striking, modern appearance to hospitals, schools and other institutions when used for window glazing and partitions. With the addition of artificial illumination, they make possible new and colorful applications in coffee shops, cocktail bars, hotels and theaters.

Many other possibilities will be apparent to the architect who wishes to emphasize the horizontal or vertical lines of buildings or fixtures. The sweeping, linear effect of bent Louvrex and Flutex is especially useful where gleaming surfaces of curved glass are employed.

**Pattern runs parallel with 136″ edge.*

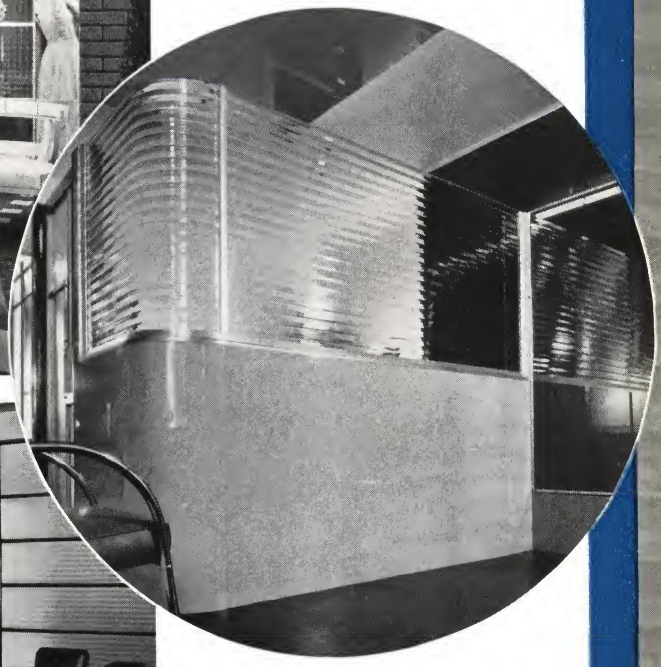




Left — Double - glazed, translucent wall of Louvrex with pattern lines running at right angles to each other to produce a kaleidoscopic effect.

●

Below—Screen of Polished Louvrex with bent corner, pictures how this decorative medium lends itself to modern streamlining.



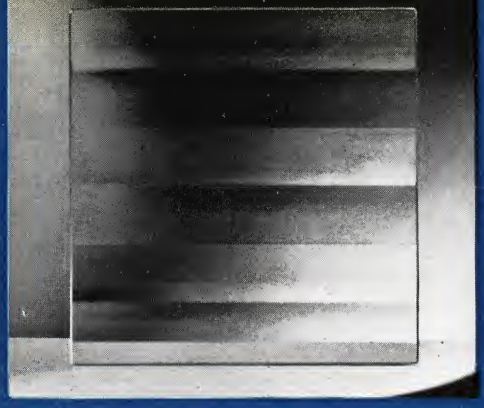


Left—Satinol Louvrex preserves privacy and admits diffused or borrowed light through these partitions.

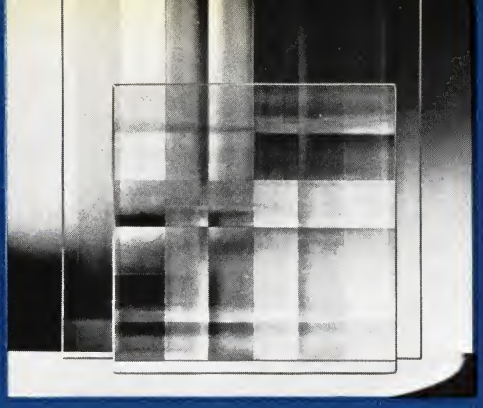
●

Below—Decorative screen of double-glazed Louvrex adds an exciting effect enhanced by artificial illumination and color.

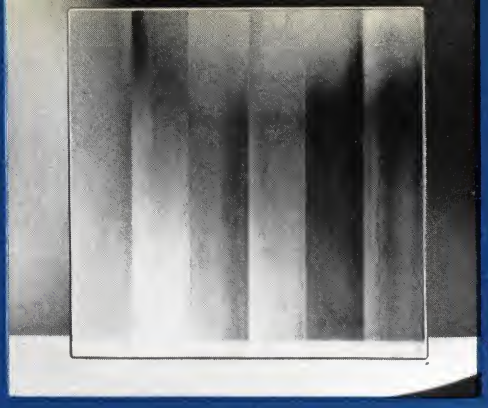




Single section of Polished Louvrex glazed horizontally.



Double glazed section of Polished Louvrex with lines running horizontally on one light and vertically on the other, producing a checkerboard effect.



Single section of Polished Louvrex with pattern lines running vertically.

MANY DARING AND DISTINCTIVE EFFECTS

● Single-glazed Louvrex or Flutex allows sweeping expanses of horizontal or vertical lines which conform to modern contemporary design. Used in windows, they present a pleasing appearance from the inside and lend simple dignity to the architectural detail when viewed from the outside.

Satinol Finished Louvrex or Flutex increases obscurity and affords soft, restful illumination.

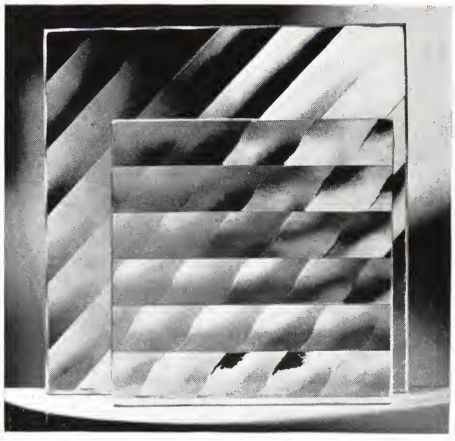
These highly translucent glasses add a number of pleasing patterns when double glazed. With the lines running at right angles to each other, or by varying the angle, many interesting results are obtained.

The applications are still further extended by a number of luminous effects with artificial light. Illumination with plain or colored lights behind Louvrex or Flutex glass provides soft, diffused or sparkling light, depending on the nature of the installation. Brightly lighted backgrounds in colorful patterns when seen through Polished Louvrex or Flutex afford dramatic designs for store fronts, theaters, cafes and public buildings. Unusual modern screens and partitions can be further enhanced when combined with effective lighting, either stationary or in motion. An almost endless variety of new color effects may be achieved.

CROSS SECTION OF LOUVREX PATTERN



½ Actual Size

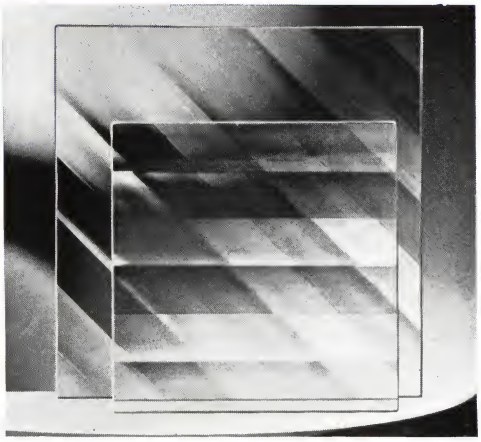


Double glazing one light of Polished Flutex with lines running horizontally imposed over one with lines turned at an angle.

CROSS SECTION OF FLUTEX PATTERN

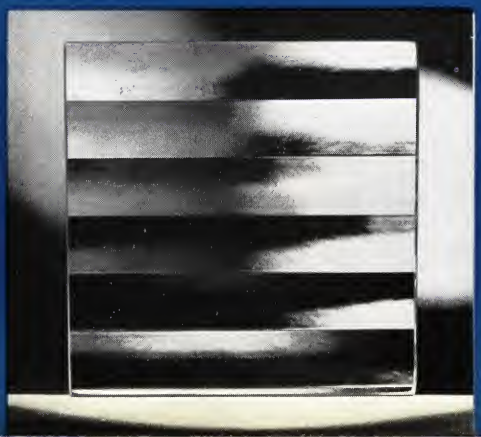


½ Actual Size

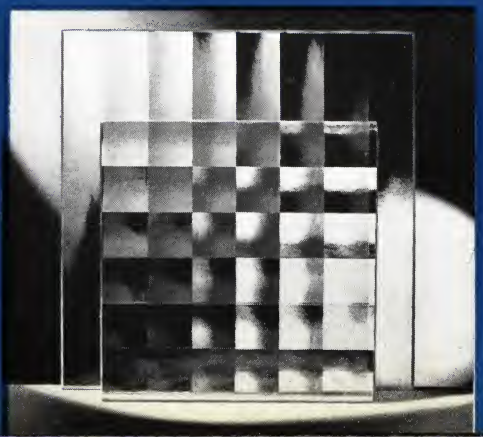


Double glazing one light of Polished Louvrex with lines running horizontally imposed over one with lines turned at an angle.

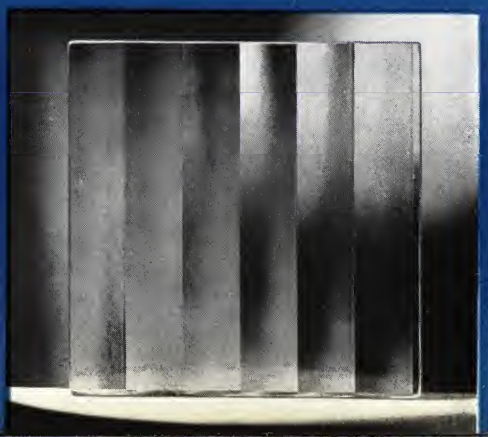
Single section of Polished Flutex glazed horizontally.



Double glazed section of Polished Flutex with the lines running horizontally on one light and vertically on the other, producing a checkerboard effect.



Single section of Polished Flutex with pattern lines running vertically.



REEDEX

another striking pattern

IN DECORATIVE GLASS OF DIRECTIONAL DESIGN



Entrance to Hotel Sutter, San Francisco, Calif., gives an excellent idea of some of the uses for Reedex. The face of the marquee is sandblasted Reedex with the exception of the sign which is Vitrolux. The columnal lighting enclosures are also sandblasted Reedex. Combined with chrome trim, it is equally effective by day, or when illuminated at night.

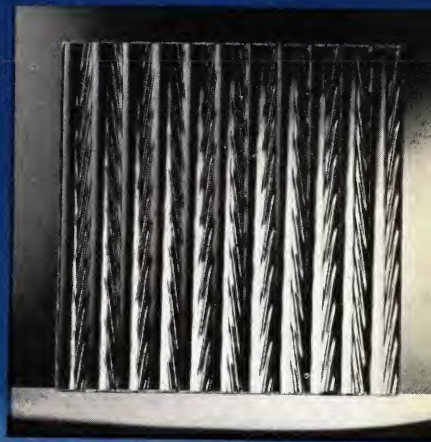
● Reedex has a unique and charming pattern. It is made up of a series of ½" corrugations, on the ridge of which is an interesting herringbone design. Viewed as a whole, Reedex, as the name implies, produces a reed-like effect.

Reedex is high in light transmission and but slightly more obscure than either Louvrex or Flutex. And like these patterns, it is stocked in three different types of surface finish on the flat side: Fire Polished, Mechanically Ground and Polished and Satinol Processed.

Reedex may be glazed with the pattern running horizontally or vertically, in any size up to 54" x 136".* It is, therefore, a flexible medium with which modern streamlined effects may be achieved without resorting to numerous joints.

The more obvious uses for Reedex are found in windows, doors, vestibule panels, transoms and partitions. However, because of its novel pattern, Reedex is particularly suitable for effective display lighting of both interiors and exteriors. In theaters, cocktail lounges and dining places where gayety and brilliance is the keynote, Reedex can be used effectively in the decorative scheme.

*Pattern runs parallel with 136" edge.



Section of Reedex glass with pattern lines running vertically.



Reedex Satinol Finish used in side door panels glazed vertically in the home of Joseph Henry Jackson, Berkeley, Calif. Michael Goodman, architect.

CROSS SECTION OF REEDEX PATTERN



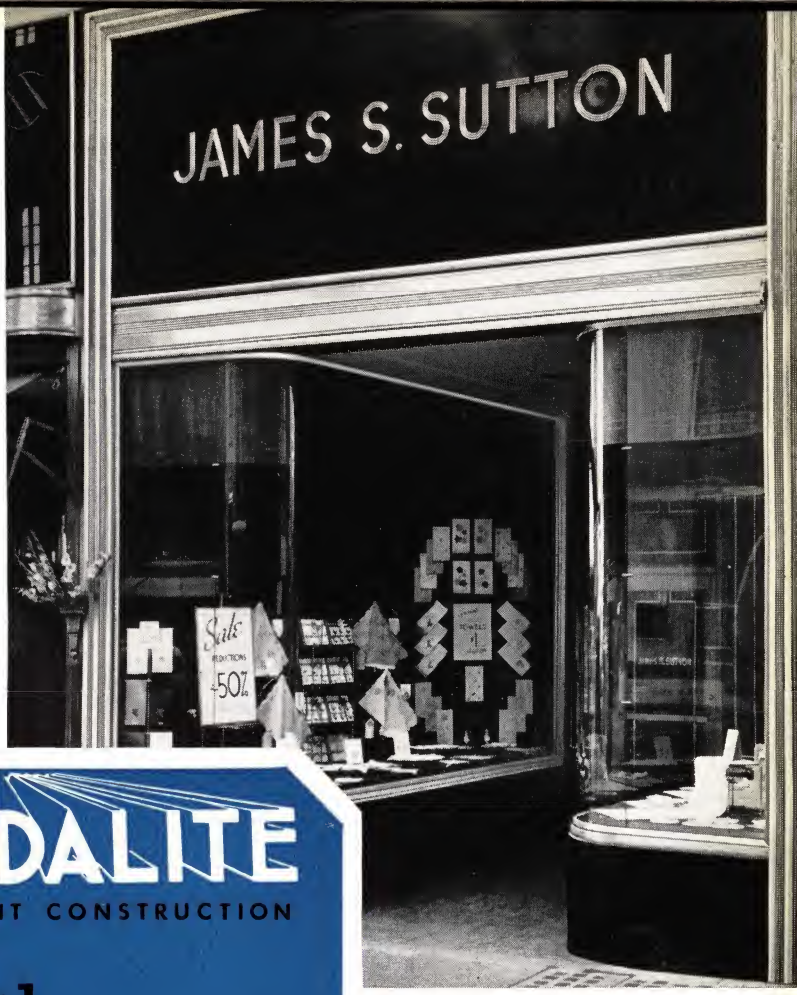
PATTERNS, THICKNESSES, SIZES AND WEIGHTS

THICKNESS IN.	PATTERNS	MAX. WIDTH IN.	MAX. LENGTH IN.	APPROXIMATE WEIGHT PER SQ. FT., LBS. (Glass Only)
ROLLED FIGURED GLASS				
1/8	Hammered, Ribbed, Luminex, Skytex, Velvex, Industrex, Diffusex, Florex, Mazex, Pebblex, Sterlex, Reglex	48	132	2
3/16	Hammered, Ribbed, Luminex, Skytex, Velvex, Industrex, Diffusex, Florex, Mazex, Pebblex, Sterlex, Reglex	48	136	2 3/4
1/4	Hammered, Ribbed, Luminex, Skytex, Velvex, Industrex, Diffusex, Florex, Mazex, Pebblex, Sterlex, Reglex	48	136	3 1/2
Approx. 1/4	Louvrex, Flutex, Reedex	54	136	3 1/2
Approx. 1/4	Muralex, Transex, Prism	48	136	3 1/2
3/8	Hammered, Ribbed	48	90	5
1/2	Hammered, Ribbed	48	90	6 3/4
SATINOL PROCESSED GLASS				
Approx. 1/4	Louvrex, Flutex, Reedex	54	136	2 1/2
3/16	Luminex, Velvex	48	136	2 1/2
AKLO HEAT ABSORBING GLASS, THERMAL SHOCK RESISTING				
1/8	Hammered Pattern—Unwired	48	132	2
1/4	Hammered Pattern—Unwired	48	136	3 1/2
1/4	Hammered Pattern—Wired	48	144	3 3/4
WIRE GLASS				
1/4	Hammered, Ribbed, Luminex, Skytex, Velvex, Industrex, Diffusex, Florex, Mazex, Pebblex, Sterlex, Muralex	48	144	3 3/4
3/8	Hammered, Ribbed	48	90	5
1/2	Hammered, Ribbed	48	90	8
1/4	Polished	60	144	4
POLISHED FIGURED GLASS				
Approx. 1/4	Louvrex, Flutex, Reedex, Diffusex, Pebblex, Reglex, Muralex	48	136	3 3/4

NOTE: Where 48 in. is shown as maximum width, some patterns and thicknesses may be available up to 60 in. wide, depending on stock on hand. Also, thicknesses greater than indicated above may be made to order by special arrangement. Likewise, patterns other than Louvrex, Flutex, Reedex, Luminex and Velvex may possibly be obtained with Satinol finish, but 3/16 in. is the minimum thickness at all times.



Heard Building, Phoenix, Arizona,
Architects, Lescher & Mahoney, Phoenix, Arizona



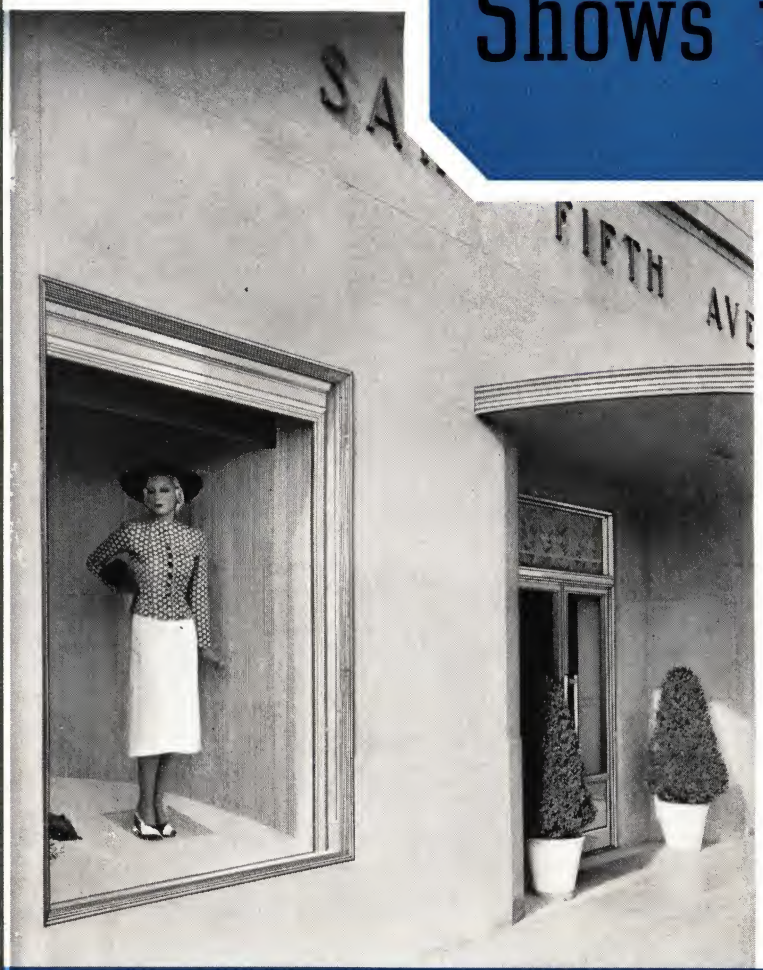
James S. Sutton, New York City
Engineers and Contractors, R. L. Senior, Inc.

EXTRUDALITE

METAL STOREFRONT CONSTRUCTION

Shows the way

Saks Fifth Avenue, 9600 Wilshire Blvd., Beverly Hills Calif., Architect, Donald B. Parkinson



L O F

Two years ago Extrudalite was introduced—a *new* improved product. Today, having come through the Test of Actual Use—having *proved* that it is right, both structurally and architecturally, Extrudalite is definitely *setting a new style* in modern storefronts. Hundreds of Extrudalite installations over the country—a number that is increasing every day—substantiate this important fact.

Detroit-Edison Company, Detroit, Michigan, Architect, John C. Thornton, in charge



Features OF EXTRUDALITE

A PROVED PRODUCT

● It is a far cry from the old fashioned store fronts of yesteryear to our modern store fronts of eye-compelling beauty trimmed with colorful structural glass, illuminated panels, and self-supporting extruded metal glass-retaining mouldings.

Extrudalite, likewise, is a radical step forward both in design and practical construction features, as compared with glass mountings hitherto obtainable.

The Extrudalite line, as the name suggests, consists of solid extruded members only. It is sufficiently diversified in size, design and consequent price range, to fit every class of construction. Even the most modest store front may now include the distinction of extruded metal.

DESIGN FEATURES

Extrudalite is revolutionary in eye appeal. Its profiles are truly metallic in interpretation, at the same time eliminating entirely all plain, flat surfaces prone to give the optical illusion of waviness.

By giving each distinct area a slight radius and by using "reeds" and "cascades," these flat surfaces have been made artistic and beautiful. By "streamlining" old classical design standards, a new type of store front design has been developed. Only in extruded metal is it possible to so accurately and faithfully reproduce intricate details of design.

Unlike flat metal surfaces, which must be kept spotlessly clean to be attractive, the distinctive beauty of Extrudalite is easily maintained. A casual wiping of the surface, easily a part of window-washing routine, will bring out the high points of the reeds and cascades in contrast with the lower portions of the profiles. This accentuates the contrast between light and shade which is the main object of moulding profile design. This unique decorative effect thus produced is a new design element in store front construction.

CONSTRUCTION FEATURES
SASH

The sash is the key member of metal store front construction. To fulfill its functions perfectly it must be self-supporting—retain its own perfect alignment for the glass to rest against—provide strong but limited pressure for holding the glass and should contain a cushioning means to absorb shocks, vibration, expansion and contraction.

Contrary to general belief, the sash should be as nearly air-tight as possible, in our opinion. It should also dust-proof the display windows rather than provide holes for doubtful ventilation and drainage. Moisture from condensation or window washing can be taken care of with a chamois or sponge. However, standard drain holes will be furnished if insisted upon.

Extrudalite Sash No. 500 fulfills all the above requirements and provides a comparatively deep reveal for the glass.

The interlocking teeth of the base member, and the clip member which is attached to the face piece, allow identical action and pressure to be applied at all points regardless of the thickness of the glass.

After the face piece is in loose setting position, held there by the tongue-and-groove fitting at the front, the Installator runs down the set-screw from behind until it locks into permanent setting position if the construction is properly installed.

The amount of cushioned pressure thus applied to the glass is pre-determined. It is impossible to apply too much tension or pressure.

This action and pressure can be described as follows:

The direct pressure of the screw spreads through the rigid clip-lever and is transferred into the cushioning spring. The spring transfers the cushioned pressure to the rigid face-piece which, in turn, applies it evenly all along the face of the glass.

The spring is like a transformer because it transforms the direct rigid pressure into cushioned pressure. The face-piece may be likened to a distributor because it distributes the cushioned pressure evenly along the face of the glass.

Reversely, the spring also acts as a shock-absorber because it absorbs all shocks, vibrations and expansions into itself. The same spring also acts as a stabilizer by throwing the pressure back against the glass under contraction.

These performances are impossible under direct or indirect rigid pressure.

This principle of pressure transformation, distribution and control is revolutionary in store front construction. It will tend to eliminate glass breakage from any and all sash failure causes.

Extrudalite Sash No. 300 contains the above described features but is smaller and provides a narrower reveal. Being smaller it is also lower in cost—and outstanding in its size and price range.

EXTRUDALITE FEATURES

Extrudalite Sash No. 150 is installed and operated on a principle of fulcrumed action which tends to evenly distribute screw pressure. No screws are exposed on the face. Because both face and gutter are of extruded metal, perfect alignment is assured. The rigidity of these sections tends to provide solid reinforcement and an even distribution of pressure. Where low cost is paramount, this sash exceeds minimum acceptable specifications and assures a quality job at no premium.

SASH CAPS

Vertical sash caps are available for all sash members. Horizontal corner bosses can be obtained also. We do not furnish caps for sills and jambs and we strongly recommend that all mouldings be mitered to obtain the best appearance

VERTICAL CORNER, REVERSE AND DIVISION BARS

A perfect bar of the above type should be strong enough to withstand abnormal wind pressure without allowing glass breakage. It should not, however, be so bulky that it will obstruct vision.

These bars should be well designed with no operating parts exposed. They should take a definite grip with cushioned pressure on the edges of the glass and fit all angles within its classified range.

Extrudalite is unique in that it fulfills all of these requirements.

The necessity for tape or plastic materials of any kind when installing the bars is eliminated.

A light standard-type division bar is provided for use in transom work. There is also available one size of reinforcement which can be used for division of plate glass, in show windows where cost is a major factor.

In addition there is a structural vertical division bar which is especially adaptable for use in large illuminated areas. This member, when anchored at top and bottom provides ample support for the glass facing. Horizontal division bars may be tied directly to the backs of these vertical members for their support.

A variety of face-pieces will be furnished allowing either the horizontal or vertical members to run straight through or allowing for mitering of these members. In this connection, we have developed a horizontal auxiliary bar which allows replacement of the upper or lower light of glass separately. It is small in size, has the same contour on both faces and is absolutely water-proof.

This member ties in perfectly with the above mentioned structural vertical bars and will also find wide use for the separating of painted glass valance signs from the clear plate glass below.

NOTE THE BEAUTY OF EXTRUDALITE TRANSOM BARS

Standard practice for the covering of transom bars has been to provide a top and bottom interlocking member of metal which forms a 4″ bar. Wider bars have been obtained by the use of 2″ filler strips, as many as necessary being used in order to obtain the required height.

This method has been improved by providing a one-piece 4″ bar, a two-piece interlocking 6″ bar, a 2″ filler strip with which to form an 8″ and 10″ bar and a 6″ filler to form a 12″ bar.

All of which means a simple and less costly installation of transom bars and the opportunity to incorporate real character of design.

A very important feature of Extrudalite is this—If a complete and correct store front installation is made using Extrudalite sections as called for on our standard detail sheets, there will be no possibility of this front leaking at any point. This is assured by proper designing of the sections.

Aside from the aforementioned items Extrudalite includes all the latest features contained in sills, jambs, Vitrolite trim moulding, copings, soffit sections, hinged ventilators, showcase doors, pilaster coverings, and also offers a complete line of extruded tubular doors, transoms and frames. In fact, anything and everything in metal that comes in connection with a store front, in radically improved construction and design is offered by Extrudalite.

Due to the flexibility of Extrudalite and to its method of manufacture, we are in a position to offer the architect a highly specialized service. Anything that he cares to develop in the way of a designed section can be incorporated into the regular line at a minimum cost and will be held exclusively for his use. We will also assist in working out any special store front problem the architect cares to submit.

EXTRUDALITE IS EASY TO INSTALL

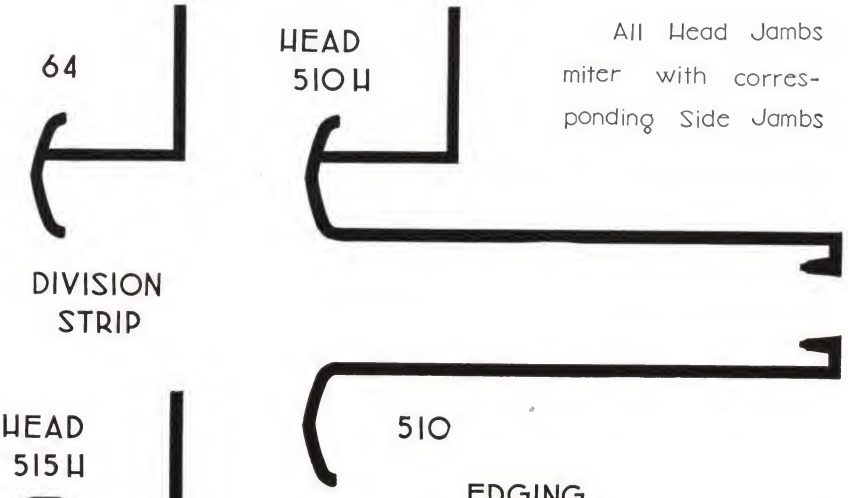
Installation is one of the most important steps from the time a job is planned until it is completed. It is even more important to the owner than the planning or materials.

Extrudalite is fundamentally new and different. Yet it does not radically depart from proven standards of setting. The few departures it makes actually improve and simplify the job. Extrudalite eliminates minute and intricate workmanship so as to make the installation fool-proof.

The detail is designed to work to two different planes of alignment. First, the woodwork to which the metal is attached. This is made easy for the carpenter by lining on one plane for all members. Second, EXTRUDALITE lines itself to the face of the Vitrolite.

EXTRUDALITE is featured in aluminum alloy No. 53-S with gloss alumilite finish, a protective finish is furnished on all welded construction instead of alumilite which discolors at weld joints. It is also available in extruded bronze, polished or satin finishes. Special finishes on all metals can be supplied.

● Extrudalite detail sheets have been developed in the simplest form possible as an aid in planning and laying out the practical constructive interpretation of store front designs. The following sheets give in simple basic form full sized cross sections of all members in the line in order to give the "feel" of each individual moulding when choosing desired sections. These full sized sections may also prove useful in solving and detailing special conditions with various combinations of standard items. For standard vertical and horizontal sections through typical store fronts, will be found sheets giving details in ¼ full size scale. They are offered as a guide to correct and practical combinations of the individual members and are drawn to the small scale in order to make the job of detailing lighter. The importance of complete store front

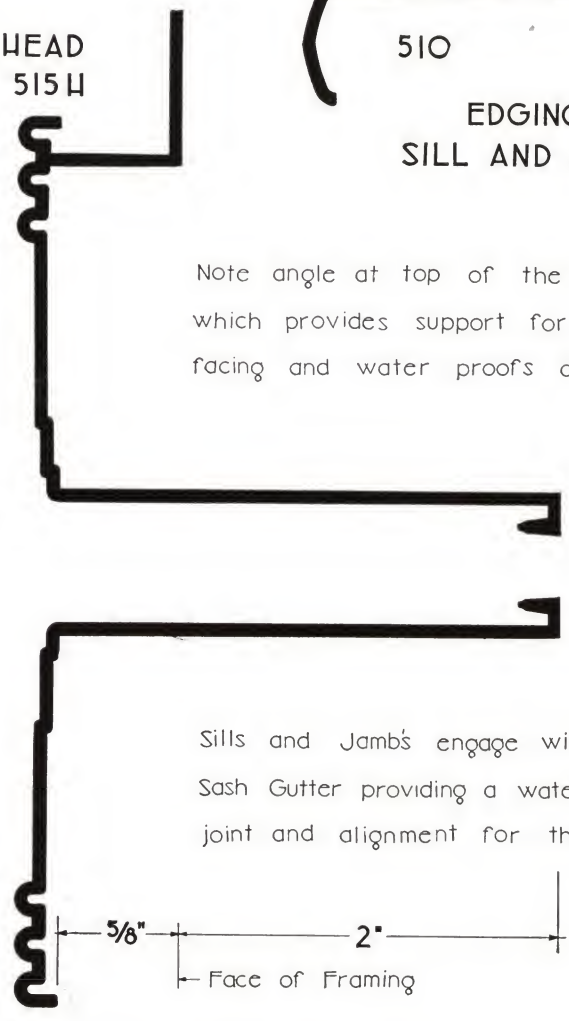


All Head Jambs miter with corresponding Side Jambs

See Sheet Number 11 for quarter size Vertical and Horizontal Sections using these elements

All sections drawn are actual size

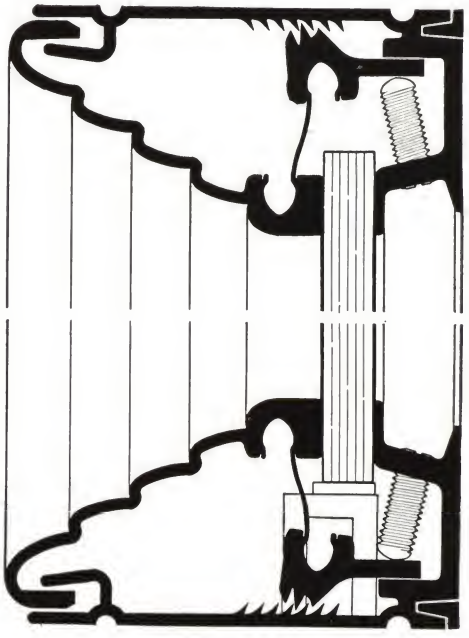
EDGING
SILL AND JAMB



Note angle at top of the Head Jambs which provides support for the Vitrolite facing and water proofs at this point

Sills and Jamb's engage with the Sash Gutter providing a water tight joint and alignment for the Sash

SILL AND JAMB 515



SASH 500

EXTRUDALITE

details on every job cannot be emphasized too strongly. Backed up with clear cut and adequate specifications, they insure the job being completed exactly as designed and planned.

We will be glad to assist in working out special condition details.

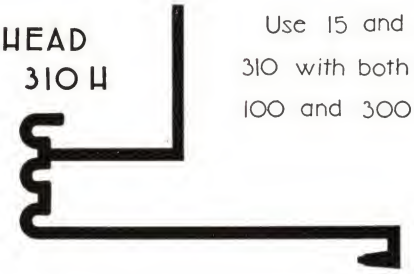
All Extrudalite sections are designed to assemble and install in a water-tight and dust-proof manner. Assembly sheets 11, 12 and 13 illustrate this fact clearly.

Sash ventilation holes do not prevent nor remove frost or condensation from the inside of the windows, they do, however, admit damaging dust. Drainage holes at the bottom sash rail serve their intended purpose for only a short time until the inside of the sash packs with dirt and debris, they

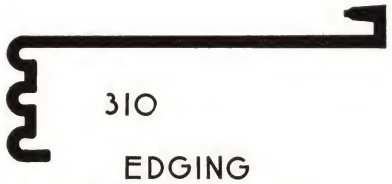


Use 65 with 15 310 and 515

VITROLITE DIVISION STRIP



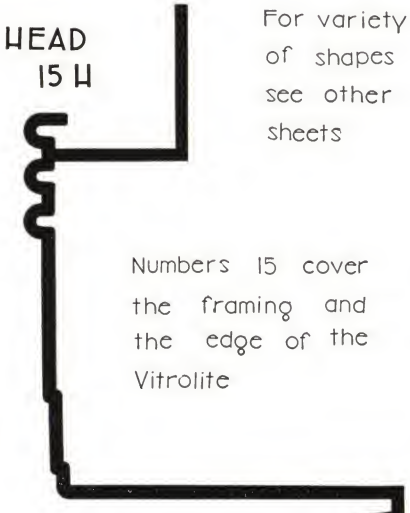
Use 15 and 310 with both 100 and 300



EDGING SILL AND JAMB

See Sheet Number 12 for quarter size Vertical and Horizontal Sections using these elements

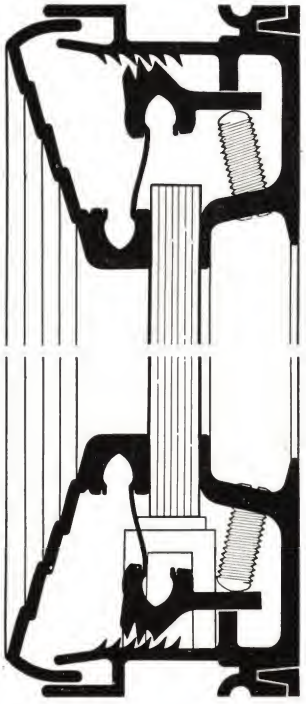
All sections are actual size



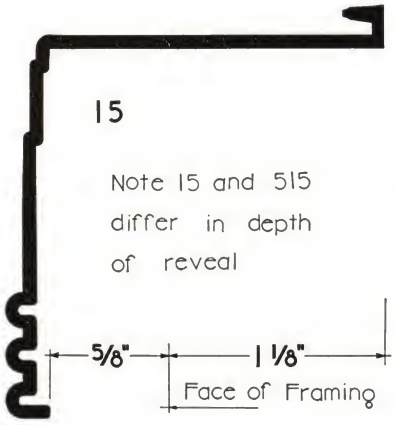
For variety of shapes see other sheets

Numbers 15 cover the framing and the edge of the Vitrolite





SASH 300



SILL AND JAMB



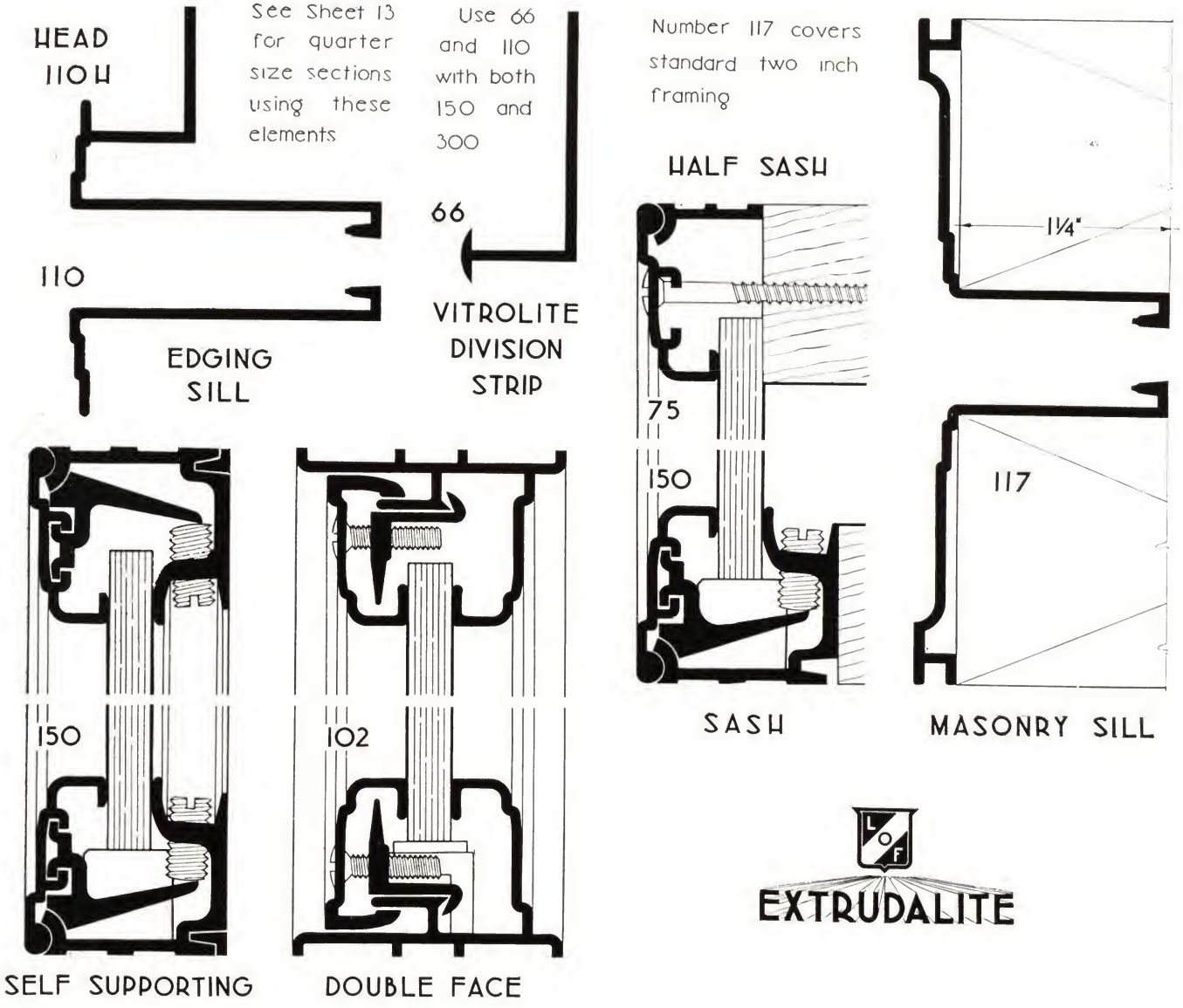
SELF SUPPORTING SILL AND JAMB

Use 318 with masonry construction

EXTRUDALITE

then become holes for blowing dust into the window. Elimination of this very questionable feature helps to maintain bright clean displays, and improves the appearance of sash face pieces. Extrudalite provides a generous sized interior gutter to catch and hold water from window washing and it is a simple matter to soak up these drippings with sponge or chamois after each cleaning. Make your windows water-tight and dust-proof with the proper Extrudalite sections.

Extrudalite basic quality at minimum cost is featured throughout the Number 150 series. No job has to be designed and planned so modestly that it must be denied the handsome sturdiness and clean cut lines of Extrudalite. Note the versatility of uses possible with Double Face Sash Number 102. It is the practical support and trim for various types of glass partitions. It is well suited for residential picture windows. Note that Half Sash Number 75 is of two piece construction. This allows for adjustment to various glass thicknesses without the usual gapping at the bottom of the face which is unsightly and not water-tight. This is a decided improvement in half sash construction. However, we recommend that you use half sash construction only when it is absolutely necessary from a cost standpoint, the small savings effected by using this item make such occasions rare. When used, be sure to specify that the wood stop which receives the back of the glass is to be of fine quality and planed to perfect alignment. Under no conditions should half sash be used at the bottom of glass.



EXTRUDALITE

Extrudalite vertical bars are built to uphold their part of this line from a standpoint of both construction and design. They are not just metal strips to cover glass joints. Bars Nos. 20, 21 and 22 are built to automatically fit a wide range of angles and contain spring cushioned pressure. No bulky extra reinforcement members are necessary to strengthen these bars, and no operating parts are exposed on the inside to detract from their design. Each bar is a complete mechanical unit—designed as such—and requires no tape or plastics to securely but safely hold the glass.

Structural Division Bar Number 240 was designed especially to support large areas of Vitrolux. It can be furnished with a variety of face pieces and can be fastened either from the face or the rear. See special Vitrolux details for application of this member.

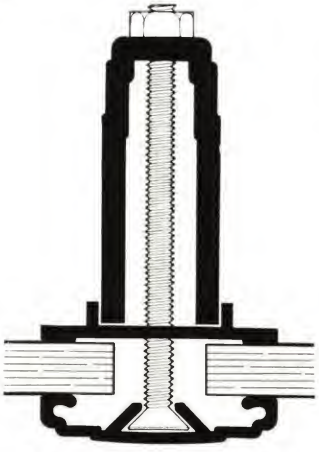
Division Bar Number 121 is for use exclusively in transom glass where strength is of minor importance, when transformed by reinforcing member R into Division 121-R it provides a rigid construction for use with large lights of glass where very low cost is an important factor. This bar is particularly designed to take its place in the Number 150 series.

All bars should be securely anchored at top and bottom with Extrudalite anchors.

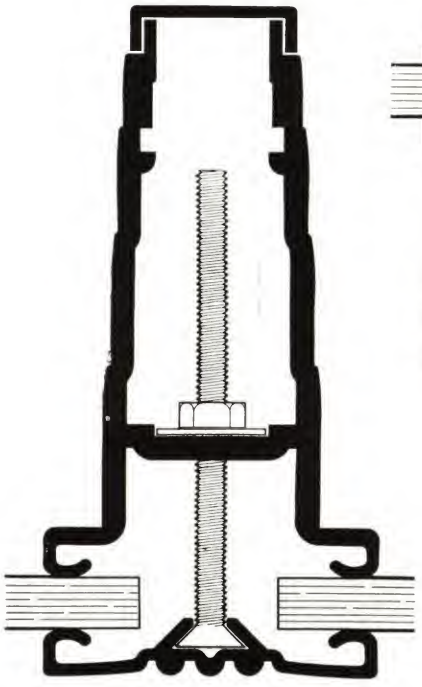
Sections actual size



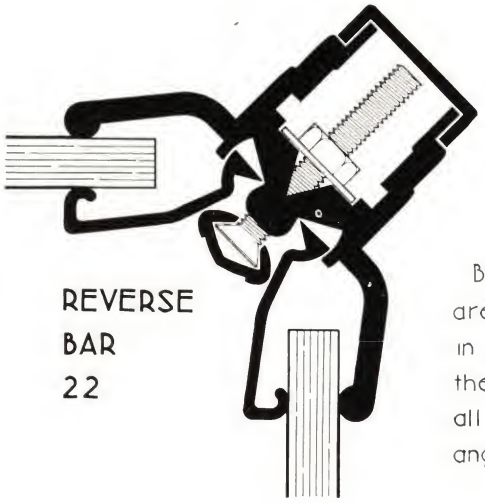
240
STRUCTURAL DIVISION BAR



LIGHT DIVISION BAR 121
REINFORCEMENT R R

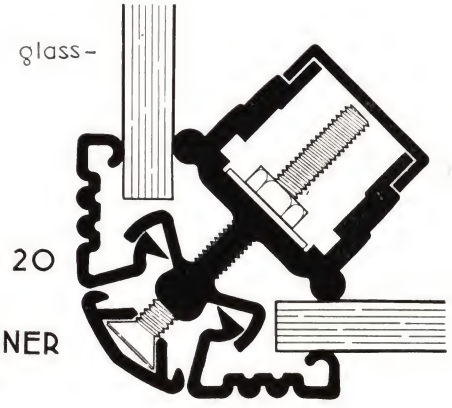


21
DIVISION BAR



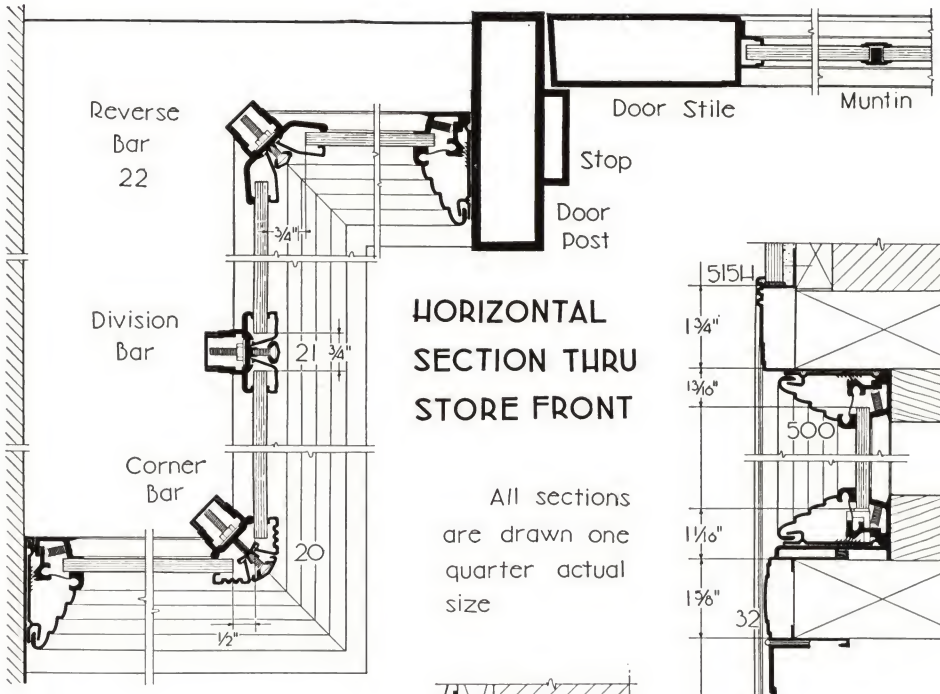
REVERSE BAR 22

Bars 20 22 are universal in adapting themselves to all necessary angles



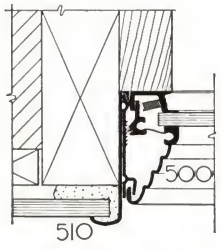
20
CORNER BAR

EXTRUDALITE

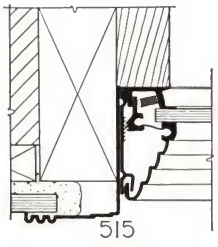


HORIZONTAL SECTION THRU STORE FRONT

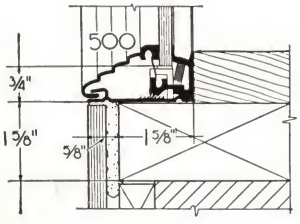
All sections are drawn one quarter actual size

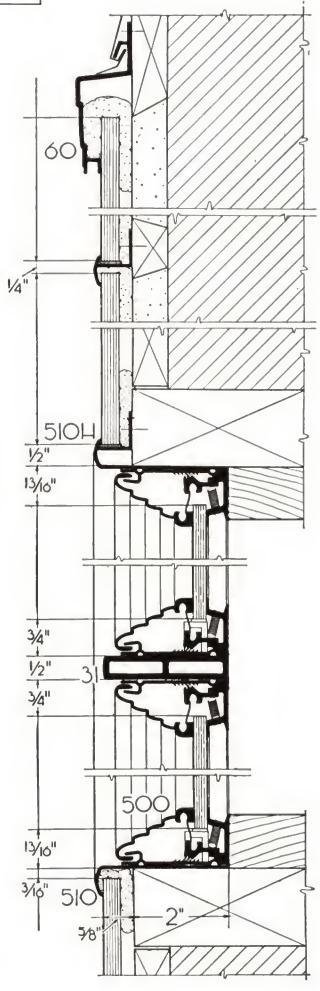


SIDE JAMB

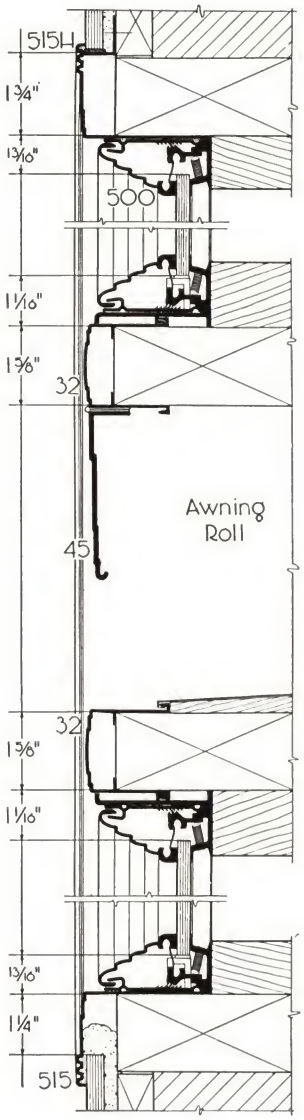


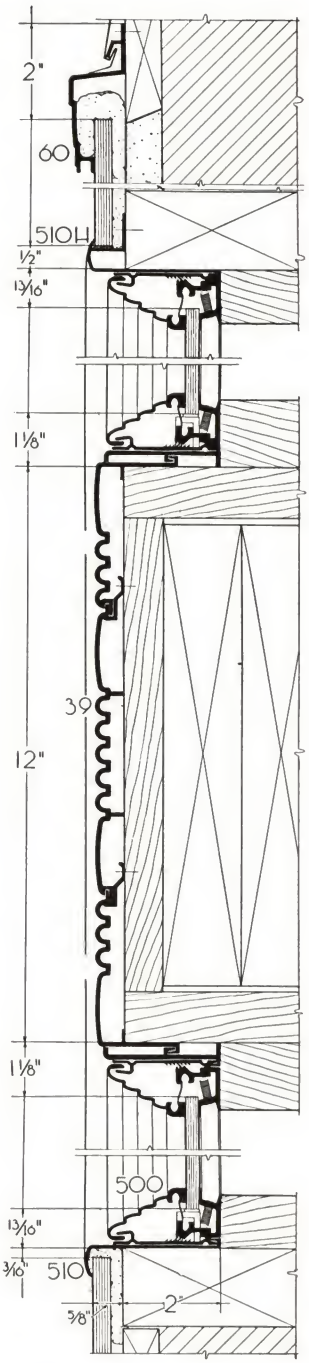
SIDE JAMB





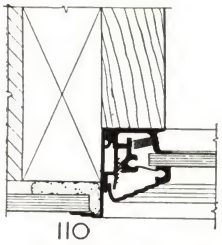
VERTICAL SECTIONS



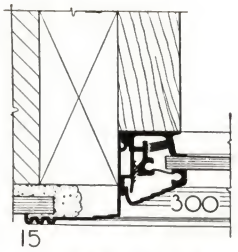


VERTICAL SECTIONS

EXTRUDALITE



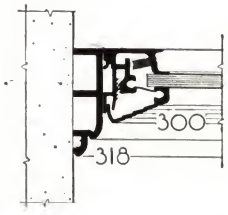
SIDE JAMB



SIDE JAMB

All framing is on one plane

Cast End Brackets furnished

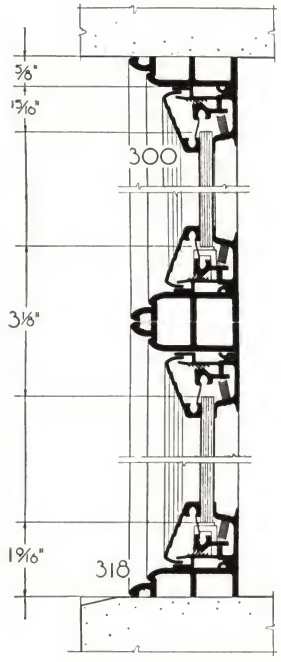


SIDE JAMB

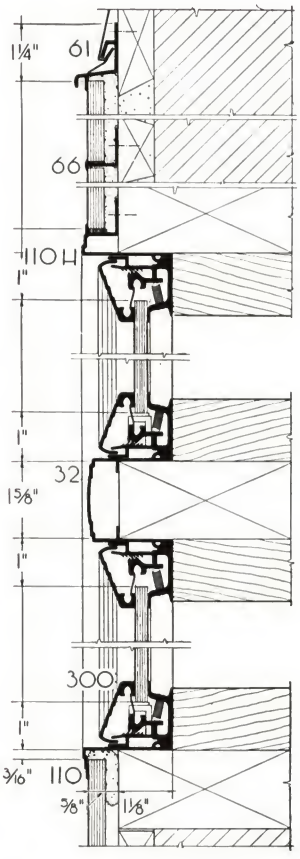


One piece Awning Hood

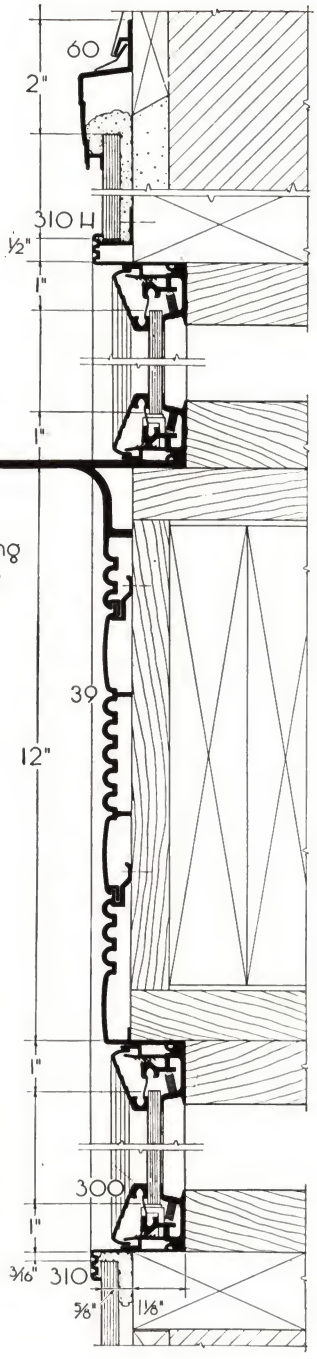
Note weather proof construction thruout

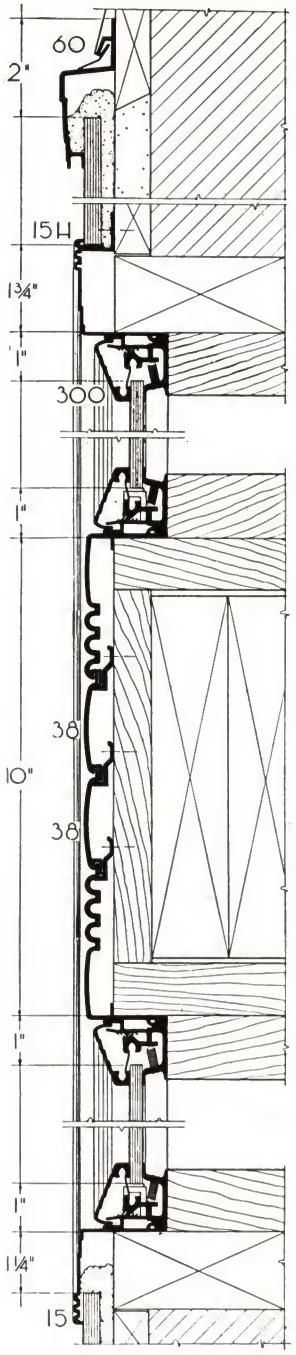


SELF SUPPORTING SILL AND JAMB



VERTICAL SECTIONS





VERTICAL SECTIONS

EXTRUDALITE

VITROLITE
Colorful Structural Glass

VITROLITE IN ARCHITECTURE

● Vitrolite has a long record of usefulness in buildings of all kinds and serves a great variety of purposes. Used at first as a material for sanitary purposes, the variety of colors in which it is made and the beauty of its surface have led architects to recognize in Vitrolite a means of securing architectural character and striking decorative effects. Vitrolite is peculiarly expressive of the modern movement in architecture and decoration and has been used for both interior and exterior purposes by leading architects, in an imposing list of buildings. Vitrolite requires definitely different structural methods and detailing than marble or tile. To make it easier to work out projects in Vitrolite the details and specifications on the following pages are presented to the architectural profession with the assurance that in Vitrolite they will find a material that not only meets the most exacting requirements of service, but will prove a source of increasing interest and fascination to the designer who is striving to interpret the needs of this modern age in terms of directness, simplicity and color.

WHAT VITROLITE IS—Vitrolite is an opaque structural glass, fused at high temperature. Its structure is dense and tough, with a tensile strength and resistance to wear greater than that of marble. The face of Vitrolite has a high luster and the back has a ribbed surface that may be effectively attached with mastic to any smooth, dry and permanently secure background.

QUALITIES—Vitrolite will not warp, swell, or craze. Liquids in common use cannot penetrate it, and it will not absorb liquids or gases that give off unpleasant odors. It is highly resistant to staining and to burns from cigars or cigarettes. It is difficult to write or mark upon, and is easily cleaned by wiping with a damp cloth—or in extreme cases by the application of soap and water.

STRENGTH—Vitrolite has a minimum tensile strength of 937 lb. per sq. in. and crushing strength of 31,658 lb. per sq. in., which is about 40% greater than marble. It has a very high resistance to abrasion.

WEIGHT—Actual net weight, lbs. per sq. ft.: 11/32 in., 4.4 lbs.; 7/16 in., 5.6 lbs.; 3/4 in., 10.2 lbs.; 1 in., 14 lbs.; 1 1/4 in., 17.5 lbs.

SURFACES—Vitrolite is produced in two types of surfaces —fire polished and mechanically ground and polished.

THE FIRE POLISHED SURFACE is a natural result of the process of melting, rolling and annealing Vitrolite. The polish is high, hard, smooth, and dense, and therefore sanitary and highly resistant to staining and abrasion. Due to recently improved manufacturing methods, this surface has been highly perfected, being remarkably free from defects and the waviness common to fire-polished surfaces.

MECHANICALLY POLISHED SURFACE—Where mirror-like, reflective surfaces are desired, Vitrolite in black, and in a number of other colors, is supplied with a Mechanically Polished Surface, at slightly higher cost.

VITROLITE COLORS—Vitrolite is furnished in sheets of various thicknesses and sizes, in a number of plain colors and a variety of agate colors, as shown on Vitrolite Color Chart.

DECORATIVE PROCESSES—Decorative effects or letters may be secured in plain or colored sandblasted ornament or by inlays of thin colored opaque glass or mirrors. A very effective relief sign can be made by cementing Vitrolite letters to Vitrolite background. By protecting the solid surface with a stencil, a grille may be made by sandblasting through the Vitrolite. An irregular pattern effect of interesting reflective value, similar to frosting on glass, may be obtained through a process of glue chipping. By sandblasting over a resist, black Vitrolite may be given a surface resembling black granite. A crackle finish is attained by sandblasting over a resist that has separated in drying.

THICKNESS—White, Black, Gray, Jade and Ivory are produced in thicknesses of 11/32 in., 7/16 in., 3/4 in., 1 in. and 1 1/4 in. Agate colors are produced in 11/32 in. thickness only. Other plain colors—Red, Yellow, Sun Tan, Tropic Green, Princess Blue and Cadet Blue are made in 11/32 in. only. Latest information regarding colors available will be furnished by the company or any of the authorized Vitrolite dealers located in principal cities.

SIZES—The size of slabs to be used in actual installation are dependent on the location, construction and the purpose for which they are used. For store fronts, limit size of slabs to 6 sq. ft. with 3 ft. as the maximum horizontal width and 4 ft. as maximum height. For wainscoting, ashlar pieces from 8 x 12 in. to 24 x 24 in. are commonly used. Within these limits they are furnished with finished edges at a somewhat lower price than if specially cut and finished to fractional or irregular sizes. Pieces for special wainscoting should not exceed 3 x 4 ft. Slabs for toilet partitions may be had up to 5 ft. square.

STRUCTURAL ORGANIZATIONS—Franchised Vitrolite dealers, experienced and competent in the installation of Vitrolite are located in all principal cities. They may be called upon for additional information and estimates.

USES—Due to its decorative and sanitary values, its permanence, and ease of maintenance, Vitrolite has many uses in new construction and in modernizing.

Among these are:

Modernizing store fronts.

Facing exteriors of buildings.

Lobbies of hotels and office buildings.

Wainscoting and partitions for corridors, washrooms, shower baths and toilets in public buildings.

In homes as walls and wainscoting for bathrooms, kitchens, breakfast rooms, as well as work tables and splash backs.

For walls, ceilings and wainscoting of laboratories, bakeries, dairies.

In hospitals—for operating rooms, diet kitchens, laboratories, and bathrooms.

In barber shops, meat markets and other shops.

For lunch counters, bars, soda fountains, table tops in restaurants, confectioneries and taverns.

CONSTRUCTION METHODS—Careful study of the details and specifications will indicate a considerable difference in construction methods for exterior and interior work.

EXTERIOR CONSTRUCTION—Because of the extremes of temperature and exposure in exterior work special precautions must be observed to safeguard the Vitrolite, which has a very slight degree of expansion, against the expansion of materials back of it or adjacent to it, such as metal, wood, concrete or masonry, which have a considerably higher degree of expansion. Vitrolite should never come in direct contact with these materials but there should always be a space for clearance between them, filled with joint cement, cork tape or caulking, depending on the location. The facing at bulkheads should contain a base section about six inches high so as to produce an extra horizontal joint for expansion. On exteriors the Vitrolite is attached to masonry or cement plaster walls with special mastic cement made for exterior use, supplemented by shelf angles. The details shown apply generally to heights of two stories. Horizontal joints are $\frac{1}{16}$ in. wide and have adhesive cork tape set back from the face. Vertical joints are 1/32 in. wide and all joints are buttered with joint cement.

Outside edges and top of store fronts should be protected with metal trim.

For upper stories attachment may be made by concealed hangers or exposed metal members, details of which will be furnished upon request.

INTERIOR CONSTRUCTION—On interiors Vitrolite is attached against plaster or other dry and permanently secure wall surface with a mastic cement made for interior use. It is set with contact joints which are pointed with joint cement except in showers or bath tub recesses, where the joints should be solidly buttered with joint cement.



(A) STORE FRONTS and BUILDING EXTERIORS

(A-1) WORK INCLUDED. The Contractor for Structural Glass (afterwards referred to as this Contractor) shall furnish and set all of the Structural Glass required for the completion of the building (alterations) (work) as indicated on the drawings and as hereinafter specified.

This Contractor shall consult the General Conditions, Form of Contract, and other documents bound herewith or on file at the office of the Architects for instructions pertaining to his work.

(A-2) WORK NOT INCLUDED. This Contractor shall not include the following items, which work will be done by other contractors:

NOTE: List any items of which there may be doubt as belonging in the contract for Structural Glass.

(A-3) MEASUREMENTS. This Contractor shall take all measurements he may require, at the building, and shall be responsible for the proper working out of all details and dimensions and for the proper relation between the Structural Glass and the work of other contractors. He shall confer with all contractors whose work adjoins the Structural Glass to see that all details are in perfect agreement.

(A-4) DISTRIBUTION. The following schedule is submitted for this Contractor's guidance as to the locations, kind and extent of Structural Glass.

(a) This schedule is not necessarily complete in every detail and shall be used by this Contractor in conjunction with the drawings, this Contractor providing all exterior Structural Glass that may be indicated or called for:

NOTE: "Describe the location and various kinds of Structural Glass and details of thickness, color special decorations, names and similar details."

(b) Unless otherwise indicated, the Structural Glass finish shall return into all recesses, window and door openings and shall be carried around all projections.

(A-5) SEPARATE PROPOSALS. This Contractor shall submit separate proposals as called for under the heading of "GENERAL WORK."

(A-6) SAMPLES. This Contractor shall submit duplicate samples of the various kinds of Structural Glass included in the contract to the Architect for his approval before executing any of the work and he shall submit additional samples if the first samples are not approved. All samples shall be properly labeled and all Structural Glass furnished shall be equal in every respect to the approved samples.

(A-7) SHOP DRAWINGS. This Contractor shall prepare and submit complete shop drawings of all Structural Glass to the Architect for his examination before executing any of the work, as further described under "GENERAL CONDITIONS".

The shop drawings shall indicate the jointing, the various thicknesses of material, color, finish and all other salient details.

(A-8) COLOR AND FINISH. All exterior Structural Glass shall be of colors indicated (or to be selected) and the surfaces shall be fire polished or mechanically ground and polished with sandblasted and special decorations or textures, all as indicated on the drawings and details and as described under side heading of "DISTRIBUTION". The back of all Structural Glass shall have ribbed surface.

(A-9) MATERIALS. All Structural Glass shall be opaque and homogeneous, fused and rolled into slab form and thoroughly annealed.

(a) All Structural Glass shall be "Vitrolite" as manufactured by the Libbey·Owens·Ford Glass Co.

(b) All cement for setting Structural Glass shall be an asphaltic cement especially made for external use and shall be approved both by the Architects and the manufacturer of the glass. All joint cement shall be of a make as approved by the manufacturer of the Structural Glass and the Architects.

(A-10) FABRICATION. This Contractor shall follow the approved details and shop drawings in cutting, fitting and setting all Structural Glass.

(a) All Structural Glass shall be fabricated to exact sizes and shall be plumb, true and square.

(b) Where indicated Structural Glass shall be cut to special shapes and bent to indicated radius or curve. All abutting edges shall be ground square and the angles at the intersection of the face and edges shall be slightly beveled or rounded. At salient angles all exposed edges shall be polished and shall be square, rounded or beveled. Concealed edges (not abutting glass) may be clean cut.

(A-11) INSTALLATION. All Structural Glass shall be set in the best possible manner. Only experienced and competent setters shall be employed. Surfaces shall be plumb and true. Horizontal joints shall be in perfect alignment. Where continuous vertical joints occur they shall be plumb and form perfect intersections with the horizontal joints.

(a) All surfaces to which Structural Glass is to be applied shall be dry, rigid and secure and shall be masonry or cement plaster on metal lath.

(b) Wood backing will not be permitted.

(c) This Contractor shall examine the surfaces left by other contractors and shall report all defects in wall surfaces to the architects.

(d) The commencement of his work shall be an indication of the acceptance of the surfaces by him.

(e) All exterior surfaces over which Structural Glass is to be applied shall receive a bond coat of approved material applied by this Contractor. This bond coat shall be of a type that will act as a waterproofing material and that will provide an affinity between the wall surface and the cement.

NOTE: This bond coat is not required on glazes vitrified or other similar impervious and non-absorbent surfaces.

(f) The surfaces of the wall and the back of the Structural Glass shall be perfectly dry.

(g) The Structural Glass shall be cemented by an approved mastic to the wall surfaces, and the space between the wall and the glass shall not exceed approximately ⅜ in. with a variance of ⅛ in. narrower or wider.

(h) Where Structural Glass starts at the sidewalk level it shall be set on a cushion strip of heavy roofing or other approved permanent and resilient material at least ¼ in. thick.

(i) At the base, top and sides of the Structural Glass, and around all openings the setting cement shall be applied solidly for a width of 3 in. from the edge of the glass. Elsewhere the cement shall be set in daubs 2 to 3 in. in diameter evenly distributed so that 60% of the total area of the glass shall be covered with cement when set.

(j) Each horizontal joint shall have a strip of adhesive cork tape 1/16 in. thick set back about ⅛ in. from the face. This tape shall be buttered over and the open joint in front filled with joint cement.

(k) Each vertical joint shall be at least 1/32 in. in thickness and shall be thoroughly buttered with joint cement and in no case shall pieces of Structural Glass in either vertical or horizontal joints abut directly against each other.

(l) Where the edges of Structural Glass finish against metal or against adjoining property a joint of 1/16 to ⅛ in. shall be left and the joint pointed smooth and even with joint cement.

(m) The Structural Glass shall be supported on shelf angles set approximately 3 feet apart vertically and in such a manner that they will be concealed by the joint cement.

(n) These angles shall be No. 18 gauge (galvanized iron) (brass) approximately 3 in. square and with a ½ in. leg to support the Structural Glass.

(o) They shall be spaced at approved intervals and shall be secured to the wall with expansion bolts, toggle bolts or other approved manner.

(p) The top edge of the upper course of Structural Glass shall be set under the masonry sill or projection and the joints shall be thoroughly filled with cement.

(q) Where no projection occurs, the top course of Structural Glass shall be covered with a member of (aluminum) (stainless steel) which shall be furnished and installed by this Contractor.

(r) This member shall be formed to provide a drip and shall be flashed into the wall in a manner to eliminate the possibility of water getting in behind the Structural Glass.

(s) Where the Structural Glass facing extends to the top of a wall where no coping is used, this Contractor shall furnish and install an (aluminum) (stainless steel) coping well anchored to the wall and forming an approved drip.

(t) Exposed edges of Structural Glass at the extreme sides of the installation shall be covered by an (aluminum) (stainless steel) molding. This molding shall be furnished and installed by this Contractor in a manner to cover the cement joint and to eliminate the possibility of moisture getting behind the Structural Glass.

(u) Where ceiling and soffit slabs occur see (k) and (l) under B-11—Interiors.

(v) Where Structural Glass is indicated above limit and height permitted for setting by the methods described above the mastic cement shall be supplemented by the use of mechanical fastenings to be approved by the Architect and in conformance with the requirements of the local building ordinance.

(A-12) CUTTING, DRILLING AND FITTING. This Contractor shall do all cutting, drilling and fitting of Structural Glass required for its proper installation and as required by other contractors to properly complete their work.

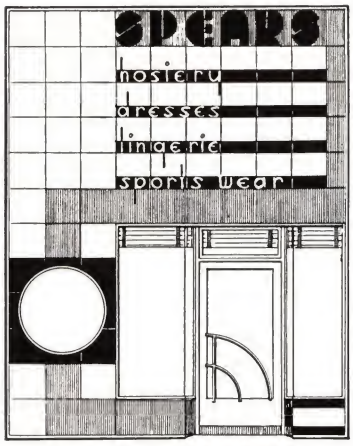
(A-13) SCAFFOLDING. This Contractor shall furnish, maintain and move as required all scaffolding he may require for the installation of Structural Glass.

All scaffolding shall be constructed and maintained in strict accordance with Federal and State Laws and City Ordinance requirements.

(A-14) PROTECTION, CLEANING AND POINTING. This Contractor shall provide all items of protection necessary to prevent damage to the Structural Glass at all times during the progress of the work. At completion he shall carefully point up all joints as required, shall clean the glass and leave all surfaces in perfect condition.

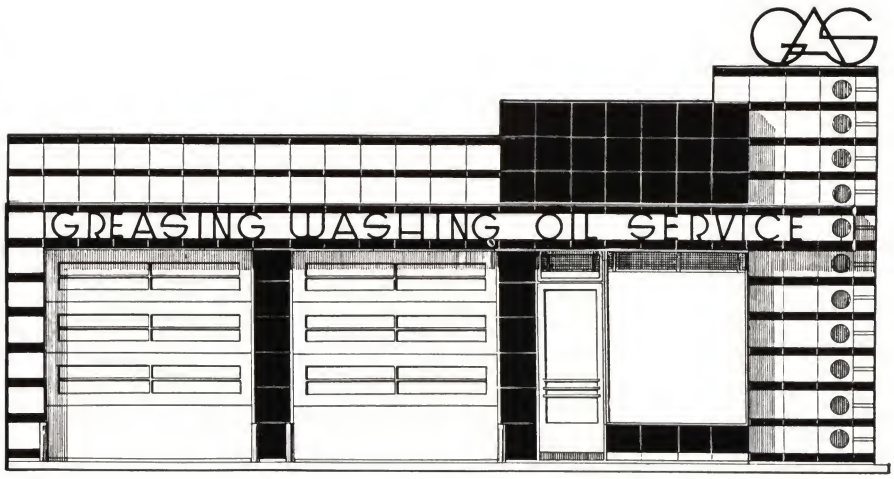
(A-15) GUARANTEE. This Contractor shall guarantee the entire installation against all defects of workmanship and material, including crazing, absorption of foreign matter, parting from wall, loosening or breaking except from the effects of external force or excessive heat, for a period of eighteen (18) months after the completion of the contract, as evidenced by the issuance of the final certificate, and he shall promptly repair at his own expense any defects that may arise within that period upon written notice from the Owner or Architects.





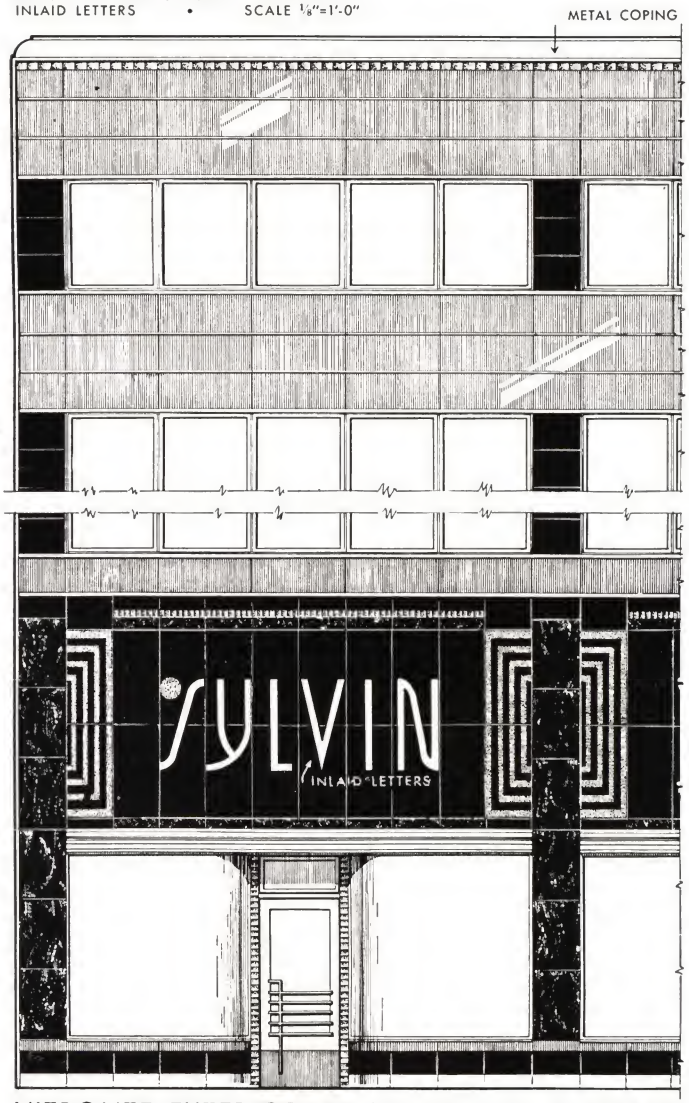
VITROLITE SHOP FRONT

REMODELED WITH COLORED VITROLITE AND INLAID LETTERS • SCALE ⅛"=1'-0"



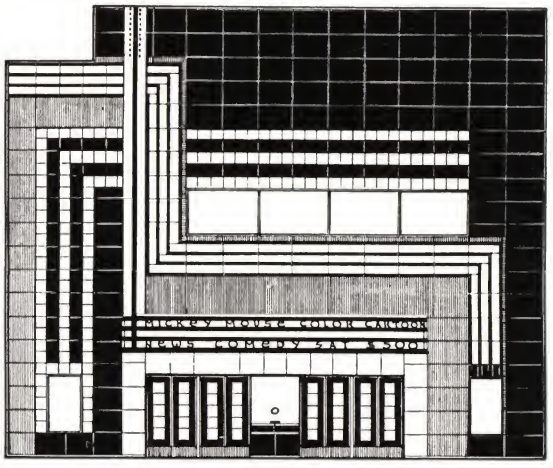
GAS AND SERVICE STATION

SHOWING EFFECTIVE APPLICATION OF VITROLITE CEMENTED TO MASONRY WALL • SCALE ⅛"=1'-0"



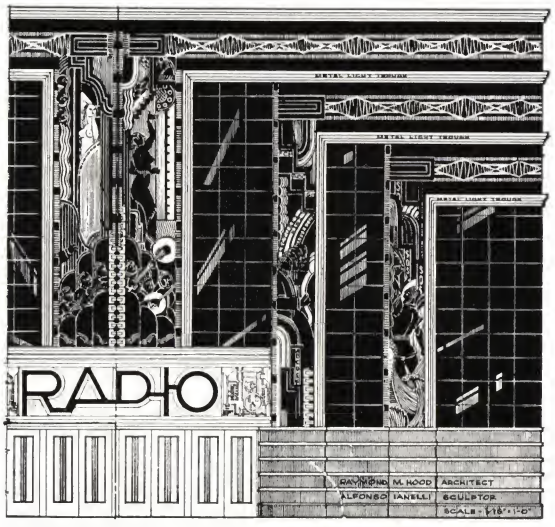
VITROLITE EXTERIOR TREATMENT OF BUILDING

STORE FRONT SHOWING CURVED BULKHEADS AND SANDBLAST DECORATION. VITROLITE FOR UPPER STORIES HELD IN PLACE BY MASTIC CEMENT AND METAL MOULDINGS. SCALE ⅛"=1'-0"



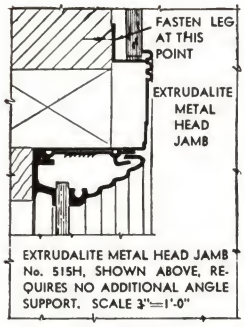
VITROLITE MOVIE THEATRE FRONT

COMBINATION OF COLORED AND BLACK VITROLITE WITH GLASS BLOCKS IN DECORATIVE PATTERN EFFECT • SCALE 1/16"=1'-0"

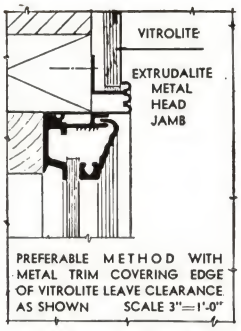


VITROLITE FACADE OF EXPOSITION BLDG.

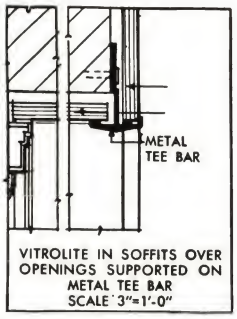
SHOWING USE OF VITROLITE WITH BAS-RELIFF SCULPTURE AND INDIRECT LIGHTING TROUGHS • SCALE 1/16"=1'-0"



EXTRUDALITE METAL HEAD JAMB No. 515H, SHOWN ABOVE, REQUIRES NO ADDITIONAL ANGLE SUPPORT. SCALE 3"=1'-0"

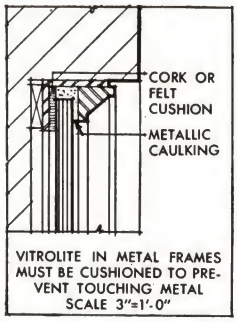


PREFERABLE METHOD WITH METAL TRIM COVERING EDGE OF VITROLITE LEAVE CLEARANCE AS SHOWN SCALE 3"=1'-0"

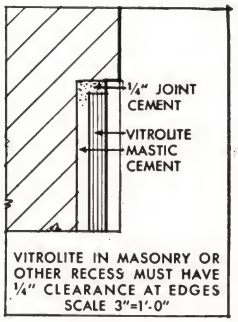


VITROLITE IN SOFFITS OVER OPENINGS SUPPORTED ON METAL TEE BAR SCALE 3"=1'-0"

SECTIONS THRU HEAD OF SHOW WINDOWS

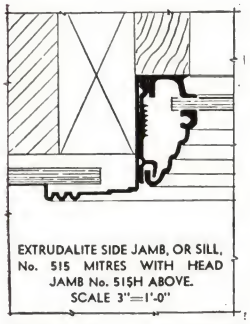


VITROLITE IN METAL FRAMES MUST BE CUSHIONED TO PREVENT TOUCHING METAL SCALE 3"=1'-0"

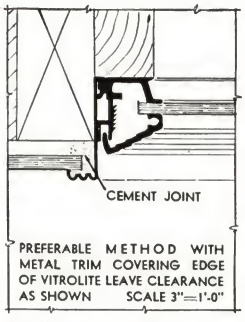


VITROLITE IN MASONRY OR OTHER RECESS MUST HAVE ¼" CLEARANCE AT EDGES SCALE 3"=1'-0"

SECTIONS THRU SPANDRELS

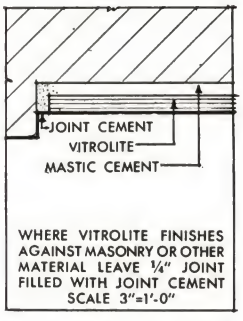


EXTRUDALITE SIDE JAMB, OR SILL, No. 515 MITRES WITH HEAD JAMB No. 515H ABOVE. SCALE 3"=1'-0"

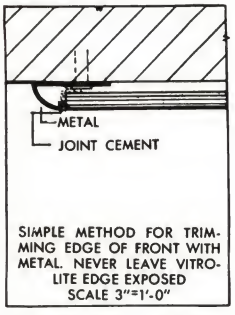


PREFERABLE METHOD WITH METAL TRIM COVERING EDGE OF VITROLITE LEAVE CLEARANCE AS SHOWN SCALE 3"=1'-0"

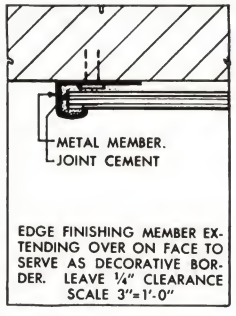
SIDE JAMB DETAILS



WHERE VITROLITE FINISHES AGAINST MASONRY OR OTHER MATERIAL LEAVE ¼" JOINT FILLED WITH JOINT CEMENT SCALE 3"=1'-0"

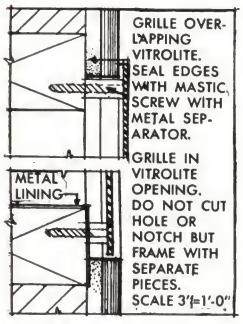


SIMPLE METHOD FOR TRIMMING EDGE OF FRONT WITH METAL. NEVER LEAVE VITROLITE EDGE EXPOSED SCALE 3"=1'-0"

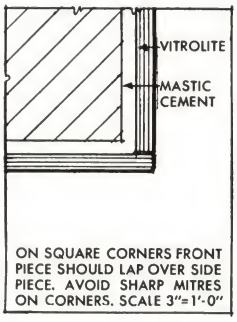


EDGE FINISHING MEMBER EXTENDING OVER ON FACE TO SERVE AS DECORATIVE BORDER. LEAVE ¼" CLEARANCE SCALE 3"=1'-0"

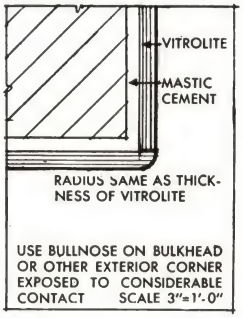
PLANS THRU EDGES OF STORE FRONT



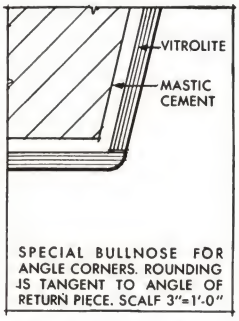
GRILLE DETAILS



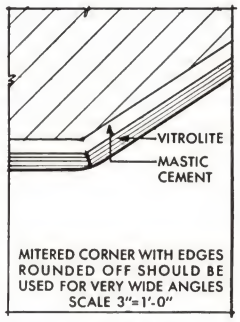
ON SQUARE CORNERS FRONT PIECE SHOULD LAP OVER SIDE PIECE. AVOID SHARP MITRES ON CORNERS. SCALE 3"=1'-0"



USE BULLNOSE ON BULKHEAD OR OTHER EXTERIOR CORNER EXPOSED TO CONSIDERABLE CONTACT SCALE 3"=1'-0"

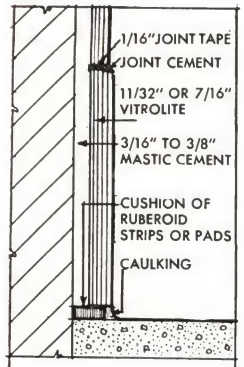


SPECIAL BULLNOSE FOR ANGLE CORNERS. ROUNDING IS TANGENT TO ANGLE OF RETURN PIECE. SCALE 3"=1'-0"

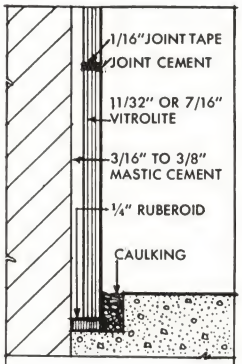


MITERED CORNER WITH EDGES ROUNDED OFF SHOULD BE USED FOR VERY WIDE ANGLES SCALE 3"=1'-0"

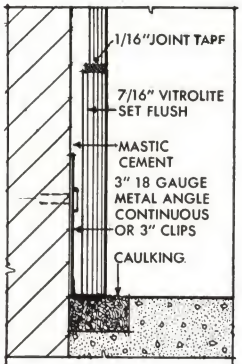
PLANS THRU VITROLITE AT CORNERS



BASE SHOULD BE SET ABOVE SIDEWALK WHERE POSSIBLE AND SET ON STRIPS OR PADS OF RUBEROID TO PREVENT BREAKAGE FROM EXPANSION OF SIDEWALK. SCALE 3"=1'-0"

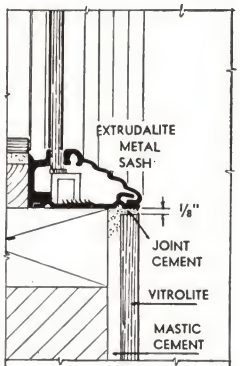


IF SIDEWALK SET AT HIGHER LEVEL AFTER BASE IS SET LEAVE ¼" to ½" CAULKED SPACE TO PREVENT EXPANSION OF SIDEWALK FROM CRACKING VITROLITE SCALE 3"=1'-0"

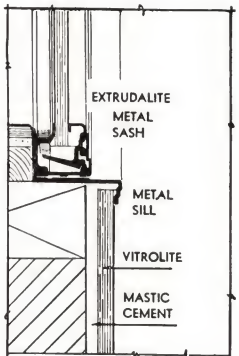


IMPROVED METHOD ESPECIALLY FOR NEW WORK IS TO SUPPORT BASE ON METAL ANGLE AND LEAVE CAULKING SPACE BELOW AND IN FRONT OF BASE SCALE 3"=1'-0"

SECTIONS THRU BULKHEAD BASE

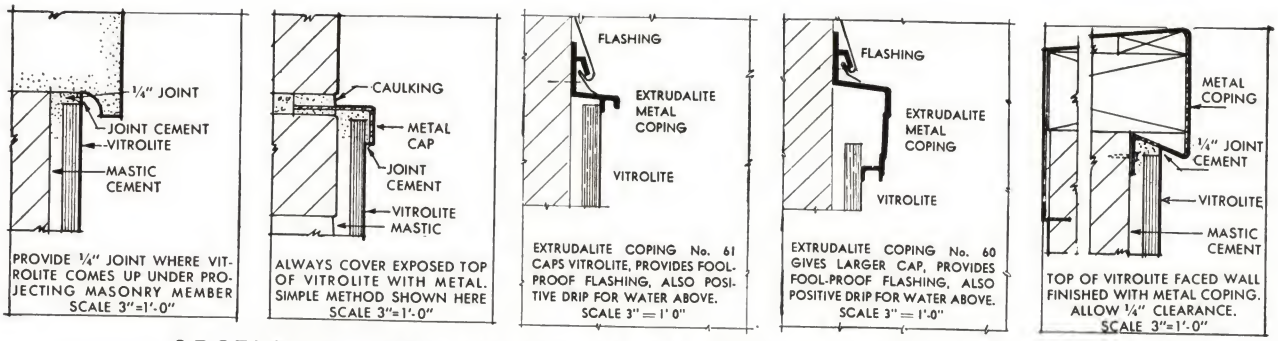


LEAVE ⅛" CLEARANCE BETWEEN TOP OF VITROLITE AND METAL SASH. DO NOT LEAVE VITROLITE EXPOSED AT TOP. SCALE 3"=1'-0"

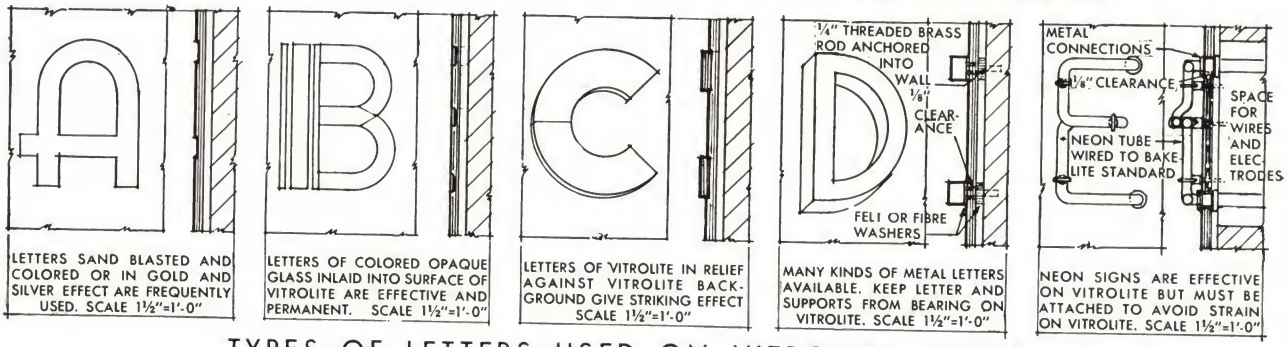


IT IS PREFERABLE TO COVER TOP OF VITROLITE AT BULKHEAD WITH METAL SILL MEMBER TO PROTECT EDGE AND MAKE WEATHER TIGHT. SCALE 3"=1'-0"

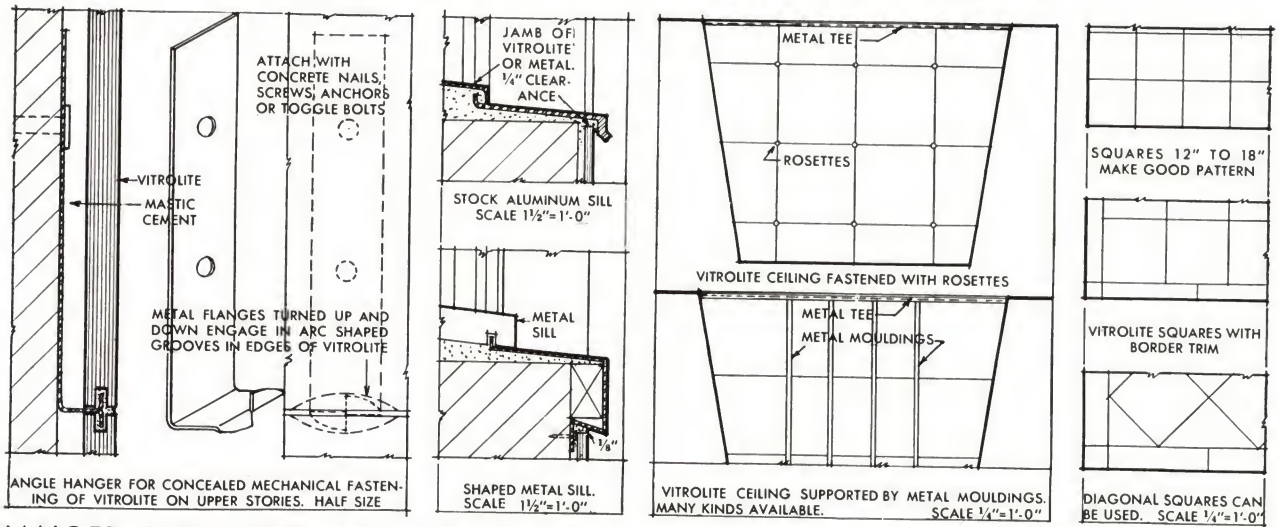
SILLS OF SHOW WINDOWS



SECTIONS THRU FINISH AT TOP OF VITROLITE FACING



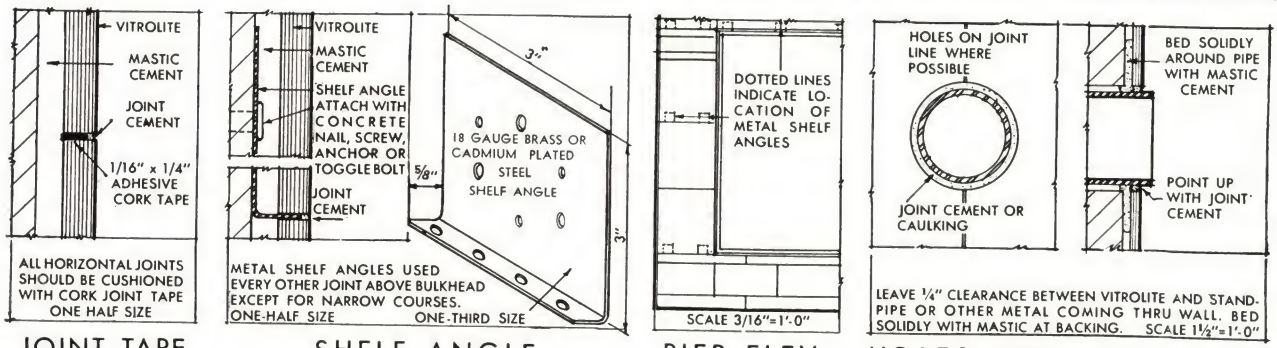
TYPES OF LETTERS USED ON VITROLITE FRONTS



HANGER FOR FASTENING WINDOW SILLS

CEILINGS OVER ENTRY

Show Wdw. Floors



JOINT TAPE

SHELF ANGLE

PIER ELEV.

HOLES FOR PIPES, ETC.



VITROLITE FOR INTERIORS

● Vitrolite Structural Glass has a definite place in today's interior design and architecture that places so much emphasis on functional and decorative values. Interiors now gleam with color. And because Vitrolite is glass, it is inherently clean —it will not absorb odors, moisture or grease.

Vitrolite is ideally suited for the modernization of existing interiors as well as for new construction. It lends an evidence of quality and contributes to the owner's permanent satisfaction.

A sparkling, colorful interior of Vitrolite meets the most exacting requirements of cleanliness and sanitation. Its hard, reflective surface will not deteriorate from the effects of moisture or age. Washing is all that is ever required to maintain its original beauty.

Vitrolite is not only a lasting wall facing material, but because of its beauty of surface and color it is recognized as having a distinctly modern appearance and possessing decorative qualities of a high order.

The following pages contain construction details, specifications and information as to proper installation methods.

Vitrolite may be combined effectively with metal trim and accessories.

A typical building lobby installation of Vitrolite in combination with Vitrolux Color Fused Tempered Plate Glass, is illustrated above. Here the walls and trim are of colorful Vitrolite and the ceiling lighting is evenly diffused with Vitrolux, set in the new L·O·F Extrudalite metal construction. Where the designer wishes to place metal division strips between Vitrolite panels, specially designed Extrudalite members are available. (See page 11 to 15 for Vitrolux data and pages 28 to 36 for Extrudalite data.) These products provide the architect with fascinating and versatile resources for effective design and color that will undoubtedly exert a strong influence upon the character of interior architecture.

(B) INTERIORS

(B-1) WORK INCLUDED. Same as A-1 Store Fronts.

(B-2) WORK NOT INCLUDED. Same as A-2 Store Fronts.

(B-3) MEASUREMENTS. Same as A-3 Store Fronts.

(B-4) DISTRIBUTION. Same as A-4 Store Fronts.

(a) This schedule is not necessarily complete in every detail and shall be used by this Contractor in conjunction with the drawings, this Contractor providing all interior Structural Glass that may be indicated or called for.

"Describe the location and various kinds of the Structural Glass with details of thickness, color, special decorations and similar details".

(b) Unless otherwise indicated, all Structural Glass finish shall extend to the wood members at the door jambs, and shall return in window openings to the frames including the stools.

NOTE: Structural Glass should not finish directly against door jamb. It is preferable to use a small molding between jamb and edge of structural glass.

(c) In conjunction with all Structural Glass base this Contractor shall form plinths as indicated on the drawings under door casings, pilasters and all other special treatment in the spaces in which the base occurs.

(d) Where base, wainscot and other Structural Glass work is specified in a space it shall be taken to include the entire space, including all walls, partitions, columns, returns in openings, alcoves and recesses, together with all pilasters and other features required to carry out designs in the various locations.

(B-5) SEPARATE PROPOSALS. Same as A-5 Store Fronts.

(B-6) SAMPLES. Same as A-6 Store Fronts.

(B-7) SHOP DRAWINGS. Same as A-7 Store Fronts.

(B-8) COLOR AND FINISH. Same as A-8 Store Fronts.

(B-9) MATERIALS. Same as A-9 Store Fronts.

(a) Same as (a)—A-9 Store Fronts.

(b) All mastic for attaching Structural Glass and all joint cement shall be of a make as approved by the manufacturer of the Structural Glass and the architect.

(B-10) FABRICATION. Same as A-10 (a & b) Store Fronts.

(B-11) INSTALLATION. Same as A-11 Store Fronts.

(a) All surfaces to which Structural Glass is to be applied shall have a brown coat, or finish coat of plaster which shall be plumb, true and smooth, and shall be executed by the Plastering Contractor.

NOTE: While a plaster base is recommended, Structural Glass for interior work may be cemented against any surface that is dry, rigid, substantial and permanently secure.

(b) Same as (c) A-11 Store Fronts.

(c) Same as (d) A-11 Store Fronts.

(d) All interior surfaces over which Structural Glass is to be applied shall receive a bond coat of approved material by this Contractor.

(e) The surfaces of the wall and the back of the Structural Glass shall be perfectly dry.

(f) The Structural Glass shall be set in place with cement and all joints shall be hair line joints.

(g) Where Structural Glass occurs as wainscot above tubs in bathrooms and on rear and sidewalls of shower partitions, the bottom 2 in. shall be set solidly in mastic. Elsewhere the mastic shall be set in daubs 2 in. to 3 in. in diameter evenly distributed so that 60% of the total area of the glass shall be covered with mastic. All joints of wainscot on walls of showers, enclosures, around tubs, and similar locations shall be buttered with joint cement.

(h) In general, the Structural Glass for base, cap and trim shall be 7/16 in. (11/32 in.) thick and shall be of the dimensions indicated. The relation of the cap to the plaster surface above shall be as detailed.

(i) Ashlar material shall be 11/32 in. in thickness with an approximate minimum dimension of 8 in. x 12 in. and an approximate maximum dimension of 24 in. x 24 in.

(j) Window stools shall be ¾ in. in thickness.

(k) Ceiling and soffit slabs shall be 11/32 in. in thickness and shall be secured to 1 in. x 4 in. wood furring strips set in place by this Contractor.

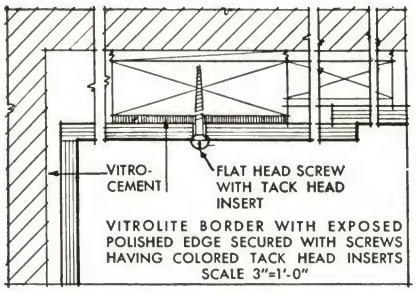
(l) The ceiling slabs shall be set in mastic on the furring strips and held in place by rosettes of material and design to be selected and approved by this Architect, set over felt washers and secured with brass wood screws.

(m) This Contractor shall furnish and set the following bathroom accessories (Give list and description of accessories desired). They shall be located as indicated on the drawings or as directed by the architects.

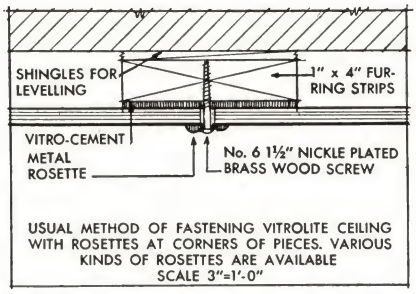
(B-12) CUTTING, DRILLING AND FITTING. Same as A-12 Store Fronts.

(B-13) PROTECTION, CLEANING AND POINTING. Same as A-13 Store Fronts.

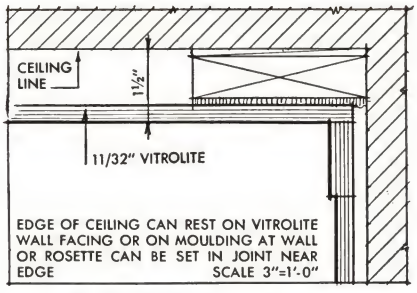
(B-14) GUARANTEE. Same as A-14 Store Fronts.



VITROLITE BORDER WITH EXPOSED POLISHED EDGE SECURED WITH SCREWS HAVING COLORED TACK HEAD INSERTS
SCALE 3"=1'-0"

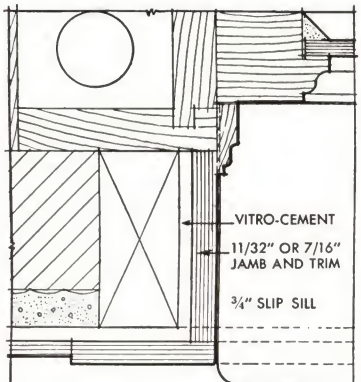


USUAL METHOD OF FASTENING VITROLITE CEILING WITH ROSETTES AT CORNERS OF PIECES. VARIOUS KINDS OF ROSETTES ARE AVAILABLE
SCALE 3"=1'-0"

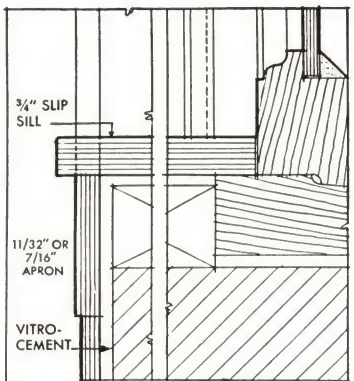


EDGE OF CEILING CAN REST ON VITROLITE WALL FACING OR ON MOULDING AT WALL OR ROSETTE CAN BE SET IN JOINT NEAR EDGE
SCALE 3"=1'-0"

METHODS OF VITROLITE CEILING CONSTRUCTION

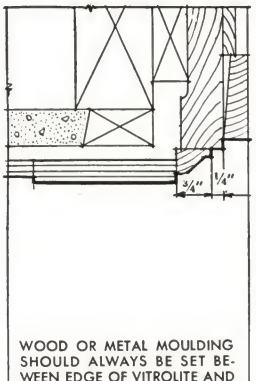


VITROLITE TRIM AND JAMB. IF WOOD JAMB IS USED CARRY MOULDING AROUND OPENING AS SHOWN FOR DOOR
SCALE 3"=1'-0"

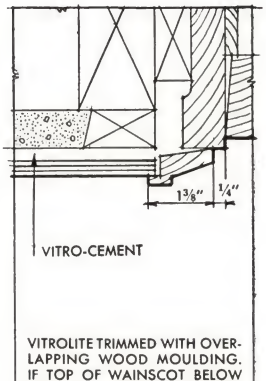


SLIP SILLS PREFERABLE IN VITROLITE. NOTCHED SILLS NOT ADVISABLE. MAKE ENDS OF SILL ROUNDED
SCALE 3"=1'-0"

VITROLITE TRIM FOR WINDOWS

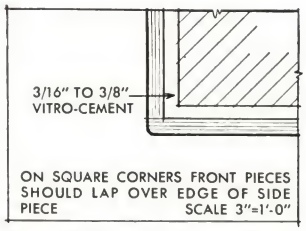


WOOD OR METAL MOULDING SHOULD ALWAYS BE SET BETWEEN EDGE OF VITROLITE AND WOOD JAMB AT DOOR OR WINDOW OPENINGS TO AVOID EXPOSED CEMENT JOINT. SIZE AND SHAPE AS REQUIRED
SCALE 3"=1'-0"

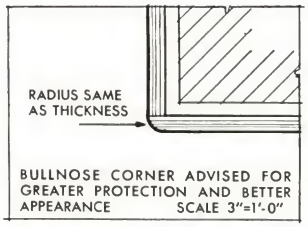


VITROLITE TRIMMED WITH OVERLAPPING WOOD MOULDING. IF TOP OF WAINSCOT BELOW TOP OF DOOR ADDITIONAL WOOD MEMBER CARRIED AROUND OPENING ABOVE WAINSCOT TO COMPLETE TRIM
SCALE 3"=1'-0"

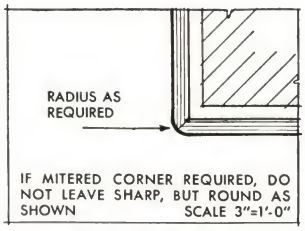
VITROLITE DOOR TRIM



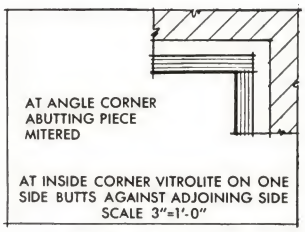
ON SQUARE CORNERS FRONT PIECES SHOULD LAP OVER EDGE OF SIDE PIECE
SCALE 3"=1'-0"



BULLNOSE CORNER ADVISED FOR GREATER PROTECTION AND BETTER APPEARANCE
SCALE 3"=1'-0"

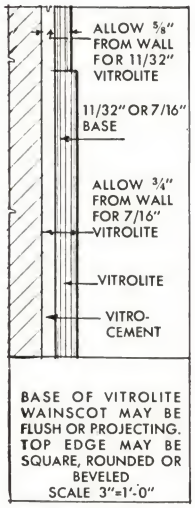


IF MITERED CORNER REQUIRED, DO NOT LEAVE SHARP, BUT ROUND AS SHOWN
SCALE 3"=1'-0"

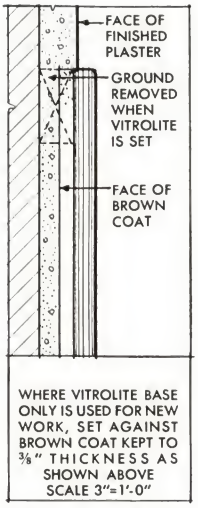


AT INSIDE CORNER VITROLITE ON ONE SIDE BUTTS AGAINST ADJOINING SIDE
SCALE 3"=1'-0"

DETAILS OF CORNERS FOR VITROLITE INTERIORS

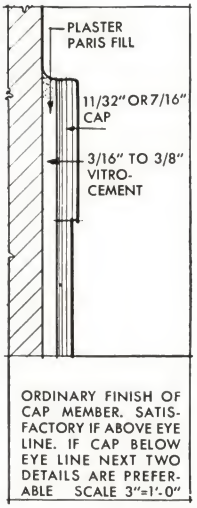


BASE OF VITROLITE WAINSCOT MAY BE FLUSH OR PROJECTING. TOP EDGE MAY BE SQUARE, ROUNDED OR BEVELED
SCALE 3"=1'-0"

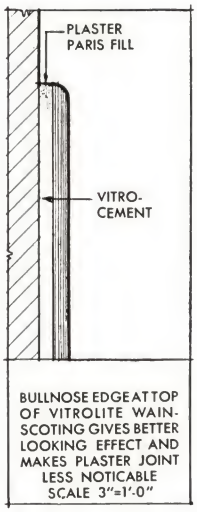


WHERE VITROLITE BASE ONLY IS USED FOR NEW WORK, SET AGAINST BROWN COAT KEPT TO 3/8" THICKNESS AS SHOWN ABOVE
SCALE 3"=1'-0"

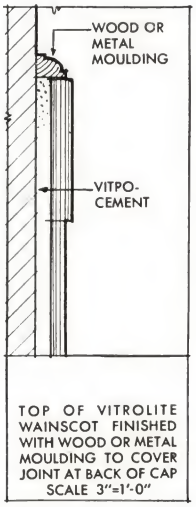
SECTIONS OF BASES



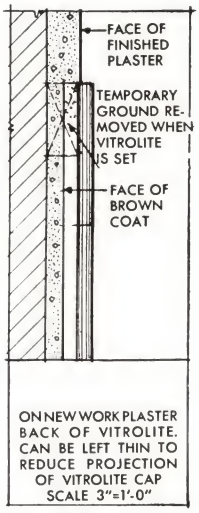
ORDINARY FINISH OF CAP MEMBER. SATISFACTORY IF ABOVE EYE LINE. IF CAP BELOW EYE LINE NEXT TWO DETAILS ARE PREFERABLE
SCALE 3"=1'-0"



BULLNOSE EDGE AT TOP OF VITROLITE WAINSCOTING GIVES BETTER LOOKING EFFECT AND MAKES PLASTER JOINT LESS NOTICABLE
SCALE 3"=1'-0"

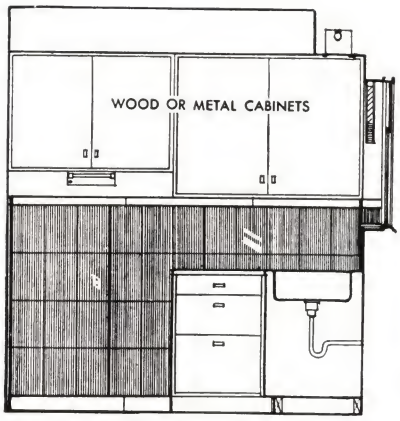


TOP OF VITROLITE WAINSCOT FINISHED WITH WOOD OR METAL MOULDING TO COVER JOINT AT BACK OF CAP
SCALE 3"=1'-0"

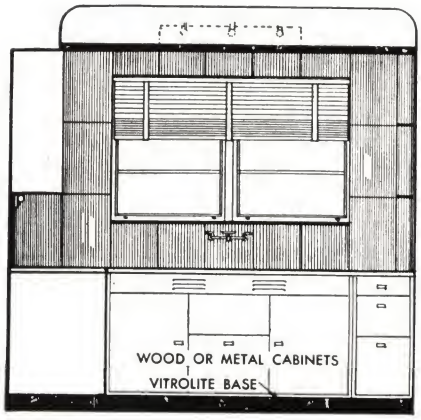


ON NEW WORK PLASTER BACK OF VITROLITE. CAN BE LEFT THIN TO REDUCE PROJECTION OF VITROLITE CAP
SCALE 3"=1'-0"

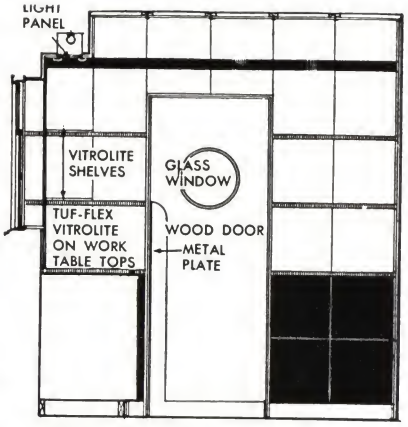
SECTIONS OF VITROLITE CAPS



VITROLITE WAINSCOT IN ECONOMICAL STOCK SIZES. CAPS OF 2" OR 3" ASHLAR OF 8" x 12" OR 8" x 16" BASE OF 4" OR 6". • SCALE ¼"=1'-0"

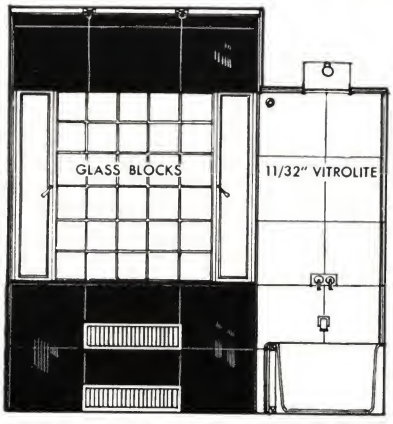


VITROLITE ARRANGEMENT TO FIT WALL CONDITIONS PIECES OF EVEN INCHES UP TO 24" LOWER IN PRICE THAN FRACTIONAL SIZES. • SCALE ¼"=1'-0"

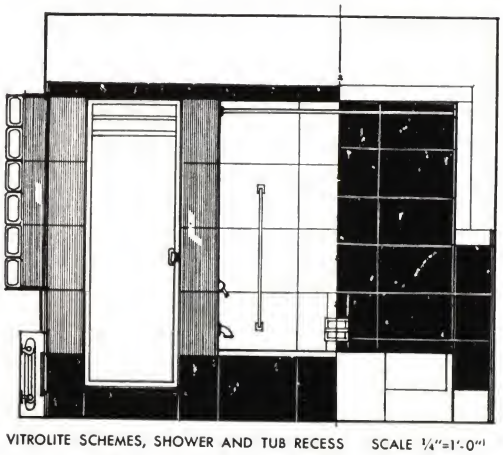


VITROLITE IN VARIETY OF SHAPES CAN BE USED IN INTERESTING COLOR SCHEMES ON WALLS AND CEILING. SCALE ¼"=1'-0"

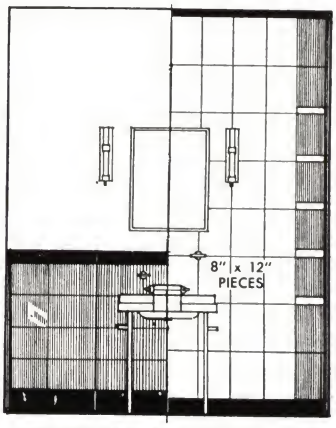
VITROLITE WAINSCOTING AND WALLS IN KITCHENS



BATHROOM WALLS AND CEILING SCALE ¼"=1-0"

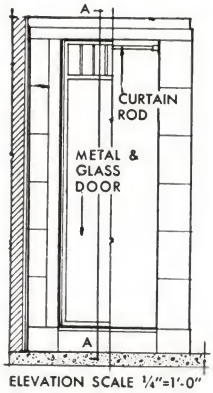


VITROLITE SCHEMES, SHOWER AND TUB RECESS SCALE ¼"=1'-0"

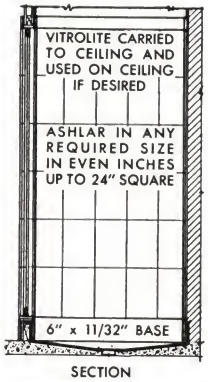


WAINSCOT & WALL IN STOCK SIZES

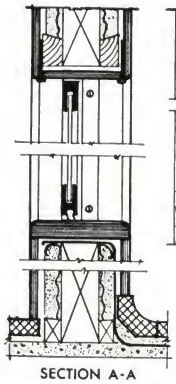
VITROLITE WALL TREATMENTS IN BATHROOMS



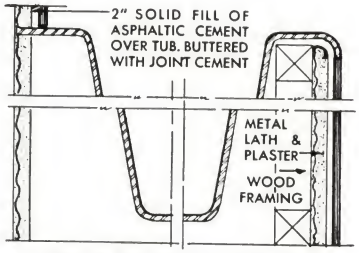
ELEVATION SCALE ¼"=1'-0"



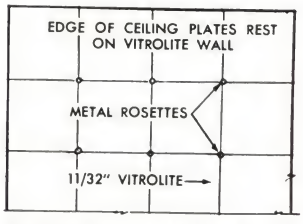
SECTION



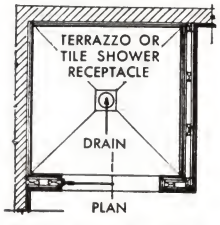
SECTION A-A



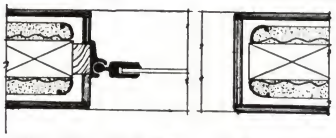
VITROLITE FACING ON TUBS PERMITS CARRYING UNIFORM BASE EFFECT AROUND ROOM. TUBS AS ABOVE SUPPLIED BY MOST BATHROOM FIXTURE MANUFACTURERS SCALE 1½"=1'-0"



VITROLITE CEILINGS ARE ATTRACTIVE AND EASILY KEPT CLEAN. USUALLY IN SQUARES IN EVEN INCHES UP TO 24" SCALE ¼"=1'-0"



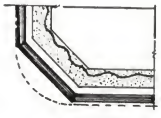
PLAN



PLAN THRU JAMB OF SHOWER SHOWING FASTENING OF SHOWER DOOR

PLAN THRU SHOWER OPENING WITH VITROLITE JAMBS

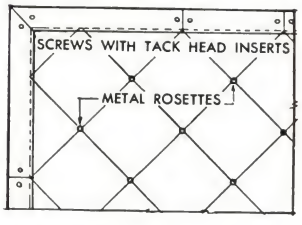
SCALE OF DETAILS 1½"=1'-0"



DIAGONAL CORNER FOR VITROLITE TUB FACING SCALE 1½"=1'-0"



ROUNDED CORNER FOR VITROLITE TUB FACING SAME RADIUS AS RIM SCALE 1½"=1'-0"



CEILINGS WITH BORDER IN RELIEF. VITROLITE MAY ALSO BE HELD WITH METAL MOULDINGS. MANY ARRANGEMENTS ARE POSSIBLE SCALE ¼"=1'-0"

DETAILS OF VITROLITE SHOWER

BATHTUB FACING

CEILINGS

(C) TOILET PARTITIONS, ETC.

(C-1) WORK INCLUDED. Same as A-1 Store Fronts.

(C-2) WORK NOT INCLUDED. Same as A-2 Store Fronts.

(C-3) MEASUREMENTS. Same as A-3 Store Fronts.

(C-4) DISTRIBUTION. Same as A-4 Store Fronts.

(a) Same as (a) B-4 Interiors.

"Describe fully the type of toilet partition required".

(C-5) SEPARATE PROPOSALS. Same as A-5 Store Fronts.

(C-6) SAMPLES. Same as A-6 Store Fronts.

(C-7) SHOP DRAWINGS. Same as A-7 Store Fronts.

(C-8) COLOR AND FINISH. Same as A-8 Store Fronts.

(C-9) MATERIALS. Same as A-9 Store Fronts.

(a) Same as (a) A-9 Store Fronts.

(b) Same as (b) B-9 Interiors.

(c) Plaster of Paris shall be made from pure Gypsum Rock, which has been thoroughly calcined, fully ground and air separated.

(d) It shall be free from lumps and uniform in fineness and setting quality and shall be of an approved standard brand especially adapted for the setting of Structural Glass.

(e) Portland Cement shall be an approved brand of non-staining white Portland Cement.

(C-10) FABRICATION. Same as A-10 Store Fronts.

(C-11) INSTALLATION. Same as A-11 Store Fronts.

TYPE A TOILET PARTITION. Type A toilets shall have partitions consisting of two 7/16 in. slabs cemented together and reinforced with two metal straps, which shall extend from the edges, which shall be bent and fitted to chromium plated metal sleeves (by this Contractor) to support the center stile and also bent and secured to the rear wall with plaster of Paris fill. (See Vitrolite construction details.)

The stiles shall be 1¼ in. thick and shall be let into the walls and floors 1 in. and set in plaster of Paris. The bottom of the stiles shall be wrapped around with a tight fitting strip of Ruberoid or similar material ¼ in. thick and ½ in. in width which shall be left in place. The lower part of the stiles shall be wrapped with a protective layer of heavy building paper to be cut off at floor line at completion.

TYPE B TOILET PARTITION. Shall be similar to Type A except that partition shall not have metal straps but shall have metal tee-iron at the top anchored into rear wall and connected with chromium plated metal fitting at front stile. The stile being joined with square chromium plated metal head rails. The bottom of partitions shall rest on chromium plated metal standards at the back of stile and rear wall. (See Vitrolite construction details.)

(C-12) HARDWARE. This Contractor shall note that all hardware will be furnished and installed by the Contractor for "Hardware", or the General Contractor. If this contractor is to install hardware the following will apply:

(a) This Contractor shall obtain templates as required and shall fit and secure all hardware necessary to complete the Structural Glass toilet partition.

(b) He shall install for each toilet stall door, two adjustable reverse spring hinges (or pivot type hinges) to hold door open when stall is unoccupied and which will be equal to (state manufacturer and number).

(c) One bolt equal to (state manufacturer and number).

(d) One strike equal to (state manufacturer and number).

(e) One approved double prong coat hook with rubber bumper (attached to door).

(f) He shall also install for each toilet stall an approved chromium plated cabinet type toilet paper holder (attached to the door).

(In cases where union regulations so require, coat hook and paper holder to be set by plumbing contractor.)

(C-13) URINALS. Where indicated the urinal wainscots shall be 11/32 in. ashlar and the divisions shall be 1 in. slabs polished on both sides and let in and cemented into grooves in the floor and walls.

(a) Where indicated, the backs of the urinals shall be constructed of one piece ¾ in. thick slabs set above a terra cotta trough (by others) and in a manner to slope back at the top and fit below a — in. cap.

(b) Where so indicated this Contractor shall construct a Structural Glass cover for a concealed flush pipe.

(c) This shall be built around a (steel) (wood) support (by others), as indicated on the details.

(C-14) SHOWER STALLS. Shower stalls shall be built around a metal lath and cement plaster core (by others) using 11/32 in. ashlar, 7/16 in. (11/32 in.) cap finished in accordance with the details. All joints shall be buttered with joint cement.

(a) This contractor shall provide and install to all shower stalls.

(b) 1½ in. diam. nickel metal rods. 26 oz. approved duck curtains 6 ft. 6 in. in length and fitted with nickel metal rings and grommets.

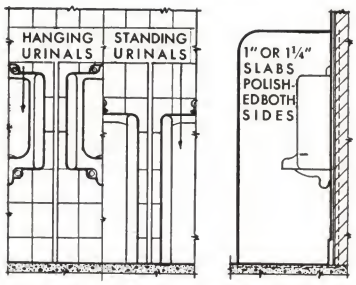
(C-15) CUTTING, DRILLING AND FITTING. Same as A-12 Store Fronts.

(C-16) PROTECTION, CLEANING AND POINTING. Same as A-14 Store Fronts.

(C-17) GUARANTEE. Same as A-15 Store Fronts.

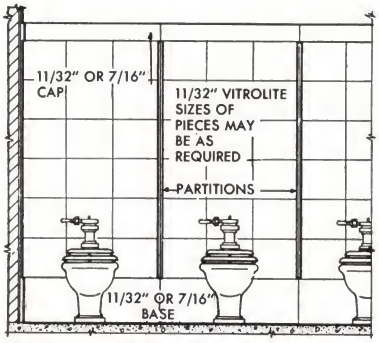
SHORT FORM OF SPECIFICATION

"All Structural Glass for..... shall be "Vitrolite", manufactured by the Libbey·Owens·Ford Glass Company, Toledo, Ohio, and shall be set in accordance with instructions issued by the above Company."

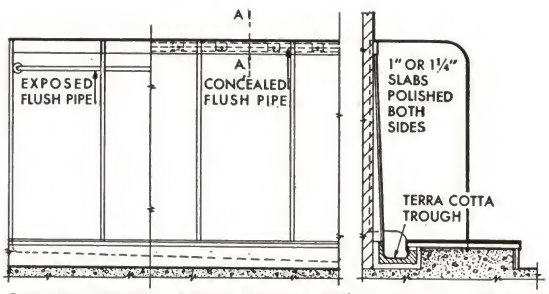


VITROLITE PARTITION SLABS AND WAINSCOTING.
SCALE ¼"=1'-0"

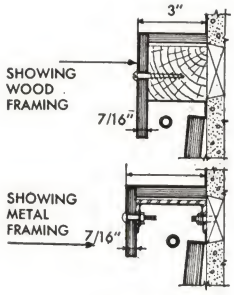
URINAL PARTITIONS



VITROLITE WAINSCOTING AT BACK OF STALLS.
SCALE ¼"=1'-0"

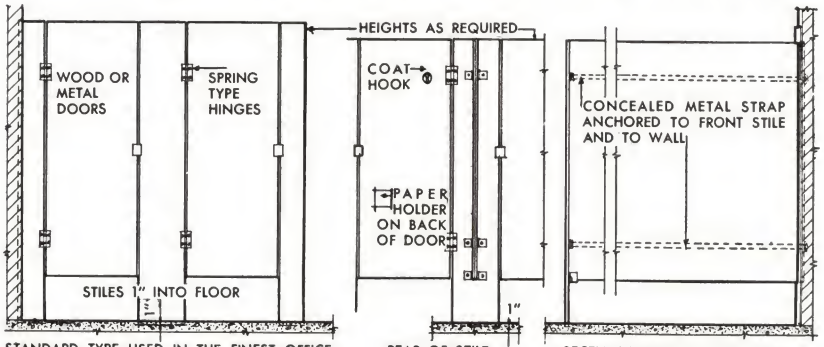


TYPE OF VITROLITE URINALS USED IN STADIUMS, FACTORIES AND INSTITUTIONS. • SCALE ¼"=1'-0"



SECTIONS AT A-A
SCALE 1½"=1'-0"

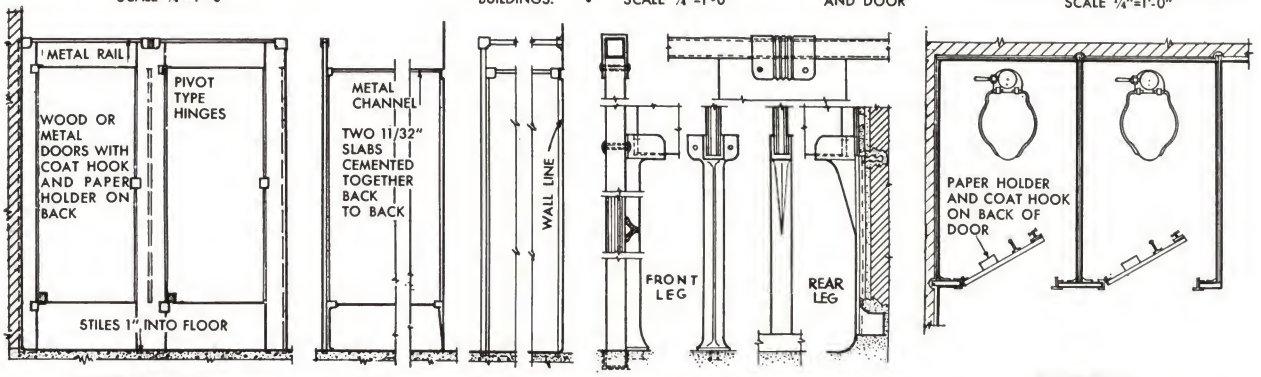
ALL-VITROLITE URINAL STALLS



STANDARD TYPE USED IN THE FINEST OFFICE BUILDINGS. • SCALE ¼"=1'-0"

REAR OF STILE AND DOOR

SECTION THROUGH TOILET STALL.
SCALE ¼"=1'-0"



FRONT ELEVATION — SECTION — END ELEVATION

NEW TYPE OF VITROLITE TOILET STALL CONSTRUCTION WITH METAL HEADRAIL TO GIVE RIGIDITY AND WITH FLOATING PARTITION RELIEVED OF ALL STRAIN. SCALE ¼"=1'-0"

DETAILS OF NEW METAL HEADRAIL AND LEG SUPPORTS
SCALE 1"=1'-0"

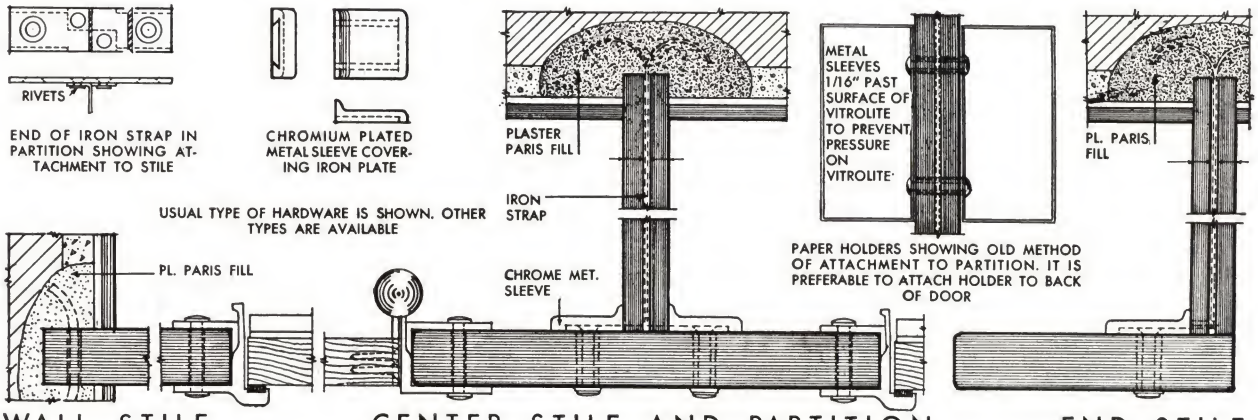
FLOOR PLAN

WIDTH, DEPTH AND ARRANGEMENT TO SUIT REQUIREMENTS • SCALE ¼"=1'-0"

VARIOUS TYPES OF VITROLITE TOILET COMPARTMENTS

END OF IRON STRAP IN PARTITION SHOWING ATTACHMENT TO STILE

CHROMIUM PLATED METAL SLEEVE COVERING IRON PLATE

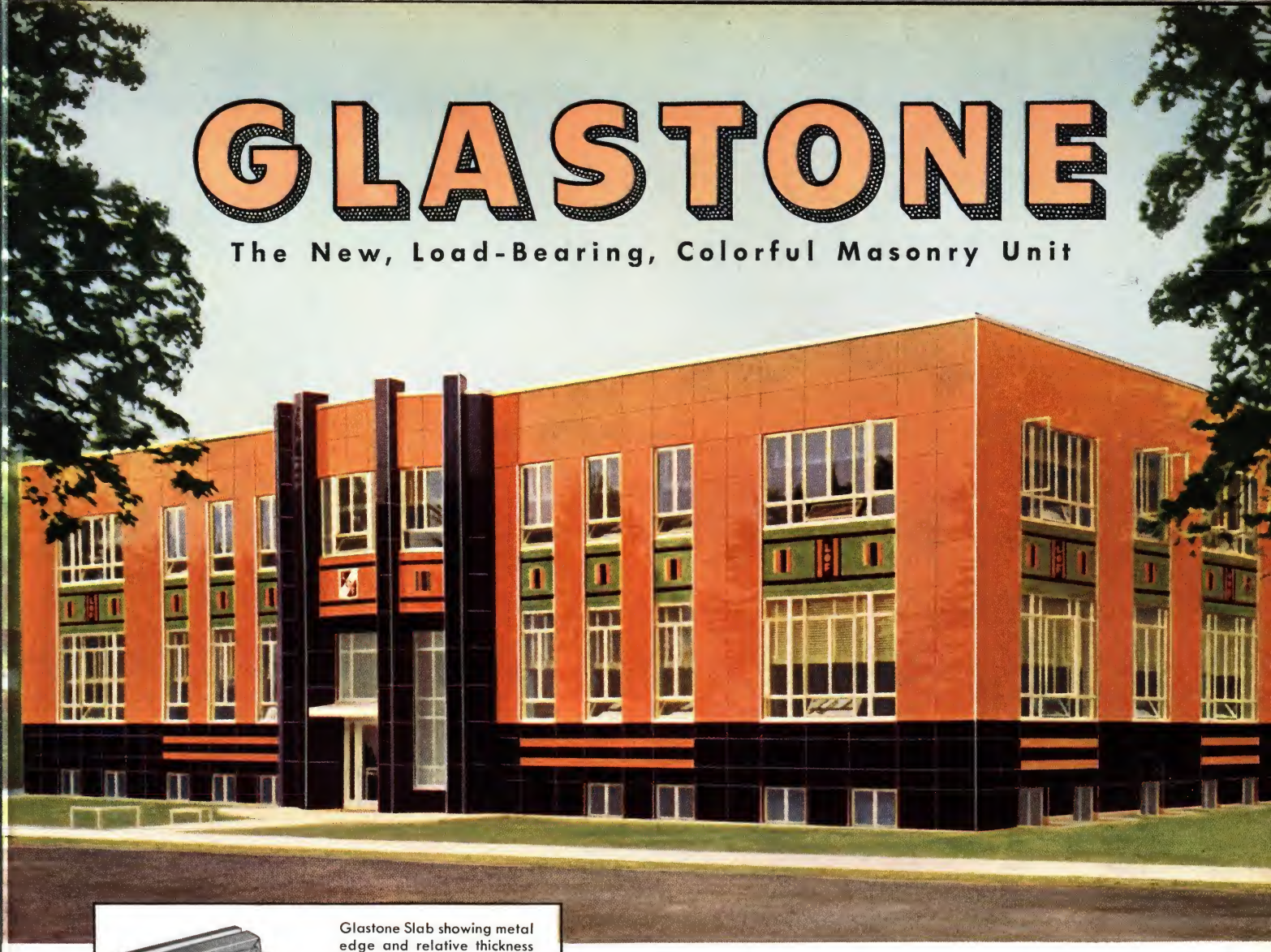


PAPER HOLDERS SHOWING OLD METHOD OF ATTACHMENT TO PARTITION. IT IS PREFERABLE TO ATTACH HOLDER TO BACK OF DOOR

WALL STILE — CENTER STILE AND PARTITION — END STILE

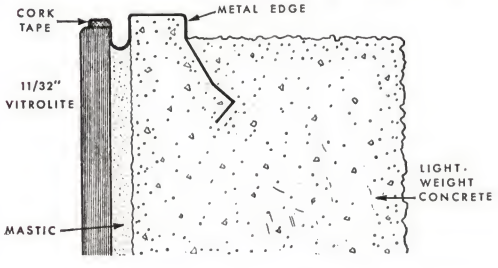
GLASTONE

The New, Load-Bearing, Colorful Masonry Unit





Glastone Slab showing metal edge and relative thickness of 4″ concrete-block.



Cross section diagram of Glastone Slab showing how metal edge is cast into the concrete-block to insure a permanent anchorage. Note cork tape and mastic which also contribute to the bond between the Vitrolite facing and concrete-block.

A very definite demand exists today for modern Structural Glass as a masonry unit to be built into and become an integral part of a building. This demand is met with Glastone—a new and important product of Libbey·Owens·Ford Glass Company.

Glastone is a specially prepared, lightweight concrete slab to which a permanent facing of colorful Vitrolite Structural Glass is bonded and mechanically anchored.

HOW INSTALLED—Glastone is used and installed like other masonry units with which you are familiar. No special tools are required. Any competent mason can install Glastone just as he installs units of limestone, granite, terra cotta or similar building materials. Glastone is set in cement mortar. Dowels in each slab assist in lining up. Glastone gives you in a practical form, the characteristic qualities of concrete plus the beautiful colors, lustrous surface, weather resistance and easy cleaning for which Vitrolite Glass is known everywhere.

HOW FORMED—The Vitrolite surfacing of Glastone is bonded to the concrete slab by a waterproof mastic. This mastic is applied under pressure, over the *entire* back surface of the Vitrolite, with 100%

GLASTONE — Vitrolite-faced Masonry Unit

coverage. It forms a secure bond between the Vitrolite facing and the concrete slab. This layer of mastic, approximately $\frac{1}{8}$" thick, also serves to take up any differences in expansion and contraction between glass and concrete.

METAL BINDER—To further secure the bond between the concrete slab and its Vitrolite facing, the Vitrolite is mechanically anchored to the concrete by a specially designed Metal Edge Binder which extends around the entire perimeter of the slab. This specially designed metal Binder has four important functions:

First—The back edge of the metal is crimped into the concrete, which is cast *after* the metal edge has been applied around the Vitrolite. This locks the metal edge into the concrete in the same manner that steel is anchored in reinforced concrete.

Second—The Metal Binder has a high flat shoulder $\frac{5}{8}$" wide which, in the finished slab of Glastone, is entirely backed by solid concrete.

This flat shoulder is the load-bearing point of the Metal Binder and extends $\frac{1}{32}$" higher than the part of the Metal Binder that comes in contact with the Vitrolite itself.

When Glastone is installed, the flat metal shoulders of the Metal Binders and the concrete portions of the Glastone slabs carry the entire load of the wall.

The Vitrolite facing of each Glastone slab is entirely free from pressure or load from any direction.

The flat, raised shoulder of the Metal Binder also serves as a separator between the mortar joint *behind* the shoulder and the caulked joint *in front* of it.

Third—The Metal Binder has a half-round groove at the mastic line. This construction offers a continual spring pressure by the Metal Binder on the Vitrolite facing, regardless of expansion or contraction. The groove also forms a "key" for the caulking compound in the joint and prevents the compound from easily being washed out.

Fourth—The front edge of the Metal Binder—the part in front of the shoulder that comes in contact with the Vitrolite facing—is lined with a continuous layer of cork tape $\frac{1}{16}$" thick.

When the Metal Binder is applied around the Vitrolite this cork tape prevents metal to glass contact. It also cushions the edge of the Vitrolite to protect it.

All edges of the Vitrolite facing are carefully ground. This gives the cork tape a high friction grip on the roughened edge of the glass.

This strong friction grip of the Metal Binder on the Vitrolite facing, plus the complete 100% mastic bond, securely fastens the Vitrolite facing to the concrete block.

If the face of Glastone is damaged after installation it can be replaced. (This is not true of most masonry units.) However, the damaged face must first be chipped off with a cold chisel—a further demonstration of the secure fastening of the glass to the concrete.

NOTE: The Metal Binder is made of pickled steel which is heavily cadmium plated, *after being formed and cut,* and is therefore *rust-proof.*

ENDURING BEAUTY—Glastone derives its lustrous beauty from the beauty of Vitrolite. Because it is *glass* and because



the rich colors of Vitrolite are a part of the material itself, the beauty of Glastone is an enduring beauty.

Weather has no effect upon glass, so weather has no effect upon Glastone. Soap and water alone will bring back the original freshness and beauty of a Glastone wall even after many years of exposure. An occasional cleaning will keep it like new.

COLORS—Glastone is a masonry unit that gives you the advantages of a *complete* color range.

Where the solid color required is not in the regular Vitrolite line, it can be matched with special colors of opaque L·O·F Vitrolux. For decorative effects, two or more colors may be combined on one Glastone slab—each color being separated from the other by a waterproof joint. Glastone offers you almost unlimited opportunity for the expression of colorful beauty in modern building design.

A SOLID, DURABLE LOOK—The finished Glastone wall has a look of great solidity. This is because the joints are about $\frac{1}{4}$ of an inch wide and when caulked, serve to give each Glastone block the appearance of massive solid masonry.

NO METAL SHOWS—The beauty of the finished Glastone wall is also enhanced by the fact that no part of the Metal Binder is exposed. As the Binder covers only the edge of the Vitrolite facing, extending to within $\frac{1}{16}$" of the exterior face, it is completely concealed when the caulking is completed.

CORNER CONSTRUCTION—Glastone exterior right-angle corners are pre-fabricated with a bead of extruded, alumalited aluminum. This bead has a quarter-round, exposed face flush with the glass surfaces, solidly cast into the concrete and is separated and cushioned from the Vitrolite facing by concealed cork tapes. It produces a dressy corner snap-line and also serves as protection.

"HAYDITE" CONCRETE—Glastone slabs are formed of a specially prepared lightweight concrete, using Haydite aggregate. Architects everywhere are familiar with Haydite and its advantageous properties and with the fact that it is universally accepted by building codes, in every section of the country.

GLASTONE — *Vitrolite-faced Masonry Unit*

GREATER STRENGTH—Building codes call for a compressive strength of 1000 pounds per square inch, over the gross area, for exposed masonry. Glastone concrete masonry tests 1500 pounds to 2000 pounds over the gross area. This gives a factor of safety of 1½ to 2 above requirements.

LIGHTER WEIGHT—Glastone weighs 90 to 100 pounds per cubic foot as compared to 145 pounds per cubic foot for cast stone or similar masonry materials. This means a saving in structural costs and also in transportation. Glastone is carried under the Fifth and Sixth Class freight rates.

FIRE RESISTANCE—Glastone is a fire-resisting masonry material. Vitrolite, metal and concrete are all incombustibles. Haydite concrete is frequently used to insulate high temperature furnaces.

INSULATION—Glastone offers two to three times as effective insulation as cast stone, brick or similar building materials. As an example, a Glastone Block 8 inches thick gives 10% better thermal insulation than the combination of 8″ thickness of solid brick with ½″ thickness of cork.

JOINT STRENGTH—Glastone concrete, (Haydite) has a natural affinity for mortar which develops a high joint strength.

MOISTURE-PROOF—Moisture is carried through brick and other masonry materials by capillary action. Glastone concrete (Haydite) is extremely low in capillarity. This quality, together with the water-proof qualities of Vitrolite and of caulked joints, when properly applied, makes a Glastone wall practically impervious to moisture penetration.

PLASTERING ON GLASTONE—Glastone concrete, as is true with mortar, has a strong bond with plaster. Plastering directly upon the back of Glastone is approved practice for interior walls. It will not only speed up the work but can make an important saving in the amount of plaster used.

GLASTONE SIZES—Glastone units can be furnished in sizes having a surface area up to 12 square feet.

In addition to plain ashlar units, special shapes and surface forms (of flat or bent Vitrolite) can be cast for spandrels, frieze courses, ornaments, etc.





Lettering and ornamentation may be applied at the factory and aluminum or other metal trim can be cast as an integral part of the Glastone slab.

Glastone is drilled at our plant to accommodate signs or other attachments, as specified.

THICKNESSES—Glastone slabs are fabricated in thicknesses from a minimum of 1½ inches to whatever thickness is required for the job.

Glastone may be cast to conform to steel members, lintels, window details, etc.

Where desired, Glastone is furnished in 8″ thickness to be used as a solid wall unit, the interior face providing a perfect base for plaster.

Glastone slabs of 1½″ or 2″ thickness are adaptable for new construction or remodelling work. For remodelling work these thinner units are anchored to a building by suitable anchors. These anchors may be fastened to concealed flanges cast in the back of the Glastone slab.

WHERE USED—Glastone provides a new masonry unit for exterior building surfaces where enduring color and long lasting surfaces are important.

It will improve the exterior appearance of
- Commercial and Public Buildings
- Fair and Exposition Buildings
- Gas Stations
- Municipal and Government Buildings
- Office and Factory Buildings
- Storefront Bulkheads
- Theatre Façades
- Tunnels, Subways, Swimming Pools.

Glastone is also an improved masonry unit for interior surfaces which may be installed with the wall construction in

- Lobbies of Office Buildings
- Commercial Buildings and
- Theatres and for
- Corridor Walls in Office Buildings
  - Public Schools, Post Offices and other Municipal Buildings.

SPECIAL NOTE—Glastone slabs provide an ideal material for the interior facing of Tunnels and Subways and form an excellent surfacing for Swimming Pools.

GLASTONE — Vitrolite-faced Masonry Unit

SPECIFICATIONS

GLASTONE FACING—Where shown on the drawings, the exterior wall face shall be GLASTONE. Where Glastone is specified, the Contractor shall furnish (and install) all Glastone properly marked, together with all loose metal dowels, bolts and anchors required to bond it to the backing. The Glastone, dowels, bolts and anchors shall be as distributed by Libbey·Owens·Ford Glass Company, Toledo, Ohio.

GENERAL—In general, the GLASTONE is to be .... inches thick, (see sections for deviations from this dimension) composed of a Vitrolite glass facing supported in a cork lined metal frame which is cast into a lightweight concrete backing with a mastic pad between the glass facing and the concrete backing. Metal dowel holes cast into the mortar bed faces of the concrete backing at templet locations are to be used as a means of anchoring, and to secure a plumb surface without winds. In setting the GLASTONE the mortar bed is to be confined to the concrete backing, and the space between the metal binder edges is to be reserved for later pointing with caulking compound.

The work under this division shall be governed by the General Conditions of the contract.

SCOPE OF WORK—This Contractor shall receive the GLASTONE and incidental anchorage materials at the site, store them safely, and furnish all labor, other materials such as mortar, caulking compound, etc., and services necessary and required for the erection of the GLASTONE as indicated on the drawings and herein specified.

In handling the GLASTONE the Contractor shall take especial care to avoid chipping and breakage of the Vitrolite facing or damage to the metal binder edge.

DRAWINGS AND DETAILS—Libbey·Owens·Ford Glass Company will furnish shop drawings and setting plans for the GLASTONE, showing sizes, sections and dimensions of the pieces, jointing, bonding, anchoring and all other necessary details. Copies of all setting plans used in setting the GLASTONE shall bear the Architects' written approval. Each piece of the GLASTONE will have a setting number.

CLEANING, SETTING AND POINTING—This Contractor shall unload, receipt for, and protect and erect all GLASTONE covered by this specification, setting and anchoring it in accordance with the requirements of the setting plans.

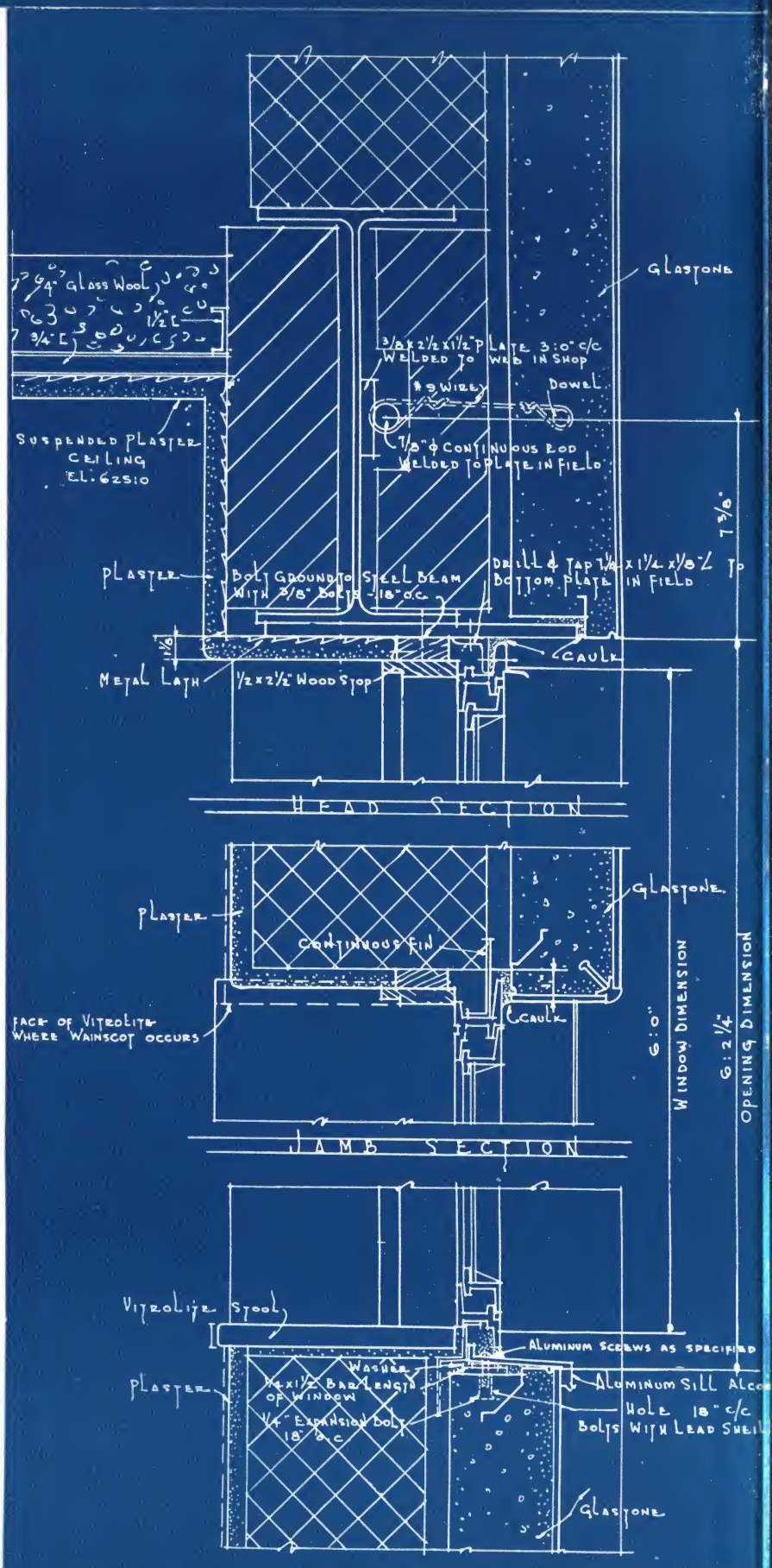
All GLASTONE shall be set in mortar similar to that specified under the heading Brick Masonry, and all surfaces of the concrete backing of the GLASTONE blocks shall be sponged well with clean water just before setting. The use of pinch bars except on unexposed surfaces is strictly prohibited. Each unit shall be set accurately, true to line, level and plumb by competent workmen on a full and even bed of mortar covering the entire edge surface of the concrete backing. Head joints shall be similarly filled with mortar to the full thickness of the concrete backing. Any mortar that flows from the joint into the space between the metal binder edges of the blocks shall be raked out immediately. A uniform joint space 3/16" thick for caulking between the metal binder edges shall be maintained by adjusting the mortar bed thickness to suit.

(The dowel locations are to assist the Contractor in lining up his work. Care is to be taken to maintain the specified joint thickness between the metal binder edges.)

Each GLASTONE unit shall be adjusted on its bed by pressing in place or striking the concrete backing with a wooden mallet. Wood wedges may be used but must be used on the back side only. Before pointing, all face joints between metal binder edges shall be cleaned by brushing or blowing with compressed air to remove deposited grime and dirt.

The face joints between the metal binder edges shall then be carefully and neatly pointed to a sufficient depth to reach the groove and form key. All caulking to be done to the satisfaction of the architects with caulking compound colored to match the Vitrolite facing. The caulking compound shall be an approved brand of gun grade caulking compound. This material shall be packed solidly into the joints with a caulking gun, and any excess material on the surface shall be carefully wiped off the surface to provide a neat, even and clean finish of the joint. The building face shall then be washed clean with soap and water, using soft cloths. *Steel wool, metal scrapers, or any other mechanical method likely to scratch the glass surface shall not be used.*

SALES AND DISTRIBUTION—Glastone is distributed by Libbey·Owens·Ford Glass Company exclusively. All inquiries should be directed to Libbey·Owens·Ford Glass Company, Nicholas Building, Toledo, Ohio. All plans and specifications should be sent to the same address. Shop drawings and setting plans will be furnished by Libbey·Owens·Ford Glass Company. Further information will be promptly supplied.



STANDARD VITROLITE COLORS



WHITE



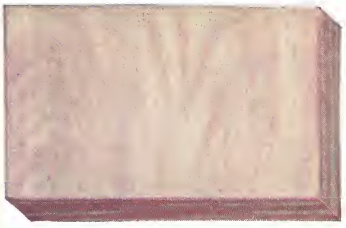
PRINCESS BLUE



GRAY



IVORY



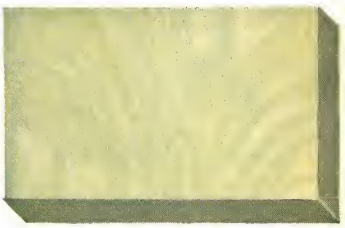
ORCHID AGATE



ROYAL BLUE AGATE



YELLOW



JADE AGATE



SUN TAN



WALNUT AGATE



EMERALD AGATE



JADE



CADET BLUE



BLACK



TROPIC GREEN



RED

THIS chart illustrates standard Vitrolite colors and the principal decorative processes. The agate colors will show a considerable variety in color and amount of veining. The illustrations represent a medium shade. Emerald Agate, Walnut Agate, and Royal Blue Agate are furnished in light, medium, and dark shades. Shade desired should be specified when ordering. There will also be a slight variation in other colors. Samples will be furnished upon request.

The Libbey·Owens·Ford Glass Company owns and operates eight factories. They are strategically located at Toledo, Ohio; Rossford, Ohio; Charleston, W. Va.; Parkersburg, W. Va.; Ottawa, Ill.; and Shreveport, La. Leading glass jobbers, conveniently located throughout the United States distribute the products of these plants. Direct factory sales representatives to serve efficiently the architectural profession are located in New York, Boston, Atlanta, Minneapolis, Chicago, Philadelphia, Kansas City, Denver, Detroit, Shreveport, Buffalo, San Francisco, Los Angeles, Cincinnati, Seattle, Richmond and Washington, D. C. The executive offices of the company are located at Toledo, Ohio.

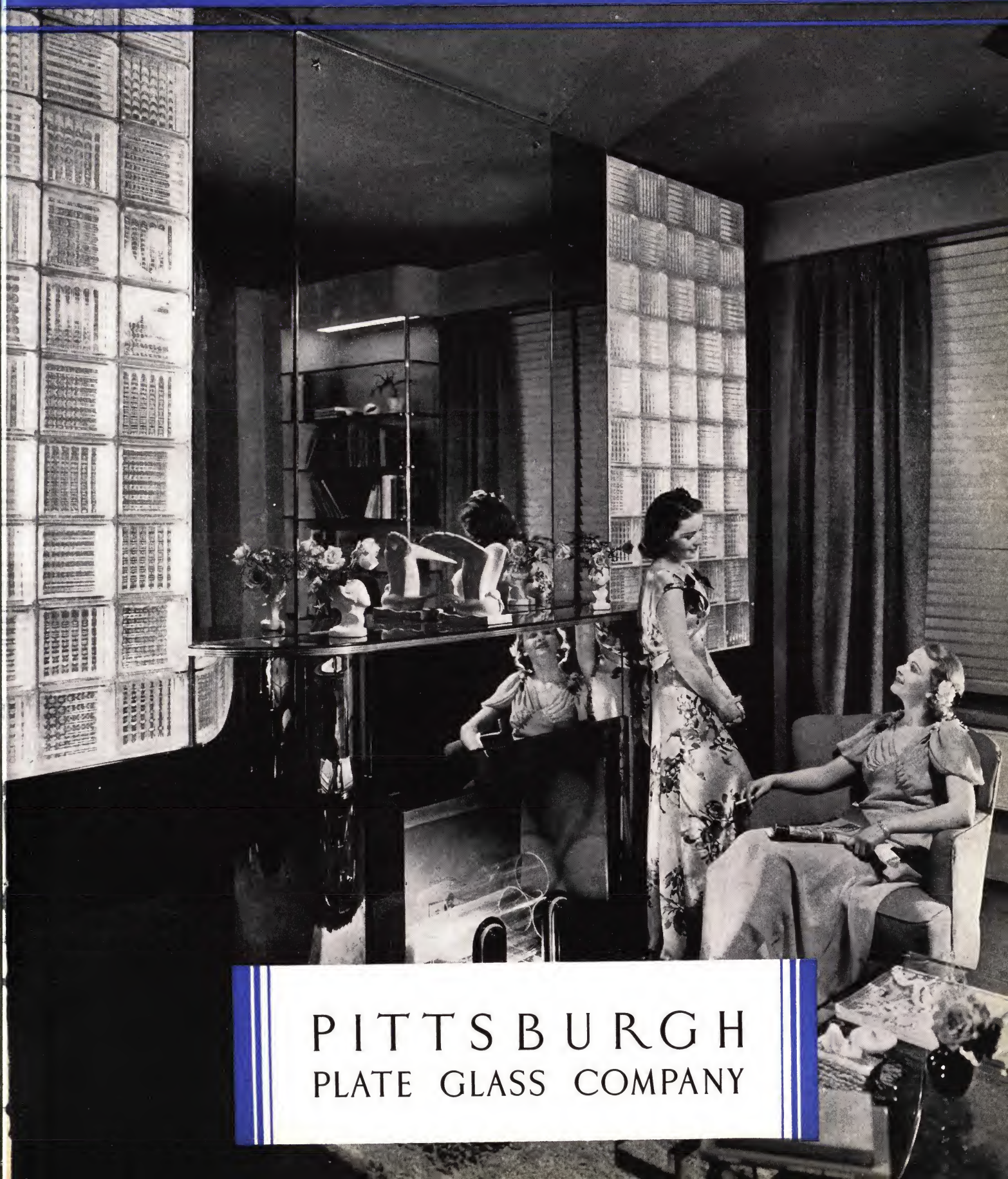
LIBBEY • OWENS • FORD GLASS COMPANY

NICHOLAS BUILDING, TOLEDO, OHIO

VITROLITE
A LIBBEY • OWENS • FORD PRODUCT

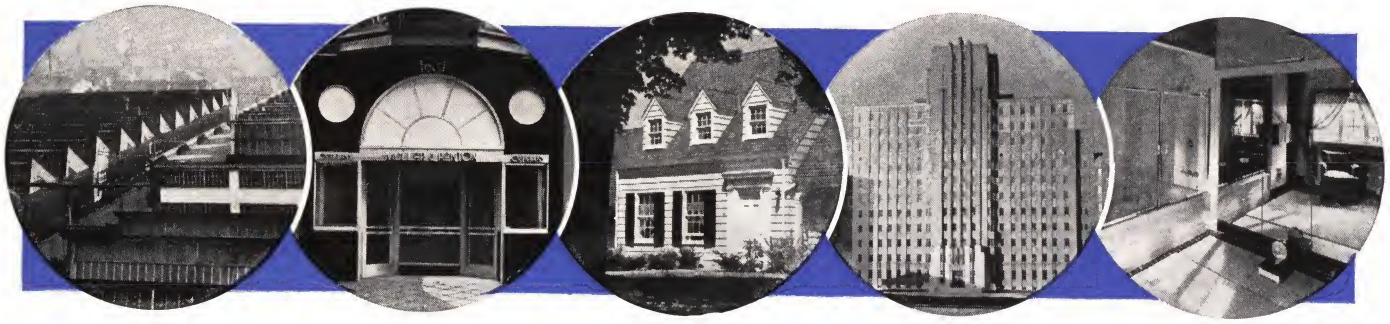

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GLASS PRODUCTS



PITTSBURGH
PLATE GLASS COMPANY

PITTSBURGH MAKES 18 OUTSTANDING . .



The Pittsburgh Plate Glass Company is the largest manufacturer of flat glass products in the world. Included among Pittsburgh Glass Products are all the types commonly used for glazing and decoration, as well as many special glasses for special architectural purposes. This manufacturer, in more than half a century of glass making, has developed the most modern and efficient production methods and machinery, has integrated its facilities and operations so successfully that it has established an unusually high standard of quality in all Pittsburgh Glass Products. This consistent high quality explains the enviable reputation won by Pittsburgh Plate Glass Company in the building trades.

What Pittsburgh's Exhaustive Research in Glass Making Means to the Architect

Since its founding, this company has been a pioneer in glass research and development. Its resources have been expended generously to improve old glass products and develop new ones. As a result the architect of today has better glass to work with, and a far wider variety of glass products to assist him in creating buildings more beautiful, useful and durable than ever before.

Pittsburgh Service Is Available for Consultation, Planning and Installation

It has always been the endeavor of the Pittsburgh Plate Glass Company to co-operate to the fullest extent with the architectural profession. To this end, we maintain a special staff of architectural representatives, whose whole duty consists in rendering the architect every assistance possible in connection with the use of glass and paint. And our staff of store front experts is maintained to serve the architect in matters concerning the styling and installation of modern store fronts. We extend a cordial invitation to all architects to take advantage of these services at any time.

Pittsburgh Glass Data Service

This service was recently inaugurated by the Pittsburgh Plate Glass Company to meet a definite need . . . the need for some adequate method of keeping the architectural profession constantly informed on glass in its many forms and applications. The Pittsburgh Glass Data Service consists of direct mailings of data on glass to the recipients of Sweet's Catalog File for the Building Market. When new glass products are developed . . . when new catalogs of information on various products become available . . . when detail drawings or recommended installation methods are worked out . . . when new data on glass uses, glass applications, glass design are published . . . the Pittsburgh Glass Data Service places them in your hands immediately.

Extensive Advertising Has Sold Clients on Pittsburgh Glass

This Company has consistently supported a comprehensive advertising program to acquaint clients and prospective clients of the architect with the qualities and possibilities of Pittsburgh Glass Products. The public familiarity with our glass and its excellence, results in a readier approval of architects' designs and specifications when Pittsburgh Glass is used.

Prominent Installations and Repeat Orders Prove Excellence of Pittsburgh Glass Products

Pittsburgh Glass Products have been used in every type of building, for all glazing and decorative purposes, in outstanding installations throughout the country. A list of the finest modern edifices constructed in the United States would be, to a large extent, a list of buildings in which Pittsburgh Glass Products of some description have been used. And a roster of America's finest architects, standing for architectural achievement of the best kind, would practically be a roster of architects who have specified Pittsburgh Glass not once . . . but again and again and again. This preference for Pittsburgh Glass in the nation's outstanding buildings, this repeated specification of Pittsburgh Glass by architects whose reputations depend not only on their creative genius but also their judgment of materials, is the best proof that could be had of the excellence and satisfactory performance of Pittsburgh Glass.

OTHER PRODUCTS OF THE COMPANY

Pittsburgh Plate Glass Company, in addition to the products described in this catalog, also manufactures paints and varnishes of all kinds, Pittco Store Front Metal, and Seloc Glass Chalkboard (see sections in SWEET'S on Pittsburgh Paints, Pittco Store Front Metal and Seloc Glass Chalkboard); and serves as distributing agent for Carrara Structural Glass, PC Glass Blocks and PC Architectural Glass which are manufactured by the Pittsburgh Corning Corporation (see sections in SWEET'S on Carrara Structural Glass, PC Glass Blocks and PC Architectural Glass).

Paint . PITTSBURGH . Glass
PLATE GLASS COMPANY

General Offices GRANT BUILDING • PITTSBURGH, PA.

• *For list of warehouses and map showing warehouses and factories see back cover*

PRODUCT	QUALITIES	THICKNESSES	MAX. SIZES	WEIGHTS	STRENGTH	COLORS	FINISH	PAGE
Polished Plate Glass	Silvering Mirror Glazing Glazing	1/8" 13/64" 1/4"	1/8" 72x123 13/64" 123x216 1/4" 160x220 150x260	1/8" 1.75 lbs. [] 13/64" 2.67 lbs. [] 1/4" 3.29 lbs. []	Tension 6500 lbs. [] Compression 36000 lbs. [] Modulus Elasticity 10,000,000	Clear	Ground and Polished	4
Vista Plate Glass	Silvering Mirror Glazing Glazing	9/64" to 9/64"	72x123 (Sizes over 7 [] not recommended for exterior glazing)	1.75 lbs. []	In direct proportion to the square of the thickness	Clear	Ground and Polished	6
Heavy Plate Glass	Commercial Selected	3/8" 1/2" 5/8" 3/4" 7/8" 1" 1-1/4"	3/8" to 1/2" 72x160 5/8" to 1" 72x130 1-1/4" 70x130	3/8" 4.93 lbs. [] 1/2" 6.58 lbs. [] 5/8" 8.22 lbs. [] 3/4" 9.67 lbs. [] 7/8" 11.52 lbs. [] 1" 13.16 lbs. [] 1 1/4" 16.45 lbs. []	In direct proportion to the square of the thickness	Clear	Ground and Polished	6
Blue Plate Glass	Selected only	13/64"	72x123	2.67 lbs. []	Same as regular plate glass	Blue	Ground and Polished	7
Flesh Tinted Plate Glass	Selected only	13/64"	72x123	2.67 lbs. []	Same as regular plate glass	Flesh Tinted	Ground and Polished	7
Crystalex Plate Glass	Silvering Glazing	7/64" 1/4"	123x216	7/64" 1.44 lbs. [] 1/4" 3.25 lbs. []	Same as regular plate glass	Water White	Ground and Polished	7
Solex Plate Glass	Glazing only	1/4"	72x123	3.29 lbs. []	Same as regular plate glass	Bluish Green	Ground and Polished	8
X-Ray Lead Glass	Glazing only	5.35 to 7.35 m/m	40x72	5 1/2 lbs. []	Approximately 2/3 as strong as plate glass of equal thickness	Golden Yellow	Ground and Polished	9
Herculite	Same as glass before tempering	Same as glass before tempering	48x108	Same as glass before tempering	Approximately 4 times that of glass of equal thickness which has not been tempered	Same as glass before tempering	Same as glass before tempering	8
Multiplate Bullet-Resisting Plate Glass	Commercial	1/2" minimum 3/4" minimum 7/8" minimum 1" minimum Super 1 1/8" minimum Hi-Resist 1 1/2" minimum Hi-Power 2" minimum	45x84	1/2" 6.91 lbs. 3/4" 10.30 lbs. 7/8" 11.90 lbs. 1" 13.57 lbs. 1 1/8" 15.23 lbs. 1 1/2" 21.70 lbs. 2" 27.11 lbs.	For recommendations of protection against various firearms, see Page 9	Clear	Ground and Polished Plate Glass laminated	9
Pittsburgh Mirrors Regular Copper-Back Structural	Silvering Mirror Glazing Glazing	Fabricated from any thickness of glass	Regular— Up to maximum glass size Copper-Back and Structural 70x144	Approximately same as plate glass	Approximately same as plate glass	Plain, Blue Flesh, Water White, Blue-Green	Silver, gold or gun-metal backing on any color glass	10
Tapestry Glass	Glazing	3/16" 1/4"	60x144	3/16" 2.87 lbs. [] 1/4" 3.68 lbs. []	Equal to or greater than that of regular plate glass	Translucent Semi-Opaque	Plain 3/16" and 1/4 Polished 1/4" only	10
Pennvernon Window Glass	AA-A-B Greenhouse Picture Heavy Sheet	Single Strength .087 - .095 Double Strength .118 - .133 Heavy Sheet 3/16" - .187 to .200 7/32" - .212 to .225	Heavy Sheet 3/16" up to 50 [] 7/32" up to 60 []	Picture 16 oz. [] S.S. 19 oz. [] D.S. 26 oz. [] 3/16" 40 oz. [] 7/32" 45 oz. []	Same as plate glass of equal thickness	Clear	Fire-finished	11
No. 1086 Document Glass	Glazing only	1/4"	40x72	5 1/2" lbs. []	Approximately 2/3 as strong as plate glass of equal thickness	Canary Yellow	Ground and Polished	9
Seloc Glass Chalkboard	Selected	11/32"	Heights: 36"—48" Lengths: 36"—72"	4.8 lbs.	Approximately same as regular plate glass	Black	Honed	See Pittsburgh Plate Glass catalog on *Seloc* in Sweet's
PC Glass Blocks (Mfgd. by Pittsburgh Corning Corp.—Dist. by Pittsburgh Plate Glass Company)	Selected	3 7/8" (hollow)	Actual sizes: 5 3/4"x 5 3/4" 7 3/4"x7 3/4" 11 3/4"x11 3/4"		See Pittsburgh Corning catalog on PC Glass Blocks in SWEET'S	Clear	Moulded	See Pittsburgh Corning catalog on *PC Glass Blocks* in Sweet's
PC Architectural Glass (Mfgd. by Pittsburgh Corning Corp. Dist. by Pittsburgh Plate Glass Company)	Selected	Varies with the piece	Varies	Varies with the piece		Clear	As desired	See Pittsburgh Corning catalog on *PC Architectural Glass* in Sweet's
Carrara Structural Glass (Mfgd. by Pittsburgh Corning Corp. Dist. by Pgh. Plate Glass Co.)	Selected	Standard colors 11/32" - 7/16" - 3/4" - 7/8" - 1 1/4" Black also in 1/4"	72x130	1/4" 3.29 lbs. [] 11/32" 4.5 lbs. [] 7/16" 5.76 lbs. [] 3/4" 9.87 lbs. [] 7/8" 11.51 lbs. [] 1 1/4" 16.45 lbs. []	Approximately same as regular plate glass	Jade, Ivory, Gray, White, Black, Wine, Rembrandt Blue, Orange and Forest Green (All Opaque)	Ground and Polished one side. 7/8" and 1 1/4" also polished both sides	See Pittsburgh Corning catalogue on *Carrara* in Sweet's



POLISHED PLATE GLASS

The Aristocrat of the Transparent Flat Glass Family

Polished Plate Glass is ground and polished, mechanically, to a true, flat surface and a perfect brilliance and reflectivity of finish. It is the finest material available for exterior and interior glazing and should be used wherever clarity of vision, beauty and dignity are desired. Objects viewed through polished plate glass, or reflected from it, are undistorted and perfectly natural in shape, form and outline. It imparts to buildings in which it is used a brilliance and luster, a distinction and charm, that enhances their appearance and adds immeasurably to their rental and sales value.







Physical Characteristics

QUALITIES	THICKNESSES	MAX. SIZES	WEIGHTS
Silvering	1/8"	1/8" 72x123	1/8" 1.75 lbs. [|]
Mirror		13/64" 123x216	13/64" 2.67 lbs. [|]
Glazing	13/64"	1/4" 160x220	1/4" 3.29 lbs. [|]
Glazing	1/4"	150x260	

STRENGTH	COLORS	FINISH
Tension 6500 lbs. [|] Compression 36000 lbs. [|] Modulus Elasticity 10,000,000	Clear	Ground and Polished

UNITED STATES GOVERNMENT

CLASSIFICATION

Polished Plate Glass: silvering quality, glazing quality.

DEFINITIONS OF THE GENERAL CLASSES OF POLISHED PLATE GLASS

Plate Glass—Transparent, flat, relatively thin glass having plane polished surfaces and showing no distortion of vision when viewing objects through it at any angle.

Plate Glass is made at present by casting and rolling large sheets periodically or by rolling a continuous sheet. The sheets are then ground and polished.

DETAILED SPECIFICATIONS OF POLISHED PLATE GLASS

General Principles Involved in Grading Glass—All flat glass contains some imperfections and the principle employed in grading is to exclude all defects that would be objectionable in a given grade. This is difficult to do since there are no sharp lines of demarcation between grades, and experienced inspectors will differ in judgment as the quality of the glass approaches the limits of the grades. Small lights must be quite free from imperfections, as compared with larger ones, and the center of any sheet should be clear, whereas the edges may contain more pronounced defects.

Method of Examination—The method of examination is described in these specifications in order to make the results more uniform, and defines the condition under which glass should be examined because the distance from the glass, the angle between the glass and the line of sight, and the intensity of light all affect the visibility of imperfections.

These specifications should be interpreted by examining the glass in the following manner, with reference to the definitions of defects listed in the glossary:

The glass should be examined when placed in a position similar to that of a glazed light with the observer's eye on a level with the center of the sheet, and looking through the glass from a distance of about 36 in. into the light from a clear sky without any sun or any close background.

The visibility of waves, lines or cords depends chiefly upon the angle of observation, and the intensity of these defects can be classified on this basis. The values given for angles are the angles the line of sight makes with the sheet of glass when in a vertical position. Slight movement of the head horizontally through an angle of two or three degrees will make waves or lines more perceptible.

Acceptance or Rejection—Acceptance or rejection of a shipment or delivery shall be based on an examination of the following quantities:

For orders of 100 lights or less, all shall be examined; for orders of 101 to 500 lights, at least 50% shall be examined; for orders of 501 or more lights, at least 25% shall be examined. Boxes shall be selected from the shipment at random.

If not more than 10% of the lights examined are below quality, the shipment shall be accepted provided the lights below the specified grade are not distinctly below the upper limits of the next lower grade.

If, however, an entire shipment of 500 lights or more is examined, not more than 5% may be below quality.

• *For list of warehouses and map showing warehouses and factories see back cover*

SPECIFICATIONS FOR PLATE GLASS FOR GLAZING PURPOSES

SPECIFICATIONS FOR POLISHED PLATE GLASS

Sizes and Thicknesses—The standard of thicknesses of plate glass shall be 1/8, 3/16, 1/4, 3/8, 1/2, 5/8, 3/4, 7/8, 1 and 1 1/4 in. Sheets are available 1/4 in. thick in sizes having a maximum area of 250 sq. ft. Glass of 1/4 in. thickness may be furnished having almost any desired dimension under the following maximums: 120x280 in., 144x260 in., 160x240 in.

Tolerance in Thicknesses—The maximum and minimum thicknesses allowed shall not be more than given thickness plus or minus one-half the difference between the standard thicknesses. The general variation in thickness should not be more than 1/32 in. for individual lights under 10 square feet in thicknesses up to 1/4 in. The variation in lights over 1/4 in. in thickness should not exceed one-half the total tolerance for that thickness.

Polished plate glass 1/4, 1/8 and 3/16 in. thick is carried in stock in the larger cities.

Tolerance in Dimensions—Variation from dimensions ordered shall not be more than 1/32 in. per 1/8 in. thickness.

Grades—Plate glass shall be furnished for glazing purposes in one of two grades as specified. These grades will be known as silvering and glazing qualities.

Silvering quality is invariably used where the highest standard of glazing is required and imperfections are discoverable only in close inspection. This quality is rarely sold for glazing purposes in sizes over 20 sq. ft. Glazing quality represents the usual selection of plate glass supplied when quality is not otherwise definitely specified.

As allowable tolerances in quality must vary considerably with size of sheet required, different specifications will apply in each of the following four divisions according to size:

Division I. Sheets up to and including 10 sq. ft. in area.

Division II. Sheets having an area greater than 10 sq. ft. but not greater than 25 sq. ft.

Division III. Sheets having an area greater than 25 sq. ft. but not greater than 75 sq. ft.

Division IV. Sheets having an area greater than 75 sq. ft.

Division I. (Sizes Up to and Including 10 Sq. Ft.)—*Silvering Quality*—This glass shall not contain any major defects. The central area of this glass may contain only well scattered seeds. Ream, skim, short finish, and scratches which cannot be removed by buffing, are not permissible. The edges may contain coarse seeds, but none shall be larger than 1/32 in. in diameter.

Glazing Quality—The central area of this quality may contain numerous scattered seed, including an occasional coarse seed, but no heavy seed. Small bubbles may occur on the edge. Stones, large bubbles, skim, ream, or long or heavy scratches are not permissible. Faint strings in the corners or upper edge of the light are permissible. The polish shall not show areas of short finish.

Division II. (Sizes from 10 Sq. Ft. to 25 Sq. Ft., Inclusive)—*Silvering Quality*—The central area of this quality may contain more numerous fine seed than the small sizes and an occasional coarse seed. The edges may contain occasional small bubbles and fine strings. No heavy defects or scratches which cannot be removed by buffing are permissible. The polish must be good and free from visible short finish.

Glazing Quality—The central area may contain small bubbles and fine strings or ream which do not give visible distortion when looking straight through the glass, but no long or heavy scratches. The edges may contain bubbles over 3/32 in., visible scratches shorter than 10 in., small areas of ream, strings, and small stones not larger than 1/32 in., but these defects should not be grouped nor interfere with the vision. The polish over the central area should be good, but patches of light short finish may be present about the edges.

General—None of the above grades or sizes may contain any heavy or long lines, streaks of ream, any bubbles, larger than 1/8 in., visible poor polish, open bubbles, areas of skim, or stones over 1/32 in. in diameter.

Division III. (Sizes from 25 Sq. Ft. to 75 Sq. Ft.)—*Glazing Quality*—Lights of this size may contain numerous visible and larger imperfections not allowed in the smaller lights. But these must not be grouped or so prominent that they noticeably interfere with the vision. The central area of the plate shall be free from these larger defects.

The sheets may contain seed of any size, but not heavy seed except in relatively small patches on the outer border of the sheet, occasional bubbles up to 1/8 in. in the center and up to 3/16 in. on the borders, strings, ream and skim in very limited areas if not causing a deformation of objects viewed through the plate, occasional scratches and small stones under 1/16 in.

Heavy ream, heavy cord, bubbles larger than 3/16 in. in diameter, stones larger than 1/16 in. in diameter, large fire cracks, areas of unpolished glass, easily visible poor polish, large open bubbles, or sand holes, are not permitted. The large defects should be confined to the upper edge and upper corners of the sheet, the lower and central areas to be relatively free from major defects.

Division IV. (Sizes Greater than 75 Sq. Ft.)—Sheets larger than 75 sq. ft. may contain defects of almost any kind except that they must not show large areas of heavy seed or bubbles nor have any defects which will cause spontaneous breakage, such as skim or large stones (1/8 in. in diameter) or show any areas of unpolished glass.

GLOSSARY OF TERMS USED IN THESE SPECIFICATIONS

The following terms shall be used in specifications:

Plate Glass—Seeds, short finish, skim, strings, scratches, bubbles, open bubbles, ream, stones, fire cracks, sand holes.

Bubbles—Gas inclusions in any rolled glass. These inclusions are practically always spherical and brilliant in appearance. The term applies to all such inclusions larger than 1/32 in. in diameter. The term small bubbles (commonly known as boil) refers to sizes between 1/32 in. and 3/32 in.

Seeds—Minute bubbles less than 1/32 in. in diameter. Fine seeds are visible only on close inspection, usually appearing as small specks and are an inherent defect in the best quality of plate glass. Seeds about 1/64 in. to 1/32 in. in diameter are usually considered as coarse seeds.

Open Bubbles—Bubbles which have been broken into by grinding, leaving a hemispherical hole in the glass surface.

Skim—Streaks of dense seed with accompanying small bubbles.

Strings—Wavy, transparent lines appearing as though a thread of glass had been incorporated into the sheet.

Cords—Heavy strings incorporated in the sheet, occurring without any regularity of direction, and appearing to be of considerable thickness rather than on the surface.

Ream—An area of unhomogeneous glass incorporated in the sheet producing a wavy appearance.

Scratches—Any marking or tearing of the surface appearing as though it had been done by either a sharp or rough instrument. Scratches occur on sheet glass in all degrees from various accidental causes.

Short Finish—Insufficient polish or lack of brilliancy; improperly finished surface which has the appearance of being slightly pitted and wavy when the surface is viewed in reflected light. These indentations, which are slight, have a polished rather than a ground surface, but the general effect is a slight dulling of the surface. Poor polish is usually caused by improper grinding.

Stones—Any opaque or partially melted particle of rock, clay or batch ingredient imbedded in the glass.

Fire Cracks—Small cracks penetrating the surface of the sheet. Usually in the shape of short-hooked crescents. Caused by sudden heating or chilling of the surface.

Sand Holes—Rough spots on the polished surface produced during coarse grinding which fine grinding did not later remove; due, to some extent, to coarse grains of grinding sand becoming mixed with finer grades.

Central Area of Sheet—This term is used with slightly different interpretation with reference to plate or window glass. In plate glass the central area is considered to form an oval or circle centered on the sheet whose axes or diameters do not exceed 80% of the over-all dimension. This allows a fairly large area at the corners, which may have imperfections not allowed in the central area.

For complete Architectural Specifications see page Three ●





VISTA PLATE GLASS

Thin Plate Glass for General Glazing Purposes

Vista Plate Glass was developed to meet a definite need in the building industry . . . the need for a fine plate glass which could be used for general glazing, but which would be low enough in cost to warrant wide use, and which could be glazed in standard sash with standard sash weights.

Has Advantages of Heavier Plate Glass

Vista Plate Glass meets these requirements. It has all the visual advantages of heavier plate glass. High polish on both surfaces, with the accompanying intrinsic beauty of brilliant luster and reflection. Absolute freedom from distorting defects, with consequent ability to transmit with perfect clarity all objects seen through it. And sufficient strength and durability to assure permanence when it is used in residences or other buildings.

Increases Resale Value of Houses

The building glazed with Vista Plate has a greater resale value which more than offsets the slight extra cost of Vista Plate over ordinary window glass. Vista Plate is glazed in standard 1⅜ in. sash with ordinary sash weights.



Physical Characteristics

QUALITIES	THICKNESSES	MAX. SIZES	WEIGHTS
Silvering Mirror Glazing Glazing	6/64″ to 9/64″	72x123 (Sizes over 7 sq. ft. not recommended for exterior glazing)	1.75 lbs. [ ]

STRENGTH	COLORS	FINISH
In direct proportion to the square of the thickness	Clear	Ground and Polished

HEAVY PLATE GLASS

A Practical Decorative Medium for a Hundred Uses

Heavy Plate Glass is a material that the architect will find particularly helpful in modern design and decoration. Only the architect's imagination limits the possibilities for the effective use of this striking and diffusing material.

Clear, Brilliant, Impervious, Strong

It is clear and affords excellent vision. It has brilliant and mirror-like smoothness of surface which only fine plate glass can offer. It is impervious to moisture, weather, cleaning chemicals, pencil marks and other disfiguring agents. It is easily cleaned. And above all, while possessing the strength that protects and endures, it also lends to the furniture or fixtures in which it is the dominant material a beauty, dignity and modern touch which perhaps no other medium can offer.

Specific Uses

A few of the uses in which Heavy Plate Glass has proved eminently successful are: Book Shelves, Decorative Panels and Partitions, Shower Bath Enclosures, Bank Fixtures (Deal Plates), Glass Roofs, Glass Flooring, Porte Cochere Roofs, Skylights, Semi-enclosed Telephone Booths, Theater Marquises, Valances, Lighting Fixtures, Radio Acoustic Chambers, Refrigerator Doors, Show Cases, Soda Fountain Counters, Aquariums, Aquatic Tanks, Bulkheads, Counter Tops, Table Tops, Modernistic Furniture, Shelves and Mausoleums.

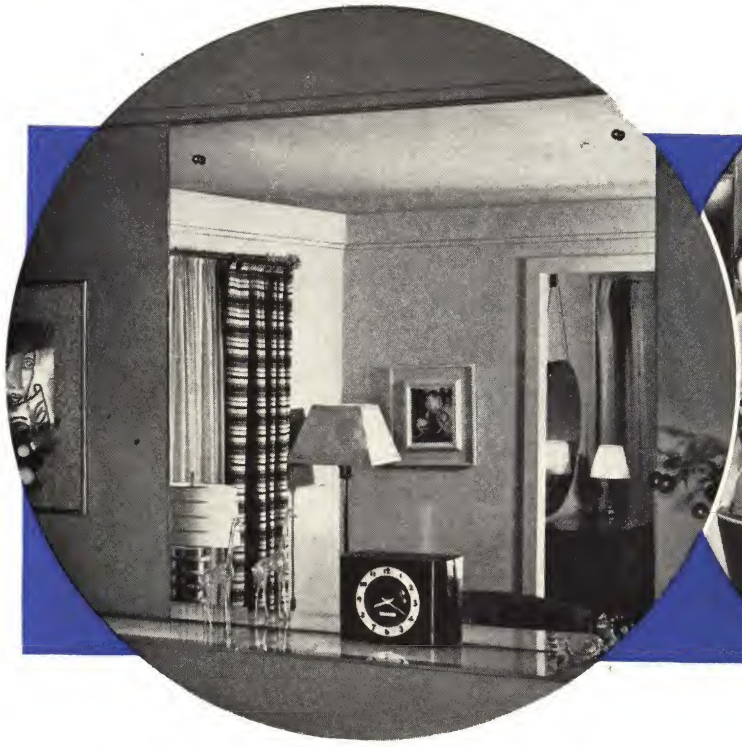


Physical Characteristics

QUALITIES	THICKNESSES	MAX. SIZES	WEIGHTS
Commercial Selected	3/8″ 1/2″ 5/8″ 3/4″ 7/8″ 1″ 1¼″	3/8″ to 1/2″ 72x160 5/8″ to 1″ 72x130 1¼″ 70x130	3/8″ 4.93 lbs. [ ] 1/2″ 6.58 lbs. [ ] 5/8″ 8.22 lbs. [ ] 3/4″ 9.67 lbs. [ ] 7/8″ 11.52 lbs. [ ] 1″ 13.16 lbs. [ ] 1¼″ 16.45 lbs. [ ]

STRENGTH	COLORS	FINISH
In direct proportion to the square of the thickness	Clear	Ground and Polished

• *For list of warehouses and map showing warehouses and factories see back cover*





BLUE AND FLESH TINTED PLATE GLASS

For Striking Decorative Effects

Flesh Tinted Plate Glass

Flesh Tinted Plate Glass is a medium becoming increasingly popular with architects to assist in obtaining decorative effects. This glass approximates in color the shading commonly found in the skin of a Caucasian person. The color is slight in surface section, considerably stronger in transverse section. Used in mirrors, Flesh Tinted Plate Glass produces reflections which minimize blues and violets and emphasize flesh colors, thus offering flattering images.



Blue Plate Glass

Blue Plate Glass, another popular product of the PITTSBURGH PLATE GLASS COMPANY, is a glass of rich blue color, ideal for decorative use in modern building. Like Flesh Tinted Plate Glass, this Blue Plate Glass is extraordinarily attractive when fabricated into mirrors.



Specific Uses

Flesh Tinted Mirrors or Blue Mirrors can be used with great success in home decoration to add color, warmth and sparkle to all types of rooms. They also are exceedingly ornamental in bars, stores, and public and commercial buildings of all sorts. Both types of Plate Glass also serve very well as unusual table tops, desk tops, book shelves, sill covers, etc.

Physical Characteristics

QUALITIES	THICKNESSES	MAX. SIZES	WEIGHTS
Selected only	13/64"	72x123	2.67 lbs. [ ]

STRENGTH	COLORS	FINISH
Tension 6500 lbs. [ ] Comp. 36,000 lbs. [ ] Modulus Elasticity 10,000,000	Blue and Flesh	Ground and Polished

CRYSTALEX PLATE GLASS

For Faithful Transmission of Natural Colors

Crystalex Plate Glass was developed primarily for use in multiple-glazing, as in refrigerator cases, and in double-glazing of windows for purposes of insulation and air conditioning. This is the only type of glass so far developed which does not effloresce or "bloom" when hermetically sealed with an air space between two sheets.

Water White Glass, Colorless in Surface and Transverse Sections

Crystalex Plate Glass is a true water white glass, colorless both in surface and in transverse section. Since its transmission value for all the colors of the spectrum is very nearly uniform (88% to 92%), its transmission of the violet and blue light rays is much higher than that of ordinary plate glass. And as a result it is able to transmit very faithfully the natural colors of objects seen through it without changing the relative intensities of the colors, no matter how delicate the differentiation of tone and shade may be.



Specific Uses

Architects will find this glass excellent also for use in display cases of all kinds, and in mirrors where it is desired to obtain as nearly true reflections as possible, such as in dress shop and beauty shop interiors, etc.

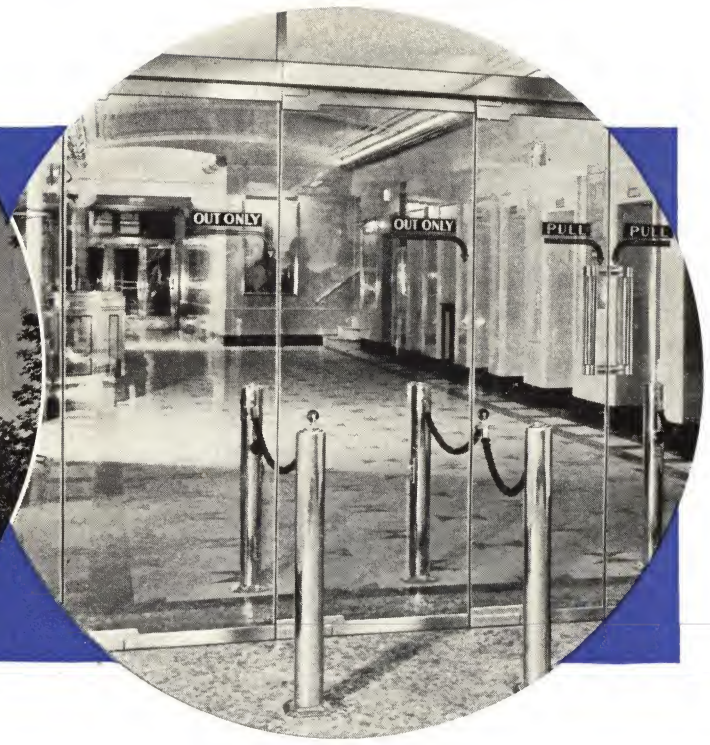
Physical Characteristics

QUALITIES	THICKNESSES	MAX. SIZES	WEIGHTS
Silvering Glazing	7/64" 1/4"	123x216	1/64" 1.44 lbs. [ ] 1/4" 3.25 lbs. [ ]

STRENGTH	COLORS	FINISH
Tension 6500 lbs. [ ] Comp. 36,000 lbs. [ ] Modulus Elasticity 10,000,000	Water White	Ground and Polished

For complete Architectural Specifications see page Three ●





SOLEX PLATE GLASS

A Heat Absorbing Plate Glass

Solex is made by a special process which gives it the valuable quality of absorbing heat without interfering with the transmission of visible light. Thus, while it admits 70% to 75% of the sun's total light, it transmits less than 43% of the total solar heat.

Greatly Reduces Sunheat in Rooms

When windows, skylights, etc., of a building are glazed with Solex, the solar heat entering that building through such openings is greatly reduced. Persons sitting adjacent to Solex windows are far more comfortable, and the glare resulting from high light intensity is considerably lessened.

Specific Uses

Solex is well fitted for a wide variety of uses. It may be employed to advantage in southern and western exposures of all types of buildings, whether schools, residences, factories, hotels or office buildings, and will result when so used in greater bodily and visual comfort for building occupants. And when used to glaze textile factories or warehouses, Solex prevents fading and bleaching of delicate, colored fabrics from exposure to sunlight.



Physical Characteristics

QUALITIES	THICKNESSES	MAX. SIZES	WEIGHTS
Glazing only	¼"	72x123	3.29 lbs. [|]

STRENGTH	COLORS	FINISH
Tension 6,500 lbs. [|] Comp. 36,000 lbs. [|] Modulus Elasticity 10,000,000	Bluish Green	Ground and Polished

HERCULITE PLATE GLASS

A Tempered Plate Glass of Great Strength and Shock Resistance

Herculite is polished plate glass which has been specially processed by heat and chilling. It will support a weight four times as great as ordinary plate glass. It will bend four times as far without breaking. Its resistance to impact is 7 to 8 times greater.

Unaffected by Varying Surface Temperatures

Herculite is not affected by varying surface temperatures, being able to stand, without breaking, a temperature of 650 degrees F. on one surface, while the other is at ordinary atmospheric temperature. It resists shocks and impacts as well at 15 degrees below zero F. as at ordinary temperatures.

Shattering Qualities

When Herculite, under terrific impact, *does* shatter, it does not break into sharp fragments like ordinary glass, but disintegrates into innumerable small fragments which are comparatively blunt edged.

Specific Uses

Obviously, the uses of Herculite are almost limitless where strength and safety are important considerations. It proves extraordinarily satisfactory when used for aquariums, cell doors, deck lights, doors, fire screens, flooring, gas cooker doors, glass bottom boats, gauge guards, kitchen equipment, laboratory equipment, partitions, portlights, road traffic signs, shelves, show cases, sight glasses, table and dresser tops, underwater lighting, etc.



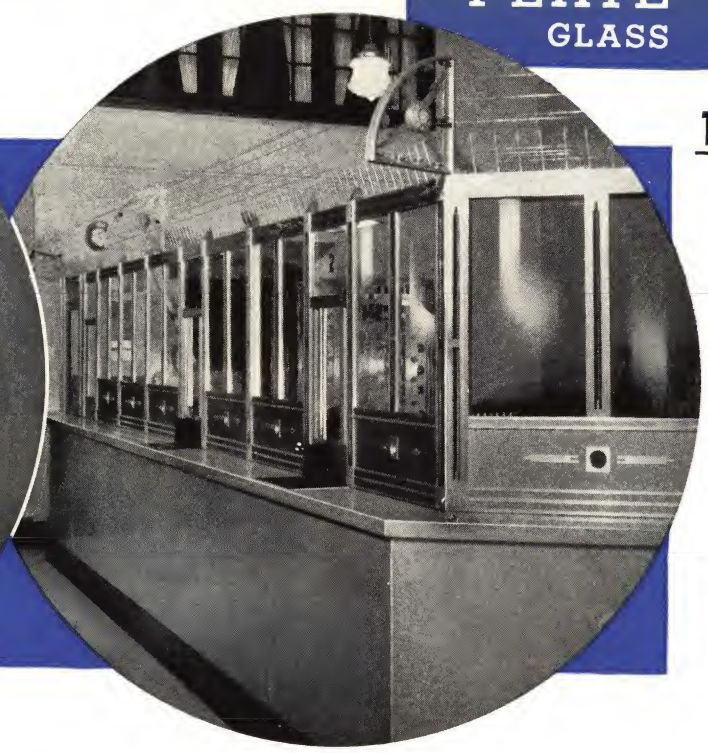
Physical Characteristics

QUALITIES	THICKNESSES	MAX. SIZES	WEIGHTS
Same as glass before tempering	Same as glass before tempering	48x108	Same as glass before tempering

STRENGTH	COLORS	FINISH
Approximately 4 times that of glass of equal thickness which has not been tempered	Same as glass before tempering	Same as glass before tempering

For list of warehouses and map showing warehouses and factories see back cover





X-RAY LEAD GLASS

The PITTSBURGH PLATE GLASS COMPANY now offers a domestic source of supply for X-ray Lead Glass which meets in every respect the requirements of various governmental departments. X-ray Lead Glass was developed primarily to protect operators and their assistants against continuous exposure to X-rays. While affording protection, the glass also allows clear vision of the X-ray apparatus and patient. X-ray Lead Glass may be used both for interior and exterior glazing.

Protection

Protection against very high X-ray intensities may be secured by the lamination of several lights. The single thickness gives protection against X-ray tubes operating under an impressed voltage of 100 k.w.

Lead Coefficient

The actual glass thickness multiplied by the "lead coefficient" gives the equivalent sheet lead thickness. The "lead coefficient" of Pittsburgh X-ray Lead Glass is at least .30.

NO. 1086 DOCUMENT GLASS

No. 1086 Document Glass is a clear canary yellow plate glass developed for the preservation of manuscripts, valuable documents, stamps, and old printed matter of every description. Special ingredients in the glass minimize the harmful effects of those light rays which cause paper and ink to fade and discolor. Architects will find No. 1086 Document Glass especially valuable for designing museums, libraries and buildings of similar types where valuable documents are displayed, and where the display cases form an integral part of the building.

Physical Characteristics

QUALITIES	THICKNESSES	MAX. SIZES	WEIGHTS
Glazing only	X-Ray 5.35 to 7.35 m/m Document—¼″	40x72	5½ lbs. [ ]

STRENGTH	COLORS	FINISH
Approximately ⅔ as strong as plate glass of equal thickness	X-Ray Golden Yellow Document Canary Yellow	Ground and Polished

SAFETY GLASS

Multiplate Bullet-Resisting Glass

This glass is a laminated plate glass developed by the PITTSBURGH PLATE GLASS COMPANY for use where special protection is required, usually protection against firearms. In a bank, for example, Multiplate protects employees as well as funds and permits them to sound alarms and use defensive arms without fear of injury, in the event of a hold-up or attempted robbery.

Protective Qualities of Various Thicknesses

1⅛ in. Multiplate, called Super Multiplate and the thickness most commonly used, is satisfactory for use against weapons developing not more than 490 ft. lbs. energy. It will withstand from four to ten shots fired at point blank range from the common sidearms, including the .45 caliber revolver, and the .38 Super Automatic. 1½ in. Multiplate, called Hi-Resist Multiplate, is satisfactory for use against weapons developing not more than 804 ft. lbs. energy. It is especially designed to offer protection against the revolver popularly called the Smith and Wesson Magnum Revolver, shooting a special .357 Magnum cartridge. 2 in. Multiplate, called Hi-Power Multiplate, is satisfactory for use against weapons developing not more than 2400 ft. lbs. energy. It is the only glass officially listed for protection against high powered rifle bullets. It will withstand successfully several shots from a standard 30-30 sheriff's weapon, and will even turn back a single steel jacketed service bullet shot from the terrifically powerful 30-06 Army Springfield. It also is recommended as adequate protection against a burst of fire from the Thompson Sub-Machine Gun.

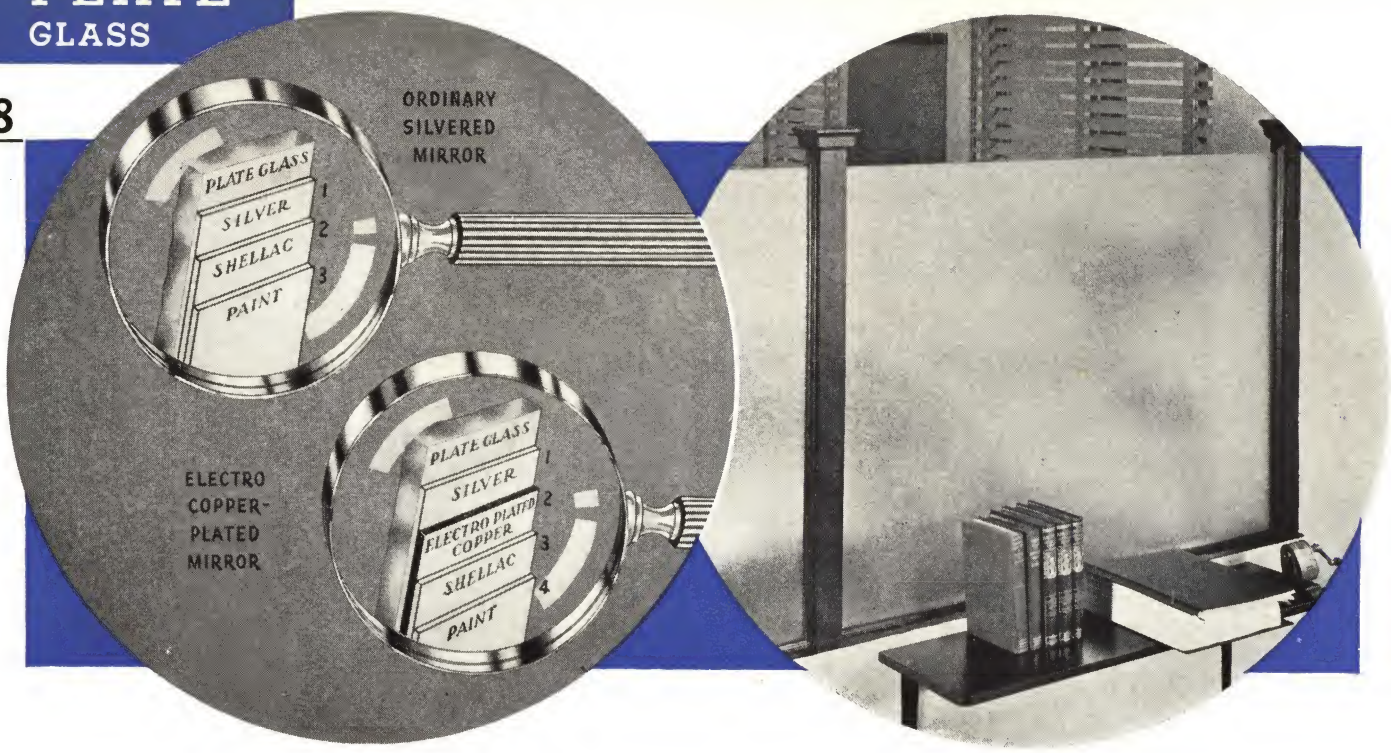
Practically all banks in the United States using bullet-resisting glass standardize on Multiplate. It is regularly checked, tested and listed by Underwriters Laboratories.

Physical Characteristics

QUALITIES	THICKNESSES	MAX. SIZES	WEIGHTS
Commercial	½″ Minimum	45x84	½″ 6.91 lbs. [ ]
	¾″ Minimum		¾″ 10.30 lbs. [ ]
	⅞″ Minimum		⅞″ 11.90 lbs. [ ]
	1″ Minimum		1″ 13.57 lbs. [ ]
	Super 1⅛″ Minimum		1⅛″ 15.23 lbs. [ ]
	Hi-Resist 1½″ Minimum		1½″ 21.70 lbs. [ ]
	Hi-Power 2″ Minimum		2″ 27.11 lbs. [ ]

STRENGTH	COLORS	FINISH
For recommendations of protection against various firearms, see above	Clear	Ground and Polished Plate Glass laminated

For complete Architectural Specifications see page Three



PITTSBURGH MIRRORS

For Every Structural and Decorative Purpose

Pittsburgh Mirrors include mirrors for every architectural need. Whether used structurally in a building, or as purely decorative media, Pittsburgh Mirrors are consistently of high quality and afford superior reflectivity. Especially recommended are Pittsburgh Copper Back Mirrors, which are specially protected against deterioration.

Pittsburgh Copper Back Mirrors

Pittsburgh Copper Back Mirrors receive, during manufacture, a coating of copper, electroplated over a heavy film of silver . . . and this copper backing forms an efficient protection against the usual effects of varying climatic and atmospheric conditions. Since these specially protected mirrors retain their beauty and usefulness year after year, their use practically eliminates the need for replacements.

Pittsburgh Copper Back Structural Mirrors

These mirrors are specially fabricated for use with mastic in order to give the maximum service. Structural mirrors differ from other types in that they have an additional protective coating.



Colors and Types Available

All Pittsburgh Mirrors are available made from regular polished plate glass. Also, for the achievement of original effects, Pittsburgh Mirrors may be made from Flesh Tinted, Blue, Crystalex or Solex Plate Glass, and fabricated as silver, gold or gunmetal mirrors.

Physical Characteristics

QUALITIES	THICKNESSES	MAX. SIZES	WEIGHTS
Silvering Mirror Glazing Glazing	Fabricated from any thickness of glass	Regular . . . up to maximum glass size Copper Back and Structural . 70x144	Approximately same as plate glass

STRENGTH	COLORS	FINISH
Approximately same as plate glass	Plain, Blue, Flesh, Water White, Blue-Green	Silver, gold or gunmetal backing on any color glass

TAPESTRY GLASS

A Translucent, Semi-Opaque Glass

Tapestry Glass is a product ideally suited for use where the architect desires to glaze in such a way as to admit the light but obstruct the view. For this glass, while transmitting and diffusing the maximum amount of light, is able, because of its peculiar surface texture, to obscure vision.

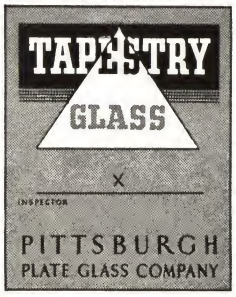
The glass is really a unique combination of transparency and opacity. Objects placed quite close to the surface of the glass can be seen through it almost as plainly as through transparent glass. But objects decrease in visibility and eventually become entirely shadowed and obscured when they are removed from close proximity to the glass.

Attractive in Appearance

Tapestry Glass is unusually attractive in appearance, too. Its silvery, rich-looking surface, glinting and sparkling in a curiously live fashion when light touches it, creates an effect as pleasing as it is distinctive.

Decorative Possibilities

And since Tapestry Glass can be strikingly decorated by sand-blasting, chipping or mitering upon its surface, the architect will find it a remarkably helpful medium in executing decorative plans.



Finish

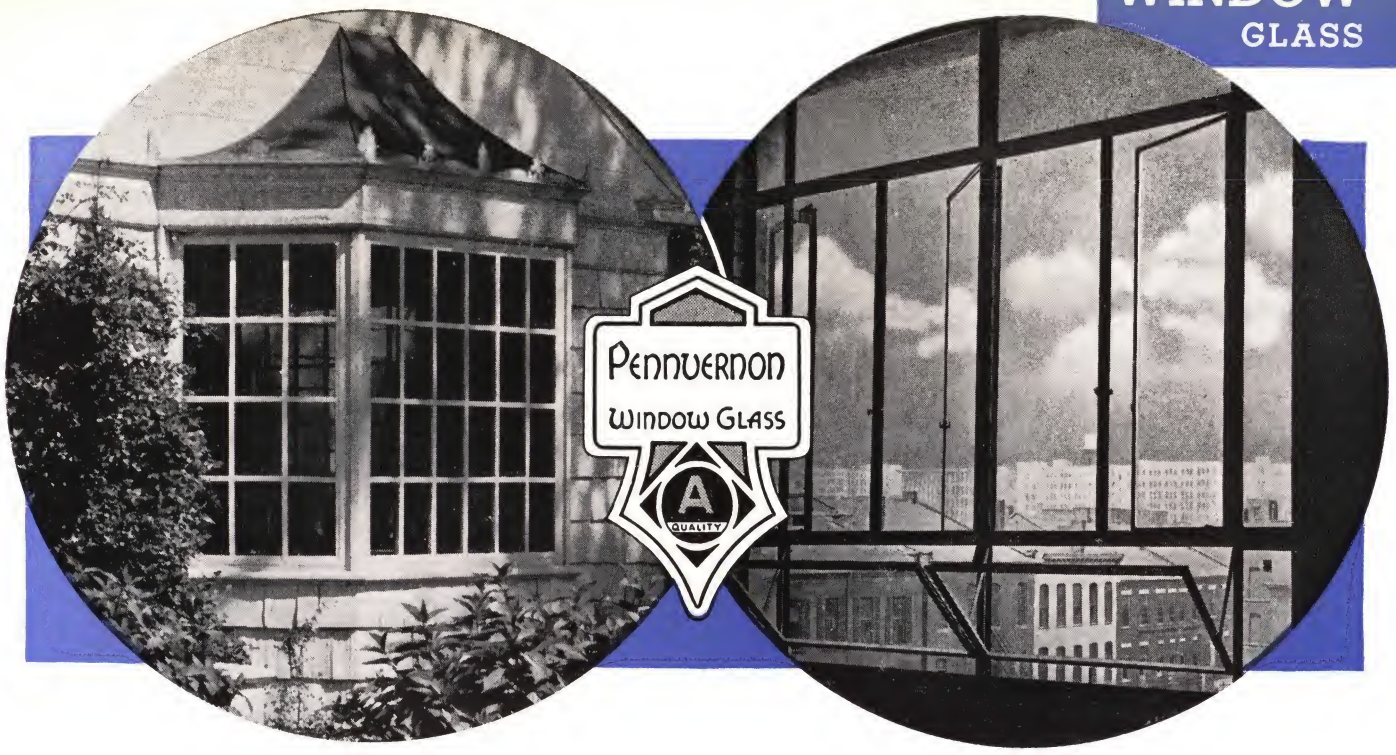
It is furnished with both surfaces in Tapestry finish or one in Tapestry finish and the other polished.

Physical Characteristics

QUALITIES	THICKNESSES	MAX. SIZES	WEIGHTS
Glazing	3/16" 1/4"	60x144	3/16" 2.87 lbs. [ ] 1/4" 3.68 lbs. [ ]

STRENGTH	COLORS	FINISH
Equal to or greater than that of regular plate glass	Translucent Semi-Opaque	Plain 3/16" and 1/4" Polished 1/4" only

• *For list of warehouses and map showing warehouses and factories see back cover*



PENNVERNON WINDOW GLASS

A Quality Sheet Glass for General Glazing Purposes

Pennvernon Window Glass represents an extraordinarily high development in sheet glass making. This glass is manufactured by a special process, in which it is drawn vertically and held absolutely flat from molten metal to finished sheet. During the drawing process, no rolls or foreign substances of any kind touch the surface of the glass until it has cooled sufficiently to be beyond injury. Consequently, Pennvernon has an unusually brilliant, reflective and unmarred surface finish on both sides of the sheet.

Advantages

Other superior qualities distinguish this fine window glass, too. Because it is made only from the purest and most carefully selected ingredients, it is remarkably transparent and retains its clarity indefinitely.

Pennvernon's durability also recommends it. Because the texture of its surfaces is so smooth, wear and abrasion affect it less than ordinary window glass, and its beauty and utility last longer.

Because of these qualities, architects everywhere find Pennvernon Window Glass the most satisfactory sheet glass to specify.

Qualities

Pennvernon is graded at the factory by experts, in accordance with U. S. Government standards, and a label indicating quality is affixed to each light, as follows:

AA—This is the best quality of window glass obtainable. Because Pennvernon "AA" is higher in quality than is commercially necessary, it is made only on special order and priced accordingly.

A—The highest grade of window glass for special commercial uses. Contains no imperfections that can perceptibly interfere with straight vision.

B—Window Glass free from noticeable defects, but containing imperfections which prohibit its being graded as "A" quality.

Greenhouse—A special quality selected to eliminate defects injurious to growing plants. Available in sizes 16x18 in., 16x24 in. and 18x28 in. only.

Picture Glass—Pennvernon Picture or 16-oz. Glass is a very thin glass, especially made and graded for picture framing.

Heavy Sheet Glass—Available in thicknesses of $\frac{3}{16}$ in. and $\frac{7}{32}$ in., and in Select or Factory Run Qualities. Select Quality of Pennvernon Heavy Sheet Glass approximates "A" Quality in single and double strength Pennvernon; Factory Run Quality approximates regular "B" Quality.

Packing

Pennvernon Window Glass is packed with a sheet of special type separator paper between each light to prevent scratching, marring or staining. Lights are then placed in a specially constructed corrugated carton, which is safe and convenient to handle, and which is lined with asphalt paper to protect glass against moisture. This carton is inserted for shipment in a sturdy, lightweight wood crate, upon which the Pennvernon trademark always appears for easy identification.

Physical Characteristics

QUALITIES	THICKNESSES	MAX. SIZES	WEIGHTS	STRENGTH	COLORS	FINISH
AA-A-B Greenhouse Picture Heavy Sheet	Single Strength .087 - .095 Double Strength .118 - .133 Heavy Sheet $\frac{3}{16}$" - .187 to .200 $\frac{7}{32}$" - .212 to .225	Heavy Sheet $\frac{3}{16}$" up to 50 [ ] $\frac{7}{32}$" up to 60 [ ]	Picture 16 oz. [ ] S.S. 19 oz. [ ] D.S. 26 oz. [ ] $\frac{3}{16}$" 40 oz. [ ] $\frac{7}{32}$" 45 oz. [ ]	Same as plate glass of equal thickness	Clear	Fire-finished

For complete Architectural Specifications see page Three

Distributing and Manufacturing Facilities of the

Paint • PITTSBURGH • Glass
PLATE GLASS COMPANY

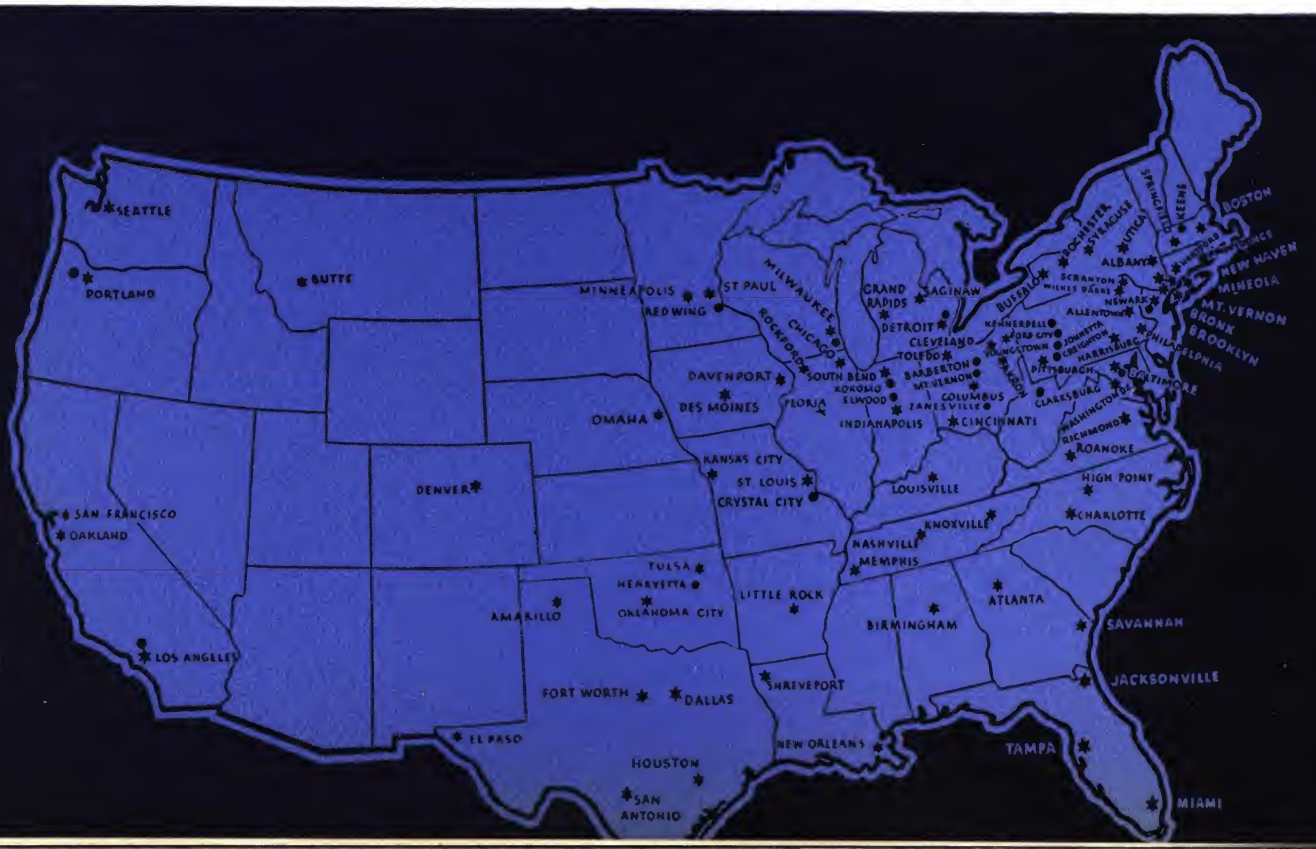
AKRON, Ohio
674 Carroll St.
ALBANY, N. Y.
47 N. Ferry St.
ALLENTOWN, Pa.
827 N. 12th St.
AMARILLO, Texas
720 E. 13th St.
ATLANTA, Ga.
172 Marietta St., N. W.
BALTIMORE, Md.
8 S. Paca St.
BIRMINGHAM, Ala.
912 N. 20th St.
BOSTON, Mass.
300 Babcock St.
BRONX, N. Y.
441 Exterior St.
BROOKLYN, N. Y.
Jay, Water & Plymouth Sts.
BUFFALO, N. Y.
101 Seneca St.
BUTTE, Mont.
840 Utah Ave.
CHARLOTTE, N. C.
201 E. Sixth St.
CHICAGO, Ill.
451 St. Clair St.
CINCINNATI, Ohio
Broadway, Court & Eggleston Aves.
CLEVELAND, Ohio
3849 Hamilton Ave.
COLUMBUS, Ohio
324 E. Second Ave.
DALLAS, Texas
Santa Fe Terminal Bldg.
DAVENPORT, Iowa
414 Scott St.
DENVER, Colo.
2519 Walnut St.
DES MOINES, Iowa
108 E. Fourth St.
DETROIT, Mich.
6045 Hamilton Ave.
EL PASO, Texas
1106 E. Overland St.
FORT WORTH, Texas
1825 Main St.
GRAND RAPIDS, Mich.
21 Ionia Ave., S. W.
HARRISBURG, Pa.
611 S. 17th St.
HARTFORD, Conn.
40 Chapel St.
HIGH POINT, N. C.
1 S. Hamilton St.
HOUSTON, Texas
101 Crawford St.
INDIANAPOLIS, Ind.
59 S. State Ave.
JACKSONVILLE, Fla.
601 N. Myrtle Ave.
KANSAS CITY, Mo.
125 W. Fifth St.
KNOXVILLE, Tenn.
207 Humes St.
LITTLE ROCK, Ark.
112 N. Scott St.
LOS ANGELES, Calif.*
Box S, Florence Branch
LOUISVILLE, Ky.
1601 W. Main St.
MEMPHIS, Tenn.
435 Madison Ave.
MIAMI, Fla.
1200 Biscayne Blvd.
MILWAUKEE, Wis.
820 N. Market St.
MINEOLA, N. Y.
49 Windsor Ave.
MINNEAPOLIS, Minn.
616 South Third St.
MT. VERNON, N. Y.
556 S. Fulton Ave.
NASHVILLE, Tenn.
1102 Grundy St.
NEWARK, N. J.
290 Elizabeth Ave.
NEW HAVEN, Conn.
26 Mill St.
NEW ORLEANS, La.
1500 Poydras St.
OAKLAND, Calif.*
1125 Castro St.
OKLAHOMA CITY, Okla.
101 E. California Ave.
OMAHA, Nebr.
1402 Jones St.
PEORIA, Ill.
915 S. Washington St.
PHILADELPHIA, Pa.
3034 N. 16th St.
PITTSBURGH, Pa.
632 Duquesne Way
PROVIDENCE, R. I.
333 Harris Ave.
RICHMOND, Va.
302 Seventh St., S.
PORTLAND, Ore.*
1235 N. W. 15th Ave.
ROANOKE, Va.
14 Pleasant Ave., S. E.
ROCHESTER, N. Y.
362 Exchange St.
ROCKFORD, Ill.
123 S. 3rd St.
SAGINAW, Mich.
103 Fitzhugh St.
ST. LOUIS, Mo.
3900 Chouteau Ave.
ST. PAUL, Minn.
459 Jackson St.
SAN ANTONIO, Tex.
1420 S. Alamo St.
SAN FRANCISCO, Calif.*
1230 Market St.
SAVANNAH, Ga.
Central of Georgia Terminals
SCRANTON, Pa.
823 Wyoming Ave.
SEATTLE, Wash.*
316 Westlake Ave., N.
SHREVEPORT, La.
90 Fannin St.
SOUTH BEND, Ind.
1138 S. Lafayette St.
SPRINGFIELD, Mass.
40 Albany St.
SYRACUSE, N. Y.
838 Erie Blvd., W.
TAMPA, Fla.
102 Madison St.
TOLEDO, Ohio
2410 Albion St.
TULSA, Okla.
301 E. Archer St.
UTICA, N. Y.
615 Eagle St.
WASHINGTON, D. C.
4th & Channing Sts., N. E.
WILKES-BARRE, Pa.
54 Scott St.
YOUNGSTOWN, Ohio
25 N. Watt St.

*Carrying Pittsburgh Paint Products only

W. P. FULLER & CO., Distributors of glass products of the Pittsburgh Plate Glass Co., have convenient warehouses located in the following cities, with additional store and dealer accounts throughout the Northwest:

Phoenix, Arizona
Tucson, Arizona
Salt Lake City, Utah
Oakland, Calif.
Seattle, Washington
Tacoma, Washington
Spokane, Washington
Sacramento, Calif.
Missoula, Montana
Butte, Montana
Portland, Oregon
Fresno, Calif.
Los Angeles, Calif.
Santa Barbara, Calif.
San Diego, Calif.
San Francisco, Calif.
Walla Walla, Washington
Yakima, Washington

MAP BELOW INDICATED ★ WAREHOUSES • FACTORIES



SECTION 18

CONTINUED ⟶

J. MERRILL RICHARDS
119 West First Street
BOSTON, MASS.

AMERICAN 3 WAY-LUXFER PRISM CO.
2139 West Fulton Street, CHICAGO, ILL.
517 West 45th Street, NEW YORK, N. Y.

Magnalite—Diffusing Glass

(Registered U. S. Patent Office)

For Better Interior Vision

SOLD BY LEADING GLASS DEALERS EVERYWHERE

For Metal and Concrete Reinforced Skylights, see File Index

Interior Vision

It is recognized that good interior lighting is not necessarily dependent on high illumination and that too much light is objectionable. Certain light intensities (foot candles) are recommended for different kinds of work as, for instance, 10 to 20 foot candles for reading normal print, 20 to 30 for fine print, sewing, etc., and 30 to 50 for severe visual work over long periods. Under 10 foot candles is considered inadequate for critical seeing.

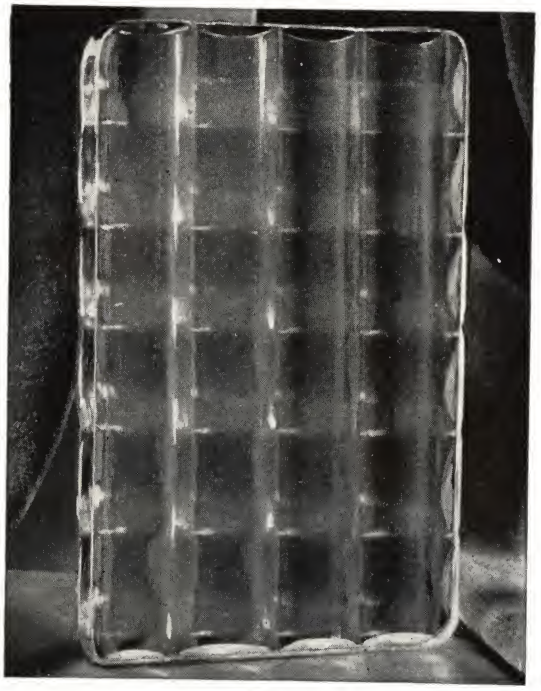
Interior vision is improved by eliminating objectionable contrasting areas of light and shadows or, in other words, securing a working plane of even light intensities.

MAGNALITE will accomplish this desirable result.

Efficient Results

Smaller glass openings, glazed with MAGNALITE, will positively improve interior vision and:—

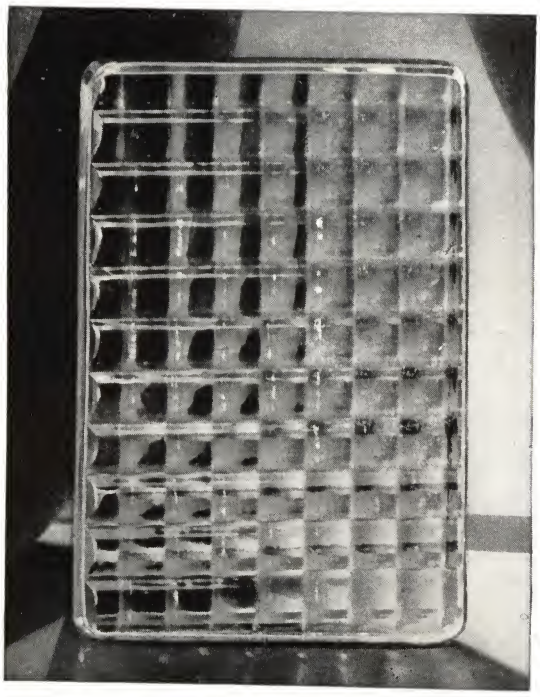
Reduce heat losses in Winter.
Exclude more Summer heat.
Diffuse solar heat over the diffusion image.
Produce a desirable white work light.
Reduce sunlight intensities 90%, under normal conditions, in direct line with sun's rays.
Easily cleaned surfaces will maintain original efficiency.



Magnalite Type "A"
Principally for use in large openings and in locations distant from vision. Generally used in Ceiling Lights

Description

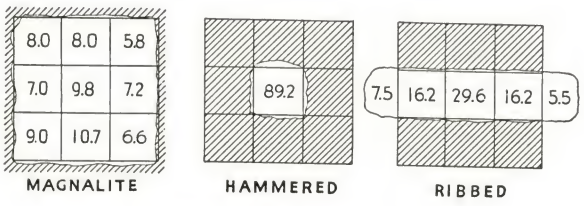
MAGNALITE is a clear water white sheet glass with both surfaces smooth and crossed by scientifically designed cylindrical lenses at right angles to each other on either surface. Type "A" MAGNALITE is manufactured with the lenses approximately ½ in. on centers, and Type "B" approximately ¼ in. on centers.



Magnalite Type "B"
For general use, where a smaller design than Type "A" is more Architecturally correct, and in locations close to vision

Principle of Magnalite Four-Way Diffusion

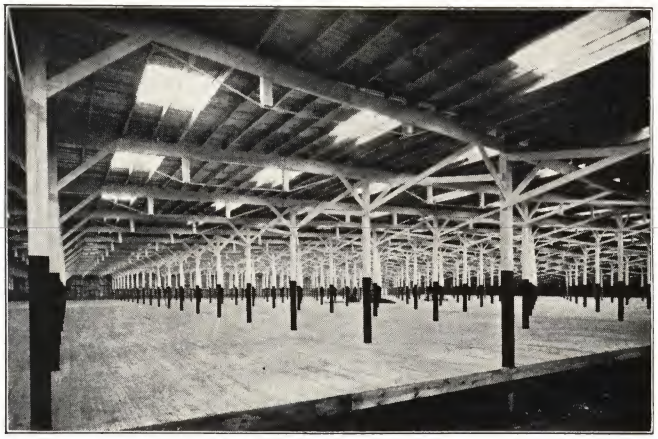
One set of lenses *spreads light evenly* at right angles to their axes. The other set spreads light in the opposite direction to cover an area *the shape of the glass opening.* The total diffusion angles average about 32°.



Comparative Light Diffusion Images
Figures are in relative percentages showing even light diffusion through Magnalite



Sun Spots with Ordinary Glass



Even Light with Magnalite Glass

Light Transmission

The diffusing lenses are scientifically designed to prevent excessive kick-back of light and the transmission value is high for the wide degree of even light diffusion.

Adaptability

Magnalite is adaptable for and has been installed in all types of buildings.

Skylights and Monitors — (Generally Type "B" wired).

Ceiling Lights—Magnalite forms a perfect screen and hides all super-structure and flood light equipment, thoroughly diffusing the light from illuminating units as well as daylight.

Windows—Magnalite will cut off shadows of pilasters at a short distance from wall and improve interior vision, particularly, if sash is not continuous.

Transoms and Partitions—Magnalite is so obscuring that absolute visual privacy is assured.

Magnalite Diffusing Design

Magnalite Diffusing Tiles are available for use in our Flat Type Skylights. Horizontal glass gives most efficient lighting results.

Magnalite Sheet Glass designs are similar—in fact, almost match certain Glass Building Block designs—and, therefore, Magnalite Sheet Glass readily adapts itself to certain arrangements or architectural designs for specific areas involving the use of Glass Blocks in general.

Manufacture

Magnalite is manufactured, by the continuous process, by the Mississippi Glass Company.

Suggestion

Think of Magnalite glazed openings as being electric lighting units and space them accordingly. For instance, in a skylight layout when the roof heights are low the openings should be smaller and their number increased. When roof heights are high, skylight openings can be made larger and fewer in number as determined by diffusion angles. No set rules can be definitely given to determine the ratio of glass area to floor area on account of latitudes and requirements for which a building is intended. However, your usual skylight sizes can be appreciably reduced to give even better interior vision if Magnalite is used.

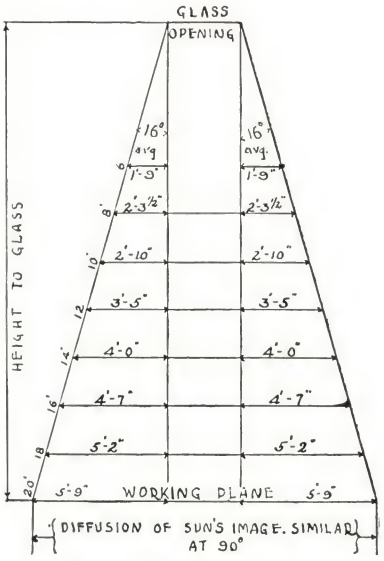


Diagram Showing Four-Way Diffusion
To assist in layout of skylights and other glass openings

THICKNESS, SIZES AND WEIGHTS

Type	Approximate thickness, in.	Approximate shipping weight per sq. ft., lbs.
A Plain	¼	3½
A Wired	$\frac{5}{16}$	4½
B Plain	$\frac{3}{16}$	3½
B Wired	$\frac{5}{16}$	4½

Maximum size stock sheets 48 in. wide by 132 in. long.
Special widths over 48 in. wide, subject to prior sale.

NOTES

Glaze skylights with underside lenses to serve as condensation leads. Keep curbs low as practical to permit light to spread. In general, glaze outside sash with lenses vertical to the weather or have horizontal lenses towards most accessible side.

In art galleries, assembly rooms, auditoriums, rooms for critical seeing, and other structures of similar nature, it is recommended that shades or vanes be installed for controlling sunlight. On receipt of information giving type of building, structural data, roof heights, latitude, etc., we will be pleased to recommend daylight openings.

Specification

Magnalite Light Diffusing Glass (Type "A" or "B" Plain or Wired).

MISSISSIPPI GLASS COMPANY

220 Fifth Avenue
NEW YORK, N. Y.

ST. LOUIS MISSOURI

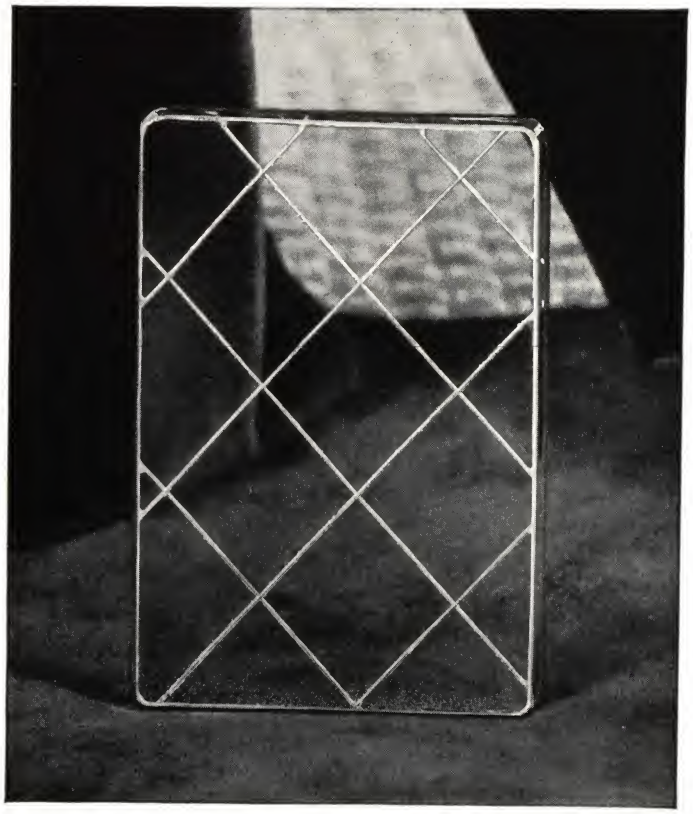
FULLERTON, CALIFORNIA

CHICAGO, ILLINOIS

MISCO WIRE GLASS POLISHED

"Misco" is the latest development in Wire Glass brought about as a result of many requests from the Architectural and Engineering professions for something as efficient as the old type Wire Glass but more attractive in appearance. "Misco" was submitted to the Underwriters' Laboratories for test and received their full approval equaling the old type Wire Glass in every respect as a fire retardant.

"Misco" can be obtained not only in Wire Glass Polished, as illustrated, but in several of the more popular surface patterns manufactured by the Mississippi Glass Company. To be sure of getting this new glass, specify it by name—"Misco."



Pattern Actual Size

Misco Wire Glass Polished

Approved Fire Retardant No. 32
Each Intersection of Wire is Welded

MISSISSIPPI FIGURED AND WIRE GLASS

The oldest American manufacturers of Rolled Figured and Wire Glass and the largest manufacturers of these products in the world. Mississippi Products are carried in stock by all the leading glass jobbers for the convenience of those who specify Mississippi where especially good quality is required, or the maximum of natural illumination is desired. Architects throughout the country have for many years recognized Mississippi as standard and specify definite patterns for definite purposes. Mississippi Wire Glass is the product upon which the Underwriter's standard was founded and is identified as Fire Retardant No. 32.

Our policy of developing certain patterns to accomplish certain results has been a great help to the architect and engineer in planning his structure. He knows that for skylights in industrial buildings there is no other glass which will give him the wide distribution of light and the high transmission factor of Pentecor or the uniform distribution of light afforded by Factrolite in vertical openings.

(Further information on light distribution through Mississippi Glass may be obtained from the Research Department, Mississippi Glass Company, *220 Fifth Avenue, New York City.)*

A Standard for Every Architectural and Engineering Daylighting Requirement

Strength—The wire mesh in Wire Glass does not add to the tensile strength, but simply holds the glass together when broken. It has been proven by test that so long as the wire mesh is properly sealed by the glass, its location in relation to the surface has no effect on the tensile strength of the product.

It is conceded that Wire Glass with the wire mesh slightly nearer one surface than the other, as a result of the vastly improved method of manufacture employed by the MISSISSIPPI GLASS COMPANY, for the purpose of producing a uniformly flat sheet of Wire Glass which will fit properly in a frame without more tension at one point than another, is a decided factor in reducing breakage to a minimum after installation.

Misco

A new development, the result of architects' suggestions, is Misco Wire Glass with the rectangular mesh of electrically welded wire which is architecturally and mechanically an improvement on the so-called chicken wire. (Misco Wire Glass is thoroughly approved by the Underwriters' Laboratories.)

Coolite

(Type H) heat absorbing glass, another new development for reducing solar heat radiation without sacrificing light. ¼-inch thick Coolite transmits 58% of solar light and only 27% of solar radiation. With double glazing and proper ventilation, Coolite in outside windows will reduce the maintenance cost of air conditioning materially in hot weather.

Shingles

Wire Glass shingles with finished edges and holes drilled to fit different types of construction (write for details).

LARGEST PRODUCER OF ROUGH ROLLED GLASS
MISSISSIPPI
GLASS COMPANY
220 FIFTH AVE.
NEW YORK

Identification Label on Mississippi Glass

Vita Glass

Ultra violet transmitting glass having a permanent final transmission of approximately 50% of the short ultra violet rays in natural light (the rays which tan the skin), is made in the following types:

Polished Plate
Clear Sheet
Cathedral (Hammered)
Rough Wire Glass

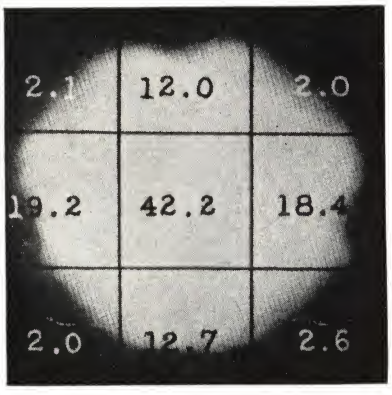
MISSISSIPPI - GLASS - CO. WG FIRE RETARDANT No. 32

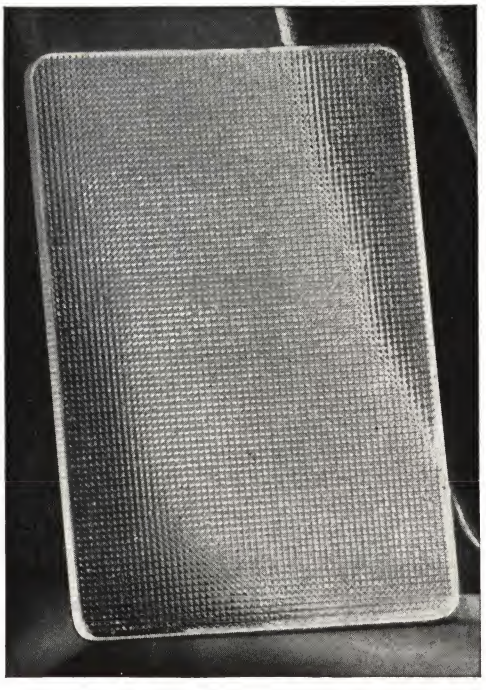
Identification Label on Mississippi Wire Glass

USE DAYLIGHT TO BEST ADVANTAGE WITH THE FOLLOWING TYPES OF MISSISSIPPI GLASS

1—FACTROLITE FOR SIDEWALL SASH

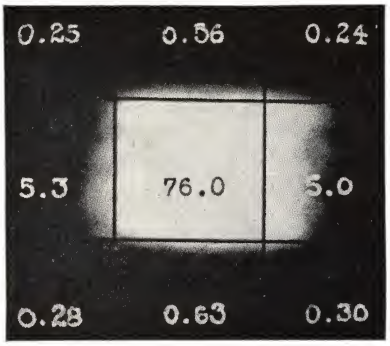
Especially designed for use in vertical openings of industrial buildings to break up the direct rays of the sun and diffuse them equally in all directions, which cuts down the sun's intensity at the window and builds up the illumination 25 feet from the window about 72% when compared with rough glass.





2—HYLITE FOR SAWTOOTH ROOFS

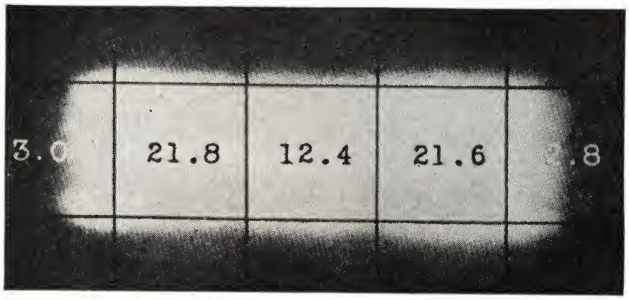
This glass was originally designed for sawtooth skylights to transmit the diffused north light. It, however, is a very practical and attractive glass for many uses.





3—PENTECOR FOR SKYLIGHTS

Undoubtedly the most efficient glass designed especially for skylights. Pentecor is made in both plain and wire glass. The ribs are cut at an angle which permits the maximum light transmission with the least possible loss from total reflection. Note from the chart how illumination is built up on each side of the light source—so that at a point 50 feet from the light source the illumination is increased over 100% as compared with rough glass. Pentecor also conducts condensation.





SERVICE

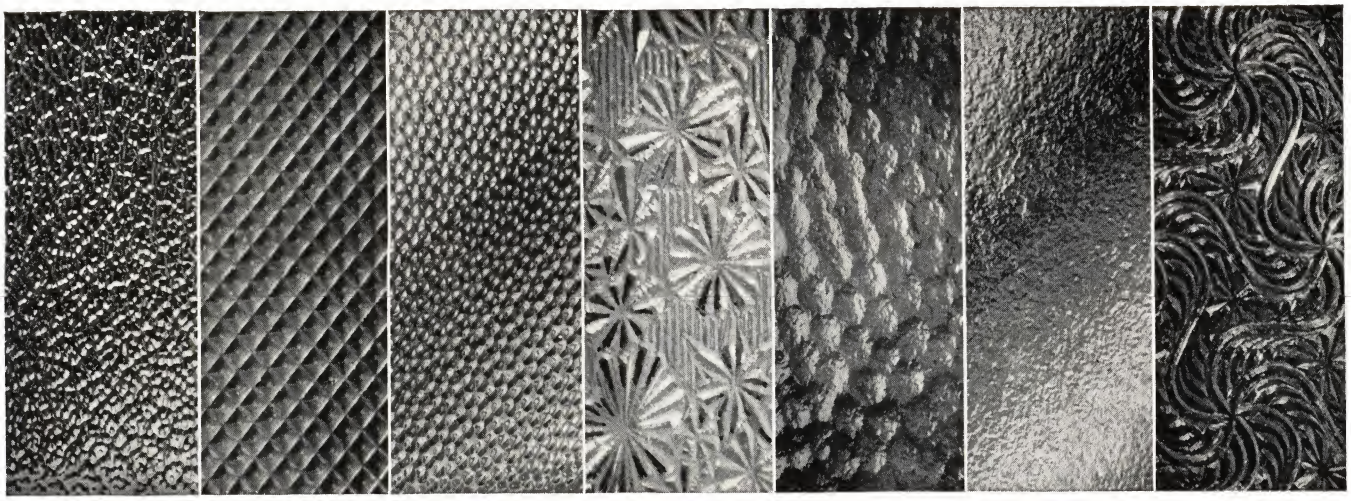
Our Research Department is equipped to furnish special information on problems which may be difficult for you to solve, covering such subjects as light transmission and distribution, heat transmission and absorption, transverse strength (wind pressure) thicknesses, sizes and weights of glass.

Do not hesitate to let us assist you on any glass problem you may have. Address "RESEARCH DEPT."

SAMPLES AND LITERATURE

Samples and copy of catalogue and architects' file sheets should be on file in every architect's and engineer's office. If yours have been mislaid, please advise us.

For Light Distribution Data Write for Copy of Illumination Report No. 131586



Artex | Aurora | Dewlite | Florentine | Hammered | Luxlite | Maze

CLASSIFICATIONS

To be sure of obtaining the Pattern Desired Specify Name Below	Thicknesses and Maximum Sizes Average Weights															
	Plain								Wire Glass							
	Standard					Polished		Coolite		Standard					Misco	Coolite
	1/8	3/16	1/4	3/8	1/2	1/4	1/4+	1/8	1/4	1/4	3/8	1/2	5/8	3/4	1/4	1/4
Apex							H									
Aurora	I	K	L			I										
Artex	F	F	G			F										
Astralite	F	F	G							J						
Dewlite	F	F	G													
Factrolite	F	K	L							J						
Florentine	F	K														
Hammered	F	K	L	L	L			D	C	J	J	E	B	B	J	A
Hylite	F	K	L							J						
Luxlite	F	F	G							G						
Maze	F	K								J						
Magnalite "A"			K							J						
Magnalite "B"			K							J						
Pentecor	F	K								J						
Prestlite	F	F	G			F										
Ribbed	F	K	L	L	L			D	C	J	J	E	B	B		A
Syenite	F	K				I				J					J	
Translite		K														
Polished										I		E	B	B	I	

Key to Maximum Sizes

First dimension = Width

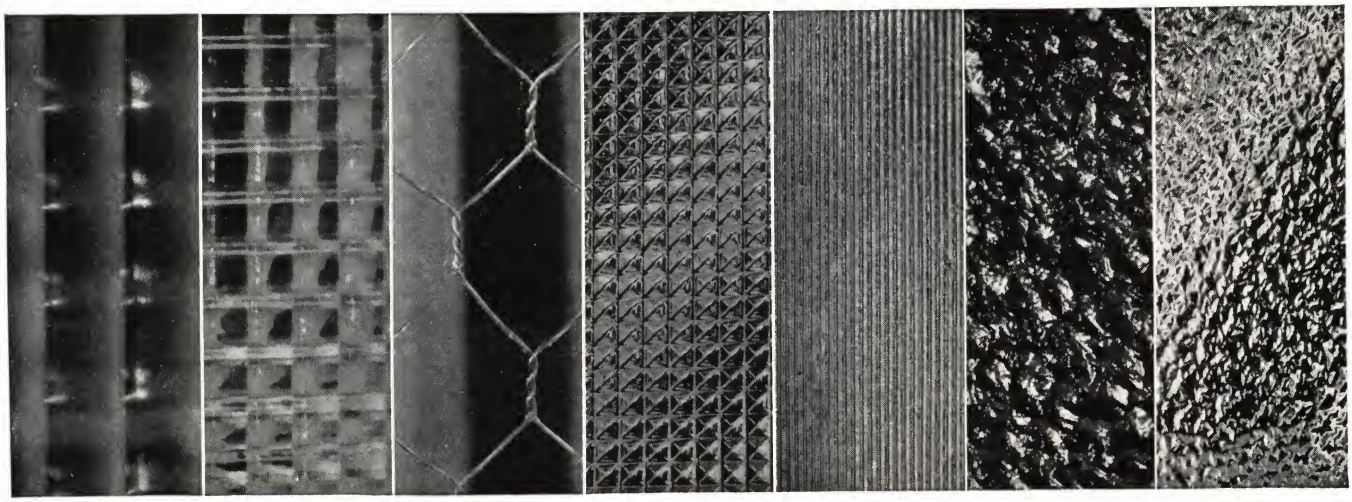
Second = length

All ribs and twists in wire run with length

Sizes up to Key Wide Long

A = 24 x 84
B = 30 x 72
C = 32 x 84
D = 32 x 96
E = 48 x 120
F = 48 x 132
G = 48 x 144
H = 50 x 100
I = 56 x 132
J = 56 x 144
K = 60 x 132
L = 60 x 144

Specify Width First



Magnalite "A" | Magnalite "B" | Polished | Prestlite | Ribbed | Syenite | Astralite

PENNSYLVANIA WIRE GLASS COMPANY

FRANK L. MARTIN, President

EXECUTIVE OFFICE

1612 Market Street, PHILADELPHIA, PA.

WORKS, DUNBAR, PA.

Products

SKYLIGHTS and GLAZED ROOFING; MARQUISES; GLAZED CANOPIES; SIDEWALLS, etc.

SOLID FLAT WIRE GLASS—Rough, Ribbed, Hammered.

ORIGINAL SOLID CORRUGATED WIRE GLASS — White and Actinic.

ACTINIC GLASS—Rough and Ribbed, without wire; Rough and Ribbed Wire.

Also Glass without wire netting, in various patterns and thicknesses, to suit every requirement.

For complete details of *Original Solid Corrugated Wire Glass Skylights* refer to our 20-page catalog in Skylight Section (see File Index).

TRADE-MARK

Service and Samples

We offer gratuitous engineering advice on all glass problems. With reference to our Solid Corrugated Wire Glass service, upon receipt of rough sketches or details, we shall be glad to offer our suggestions for CWG skylights, roofs, etc.

Samples of any type of Glass we manufacture will gladly be mailed upon request.

FLAT WIRE GLASS

Process

Solid wire glass, made by the Pennsylvania continuous process, is completely formed by one pouring and one rolling.

Fire Protection

Wire Glass is a valuable fire retardant. It prevents flames from attacking adjacent buildings. It admits free access to the building or part on fire, as a small opening for the hose can be made and firemen can fight the flames from the outside without any injury. Wire glass confines the fire to the place of origin.

Approval (Distinguishing Mark)

All of our wire glass, ¼ in. and over in thickness, has the full approval of the National Board of Fire Underwriters as a fire retardant, which requires a distinguishing mark to identify the glass.

Our distinguishing mark is our *cabled strand,* appearing every 10 in. across the sheet and the full length of each sheet.

Specifications

Architects should always specify "Solid Wire Glass manufactured by the PENNSYLVANIA WIRE GLASS COMPANY" (give kind desired).

ACTINIC GLASS

Type "H" Glass—Heat-intercepting or Resisting—U. S. Government Specification—DD-G-451

An Aid to Industry

Why Needed

The main purpose of Actinic Glass in windows and skylights is to moderate the heat and glare of sunlight in buildings not equipped with shades. A noteworthy feature of numerous factories built in recent years is the superior distribution of moderated natural light which architects have accomplished by skillful design and by the use of large and continuous areas of Actinic Glass. These buildings contrast happily with others where adequate provision against glare and radiant solar heat were not made in the original plans and where occupants have been compelled to resort to such uneconomical and unsatisfactory makeshifts as painting of the ordinary glass used.

How It Differs from Ordinary Glass

Without going into technical details, the reasons why it reduces glare and also the heat of sunlight lie in its special chemical composition. As to appearance, it looks like ordinary rolled glass except for a characteristic tint which might very loosely be described as brown or amber and which was developed under the advice of an eminent specialist on color in lighting.

Aids Workers by Reducing Eye Strain

Merely as one of many common illustrations, white interior walls (which at night facilitate electric lighting) may often be so glaringly illuminated by sunlight as to be actually painful to the eyes. The use of Actinic instead of ordinary glass obviates such difficulties without unwarranted sacrifice of light. Numerous other instances of relief from glare could be mentioned.

Since glare is a well-known cause of fatigue, headaches, etc., both workers and employers profit by relief from it.

A good idea as to the gain in eye comfort may be had by certain easily made comparisons, using 12x12-in. specimens. Such samples will be sent free upon request.

As to Solar Heat

A person in front of a window or under a skylight of ordinary glass, upon which the summer sun is shining, not only experiences whatever discomfort may arise from high air temperature, but suffers also distress and loss of effectiveness due to solar radiant heat (the cause of sunstroke). This affliction is relieved by Actinic because it intercepts the major portion of such radiation. (Details for different thicknesses furnished on request.) As an illustration, a well-known consulting engineer, on a typical summer day, found by actual measurement that the temperature of a wood floor (not air temperature) was 20° F. lower under a skylight of Original Solid Actinic Corrugated Wire Glass than beneath an adjacent skylight of ordinary wire glass. Not only is the discomfort of hot floors and hot feet well known, but such tests give a good conception of the greater personal comfort in other respects.

For best results various factors in design should be taken into account. Consult us for suggestions.

Facilitates Air Conditioning

By assisting in the exclusion of solar heat, Actinic helps to cut both the initial cost of cooling equipment and also the expense of operation. Technical details will be furnished upon request.

Economy

Actinic costs so little more than ordinary glass that price is not a barrier. By its use, many factories have obviated the necessity for shades or awnings, which are expensive both in first cost and in maintenance.

Other Advantages

More cheerful illumination in the absence of direct sunlight.

Retards fading. Used in buildings where important documents, antiques, etc. are displayed.

Retards other undesirable chemical changes in various manufacturing industries.

Concerning special applications, write us for technical advice.

Designs and Thicknesses

Actinic Glass is made in the following designs and thicknesses: ⅛ in. plain rough and ribbed; ¼ in. plain rough and ribbed; ¼ in. rough and ribbed wire; Original Solid Corrugated Wire Glass.

PRESSED PRISM PLATE GLASS COMPANY

Manufacturers of Imperial Ornamental Plate Glass Products

33 North LaSalle Street
CHICAGO, ILL.

551 Fifth Avenue
NEW YORK, N. Y.

Products Manufactured

"Imperial" Ornamental Plate Glass Style O-1, O-2, O-3, O-4, O-5; Rubanite O-6; Texture O-7 and other special patterns; "Imperial" Prism-Plate Glass in large plates; "Imperial" Prism-Skylight Glass (unit plates 18x60 in.)

Quality and Dimensions

"Imperial" Ornamental Plate Glass is made in one standard plate glass quality and furnished in standard plate glass thickness ¼ to $\frac{5}{16}$ in. The maximum size is 72x84 inches.

Samples and Literature

We have illustrated herewith four specimen patterns in full size. Samples of these and others in stock or in course of manufacture will be furnished on request. Correspondence regarding new or special designs is solicited.

Distinguishing Characteristics

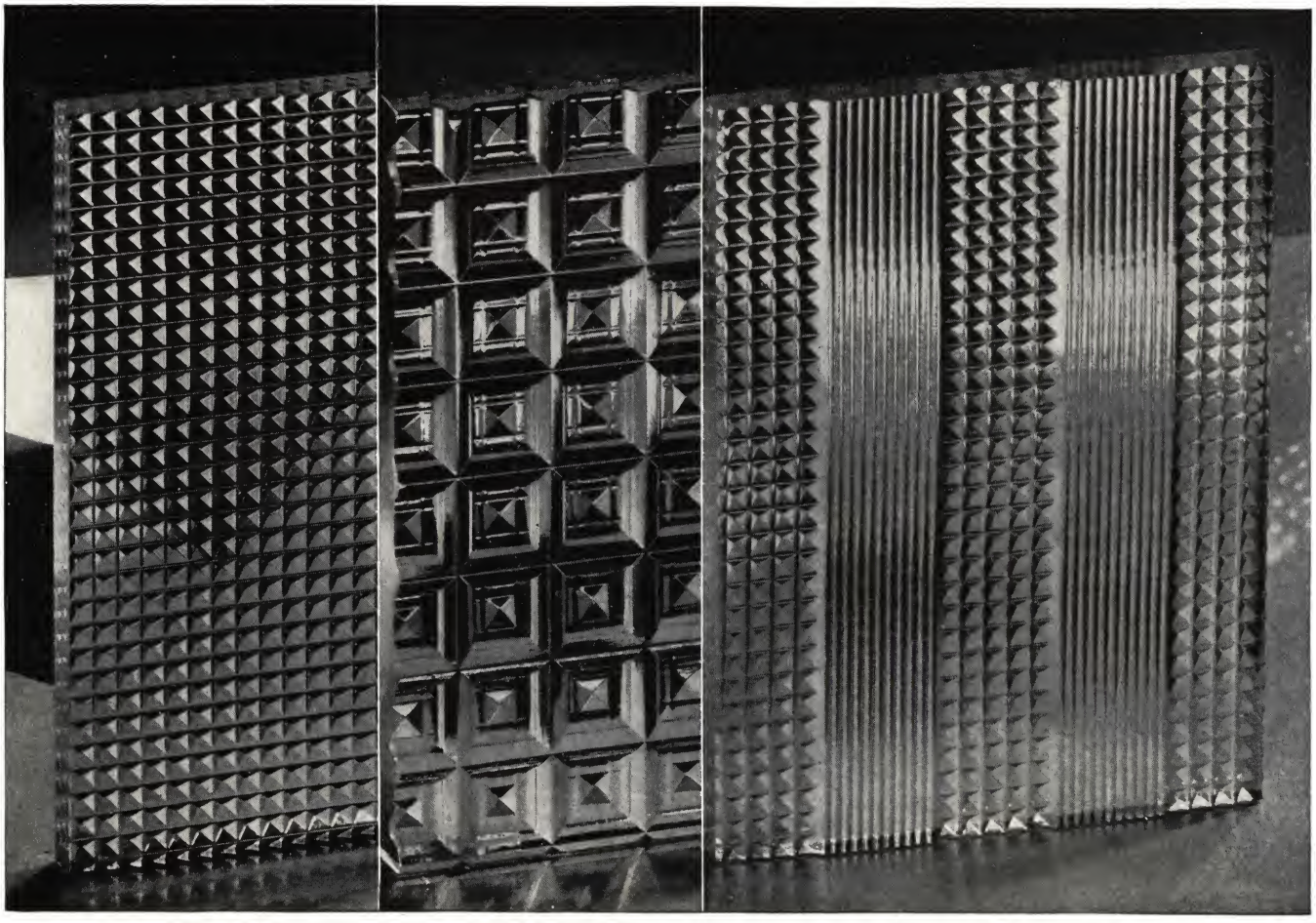
The how and why of the difference between "Imperial" and the other Ornamental Glasses lies in the special process by which the brilliant patterns of "Imperial" are made. The process combines the essential features of polished plate glass manufacture with a die-pressure method of forming the characteristic ornamental prismatic surfaces.

Glass in fluid form is rolled in uniform flat sheets approximately ½ in. thick. While still red hot the upper surface of the sheet is brought into contact with a steel die, which forms the entire surface at once into the pattern required. The die is very accurately machined and polished and under the pressure of many tons the top surface of the glass becomes a matrix copy of the die retaining all the accuracy of the machined steel plus the brilliance of a fire finished glass surface.

After being annealed and trimmed the reverse side of the glass is ground and polished so as to reduce the plates to commercial thickness and at the same time give them the flat highly polished surface, with true reflections, which is characteristic of all polished plate glass products.

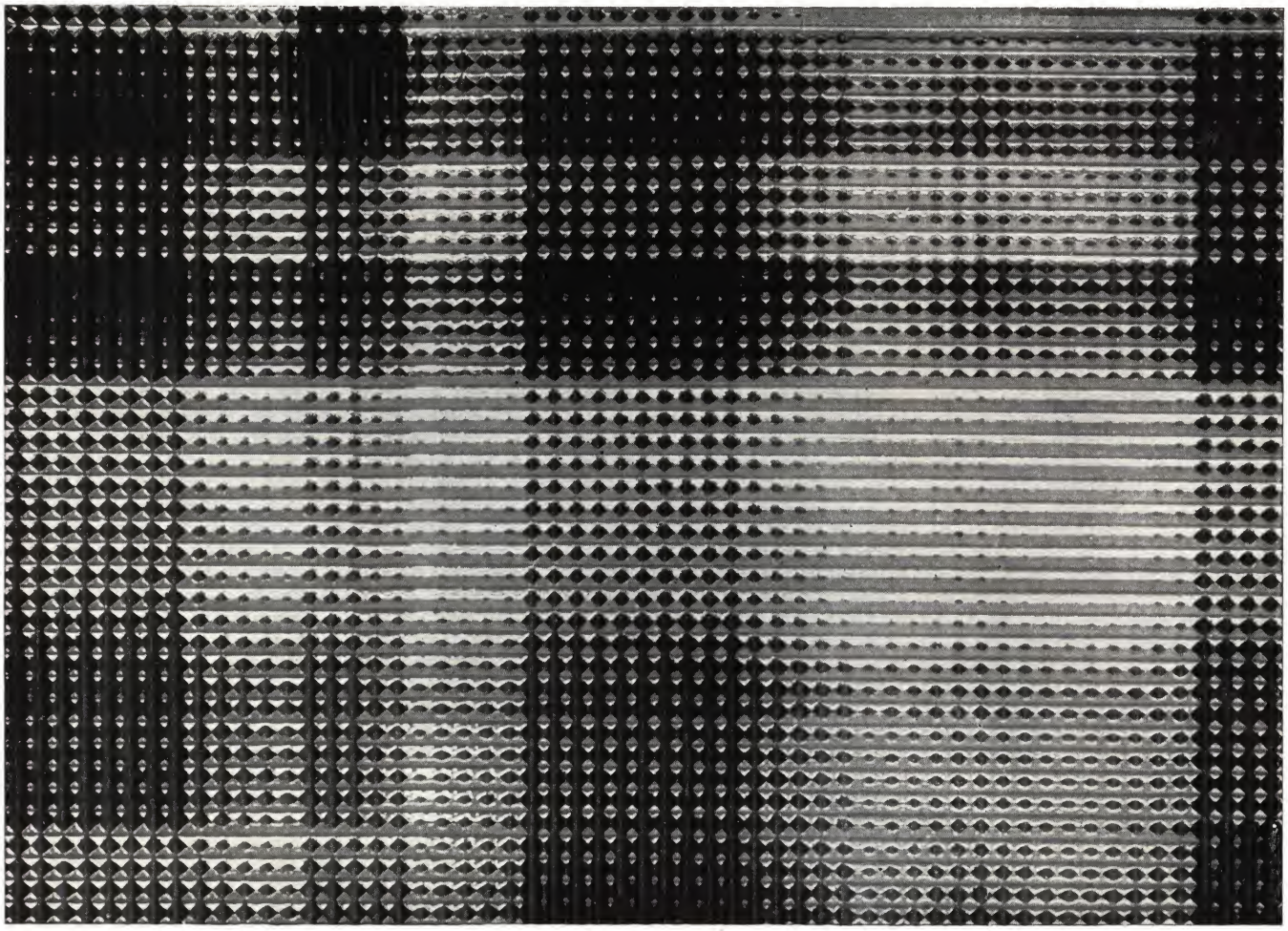
"IMPERIAL" ORNAMENTAL PLATE GLASS

The Illustrations Are Only Typical—Send for Other Samples



"Imperial" Style O-1 "Imperial" Style O-2 "Imperial" Rubanite O-6

TEXTURE IN PLATE GLASS MADE BY INTERWEAVING PRISMS

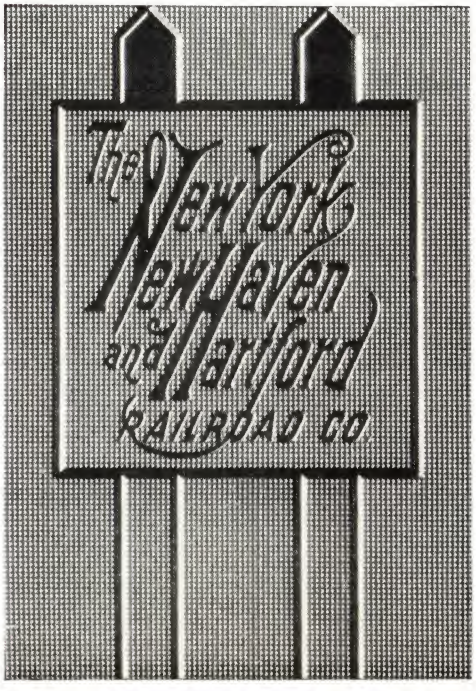


Illustrated in full scale

"IMPERIAL" TEXTURE O-7

Maximum size 72 by 84 in.

A changeable moving pattern that accents texture rather than line, with no repeating pattern.

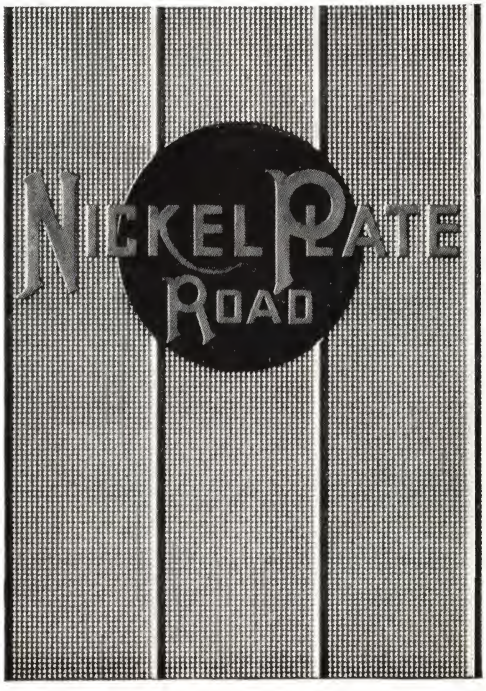


"IMPERIAL" SPECIAL DESIGN GLASS

Individual patterns, original and unusual effects in a wide variety can be made by our methods.

Glass should be considered as a plastic medium for artistic expression.

Even if the requirement is for a limited quantity we will be glad to discuss sketches of proposed new forms with architects or designers.



ESTABLISHED 1872

HENDERSON BROS., INC.

Leaded and Stained Glass in the Antique and Modern Styles

TELEPHONE
Murray Hill 4-6586

771 First Avenue, NEW YORK, N. Y.

HENDERSON'S LEADED GLASS

Henderson's Leaded Glass is carefully made and fabricated by modern methods. We can economically produce the special glazing sizes and forms used in the Tudor, Spanish, Colonial and Georgian period designs.

Adequate manufacturing facilities, combined with quantity purchases of raw materials, enable us to produce quality work at minimum prices. Skilled workmanship with careful supervision from first to last, insure a finished product of uniformly highest quality and enable us to guarantee Henderson's Leaded Glass against leakage and warpage.



Construction Features

Lead Cames—Heavy in thickness. Leaf of the lead is 3/64 in. thick; heart, 3/32 in. thick. Only pure virgin lead is used in our cames.

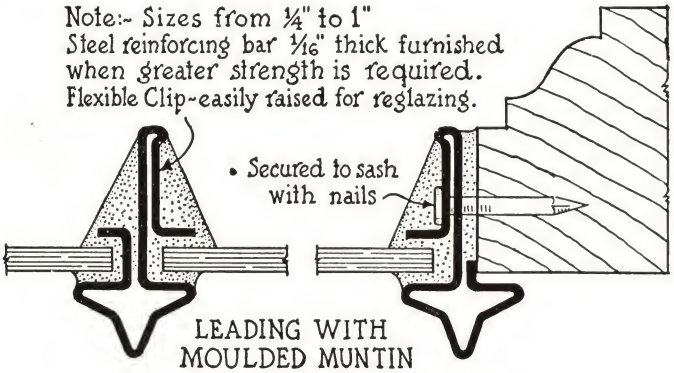
Reinforcing—All leads running the narrow dimension are reinforced with steel bars embedded in the heart of the lead. For panels, in which the narrowest dimension is more than 18 ins., we advise the use of Henderson's Reinforced Steel Stay Bar Came (described below) at intervals not to exceed 24 ins.

Soldered Joints—Soldered joints are heavy and solder is uniformly applied over the entire joint extending beyond the corners.

Cementing Compound—The compound is applied between the lead and the glass on both sides of the glass. A special mastic compound is used and applied in a careful and uniform manner. After completion, the leaded glass is kept in our shop for two weeks in order that the cement shall be thoroughly dry before shipping.



REINFORCED



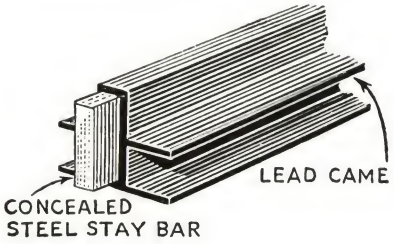
Henderson's Old Style Colonial Leading

Henderson's Reinforced Stay Bar Came

Added Strength without Extra Cost

In the Henderson Stay Bar Came the steel reinforcing bar is embedded in the lead pocket, protected against rust and is an *integral* part of the leaded glass panel. The prevailing practice has been to suspend the glass from the stay bar by means of wire and solder. In this type of construction, the glass eventually sags and bulges with resultant leakage.

This difficulty is entirely eliminated in Henderson Reinforced Steel Stay Bar Came, which is particularly valuable where the leaded glass is subjected to jarring.



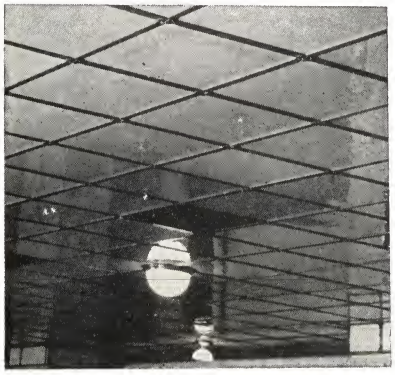
Henderson's Reinforced Stay Bar Came is made ⅜ to 1 in. wide, with pocket to receive reinforcing rod ⅛ in. thick and from ⅜ to 1 in. in height.



Ceiling Light

"Easy-Fix" Metallic Glazing

MODERN EFFECTS IN METAL AND GLASS



Henderson's Metal and Glass Ceiling
Turkish Bath, Biltmore Hotel
New York, N. Y.

Suitable for Ceilings, Partitions, Etc.
Diffused Lighting

The lock joint construction shown at the left is ideal for modern glass effects.

It is available in all bright metals and provides unusual strength and rigidity.

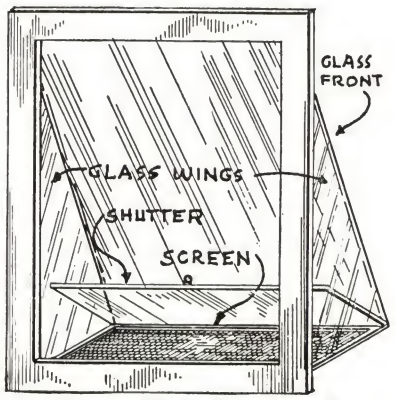
We will be glad to consult with architects at any time regarding this type of construction.

HENDERSON'S "NO-DRAFT" VENTILATOR

For All Types of Buildings

With Henderson's *No-Draft* Ventilator it is not necessary to open windows for ventilation.

Important Features—No drafts; *controlled* ventilation by adjustable valve in vent; has removable screen; is not conspicuous from outside; visibility is not distorted; weathertight; cost of installation and repairs similar to ordinary glazing; lowest priced ventilator of its type. Further information on request.



Interior View of Henderson's
No-Draft Ventilator

THE PAYNE-SPIERS STUDIOS, INC.

Stained Glass Craftsmen for Over Fifty Years
Ecclesiastical Memorials in Wood, Metal and Stone

50 West 15th Street, NEW YORK, N. Y.

Telephone: GRamercy 7-5626

Products

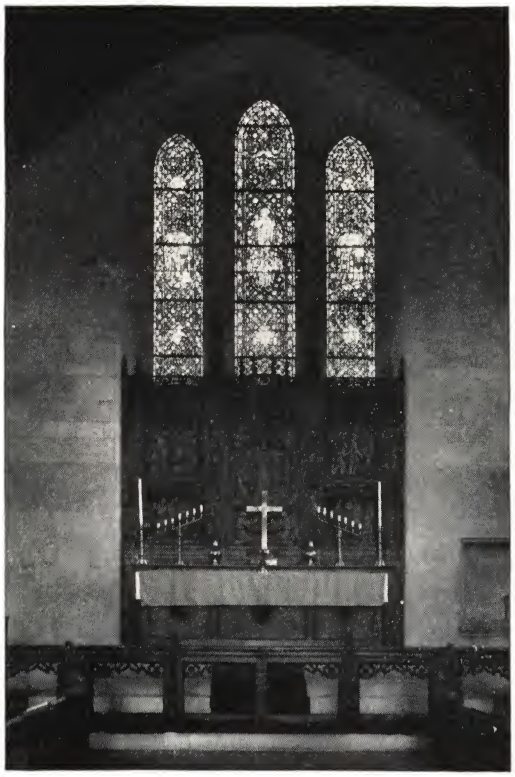
CHURCH and MAUSOLEUM WINDOWS
BRONZE MEMORIALS, TABLETS, MARKERS, etc.
VENETIAN and GLASS MOSAICS
CARVED WOODWORK, Reredoses Altars, Pulpits, Rails, etc.
MARBLE and STONE—Reredoses Fonts, Altars, Pulpits, etc.
ROOD SCREENS in Wood and Iron
METAL WORK—Special Fixtures Gates, Grilles, etc.
ANTIQUE MEDALLIONS
HAND WROUGHT LEADWORK

Experience and Service

Our organization is a combination of the 62-year-old Payne Studios of Paterson, N. J., and Richard N. Spiers & Sons of New York, established 1889, with the finest designers and craftsmen of each firm. We have executed church windows in 42 States in the Union and numerous foreign countries including Canada, France, India, Japan, Central America, Haiti and the West Indies.

Special designs submitted.

Window setting details furnished if desired.



Chancel—Church of the Ascension
Montgomery, Ala.
CRAM & FERGUSON, Architects

A list of nearby churches or other buildings where our windows may be viewed will be sent on request

Suggested Specifications

General—All leaded glass shall be executed to conform with patterns shown on drawings or special design submitted and approved by architect.
(The width of lead, plain, irregular or antique and the type of glass, imported or domestic, antique, cathedral or opalescent should be specified.)

Leading shall be soldered thoroughly on both sides and all flanges filled with a cement containing 50% pure white lead putty, 30% whiting, 10% litharge and 10% red lead mixed with pure linseed oil so as to make glass perfectly watertight.

Reinforcing and Setting—For setting in wood sash, use pure white lead putty for bedding and beading after sash has been primed.

Reinforcing to be formed of galvanized steel bars inside the leads or soldered to face of lead as determined by the width and design of the lights. The maximum width for inside reinforcement to be 18 in.

For setting in steel sash, use an approved steel sash putty. Reinforcing as noted above to apply here also.
(Sash should be furnished with mouldings for most substantial construction.)

Where glass is set in stone reglet, it shall be bedded thoroughly in white lead putty after shellacing stone, and a margin of lead must show evenly around edge of opening. It shall be reinforced by means of galvanized iron bars sunk deeply into the stone groove and tied to glass with a sufficient number of copper wires. Grooves are to be pointed up thoroughly, both inside and out.

Leave glass clean and whole on completion.



St. Anthony's R. C. Church, Hawthorne, N. J.



Bishop Weed Window, St. John's Episcopal Church, Jacksonville, Fla.



St. Theresa's R. C. Church Providence, R. I.

MEMORANDA

OWENS-ILLINOIS GLASS COMPANY

Insulux Products Division
Manufacturers of Owens-Illinois Insulux Glass Block

TOLEDO, OHIO

For Complete Description, Details, Specifications, Test Data, refer to our 24-page Insulux Catalog—see File Index

Owens-Illinois Glass Block are hollow, partially evacuated, water-clear units of pressed glass. The exclusive Owens-Illinois method of manufacture produces a block of uniform wall thickness, containing dry, rarefied air at a partial vacuum which gives the block its exceptional heat insulating properties. In addition to their heat-retarding characteristics, Insulux Glass Block offer a wide range of light transmission values and decorative possibilities.

Insulux Glass Blocks are laid up by the mason and brick layer. See complete specifications in Insulux catalog.

Uses for Insulux Glass Block Include

1. Continuous bands or panels of translucent, heat insulating walls for industrial buildings, department stores, office buildings, apartment houses, hotels, schools, hospitals, food plants, service stations and similar structures.

2. Corridor walls and partitions where borrowed light and sound insulating properties are desirable.

3. Translucent replacement panels in modernization and air conditioning improvements.

4. Store fronts and store front bulkheads — for decoration and basement illumination and where special floodlighting effects (with or without color) are desired.

5. Interior decorative work in restaurants, bars, cafeterias, dress shops, commercial display rooms and similar uses.

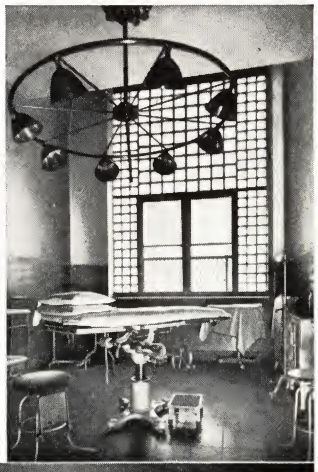
6. In residences for light, privacy and interesting design.

Light **THE MODERN WAY . . .**

IN HOTELS
Shoreland Hotel, Chicago
JAMES F. EPPENSTEIN, Architect



IN HOSPITALS
St. Mary's Hospital, St. Louis
O'MEARA & HILLS, G. E. QUICK Associate, Architects









IN SCHOOLS
Tippecanoe School, Milwaukee
G. E. WILEY, Architect

IN OFFICES
Office Building, Milwaukee
EDWIN J. KRAUS, Architect

IN HOMES
Residence in Benton Harbor, Mich.
PASQUALE IANNELLI, Architect







IN FACTORIES
Bauer & Black Plant, Chicago
Designed by own Engineering Department

IN THEATERS
Landis Theater, Vineland, N. J.
WM H. LEE, Architect

IN STORES
Weiboldt Department Store, Oak Park, Ill.
HOLABIRD & ROOT, Architects

PITTSBURGH CORNING CORPORATION

Grant Building, PITTSBURGH, PA.

PC ARCHITECTURAL GLASS

PC Architectural Glass is distributed by Pittsburgh Plate Glass Company. For list of branches and map, see Pittsburgh Plate Glass Company's General Glass Catalog.

PC Architectural Glass, formerly manufactured and marketed by Corning Glass Works under the name "Corning-Steuben Architectural Glass," is now manufactured by the Pittsburgh Corning Corporation and is distributed by Pittsburgh Plate Glass Company and by W. P. Fuller & Co. on the Pacific Coast.

The Product

PC Architectural Glass represents a high degree of artistic and technological excellence in moulded glass shapes for architectural use. A wide variety of pieces is available in stock, beautifully and individually styled to meet almost any need. PC Architectural Glass lends itself with particular fitness to decorative and sculptural treatments. It may be utilized with great success in the fabrication of many forms of building adornment, such as ornamental windows, band courses, friezes, pilasters, large pieces of sculpture, decorative lighting and ventilating grilles, and modern lighting fixtures. In the field of illumination, particularly, PC Architectural Glass demonstrates a happy combination of decorative and utilitarian features. It offers entirely new possibilities in colorful lighting through the use of colored lights and filters.

Types of Glass

"Pyrex"—A very light, straw-colored glass, useful in general decorative work. Because its coefficient of expansion is extremely low, it is especially suitable for use on building exteriors where wide and sudden temperature variations occur, or for use in illumination where intense heat and cold exist on opposite sides of the glass. Not entirely satisfactory when sandblasted or mirrored.

"Crystal"—A brilliant, water-white glass, useful where no wide variation in temperature occurs.

Finishes

Both "Pyrex" and "Crystal" types of glass can be finished as follows:

(1) Clear . . . mould finish.
(2) Matted or translucent.
(3) Polished.
(4) Combination . . . part matted and part clear.

Grinding and Polishing

(1) Ends ground (satisfactory when appearance of joint in design is not important).

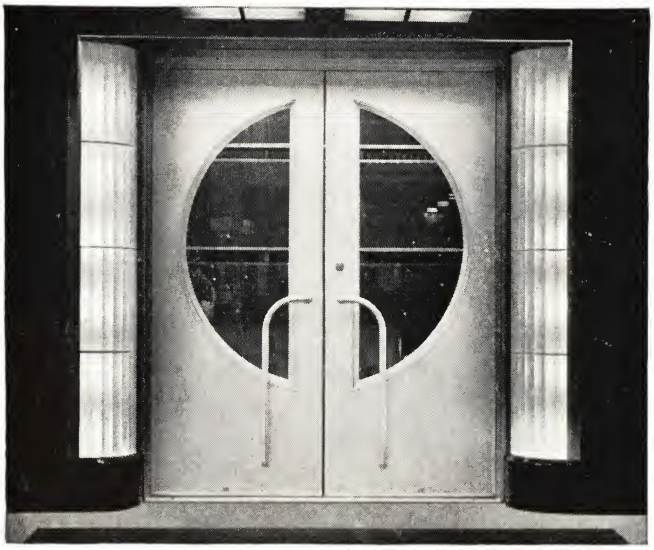
(2) Ends ground and polished (necessary when joints are to be minimized).

(3) Sides ground (when sides are covered with a metal frame or when appearance is not important).

(4) Sides ground and polished (necessary when edges are exposed or joints are to be minimized).

Note: Some panels have flanges on the sides and ends that must be ground (or ground and polished) where the edge of one panel abuts the edge of another and the joint is to be minimized.

Harrisburg, Pa.: Entrance to Grayco Apartments



New York City: Entrance to Revere Room, Hotel Lexington



Decoration

Decoration of PC Architectural Glass may be executed in two fashions:

(1) In relief which is obtained by executing the design on the outside, or front, surface of the piece.

(2) In intaglio which is obtained by executing the design on the inner, or back, side of the glass, thus leaving the exposed surface smooth and extremely easy to clean.

Installation

Architectural Glass, being of a more or less transparent nature, can not be applied like structural glass, that is, with mastic. Instead, it is usually held in place by Pittco Metal Mouldings (see PITTSBURGH PLATE GLASS COMPANY'S catalog on Pittco Store Front Metal) or break moulds formed from non-ferrous sheet metals. The metal usually surrounds the individual pieces of glass and is held to the background by screws or anchors. The architectural draftsman or designer will be able to devise a great many suitable methods of support.

Co-operation with Architects and Designers

In cases where an architect or designer desires to create a special design, not available in the stock pieces of PC Architectural Glass, we are glad to co-operate with him in the execution of his ideas. It is recommended, however, that a Pittsburgh Corning representative be consulted before such designs are prepared, so that the designer may have a thorough understanding of the limitations of the material with which he is working. These limitations, incidentally, are rapidly being overcome by Pittsburgh Corning scientists, as instanced by the recent revolutionary success achieved in casting, for the first time in the history of glass, a sculptured panel of PC Architectural Glass 48x48 inches in size.

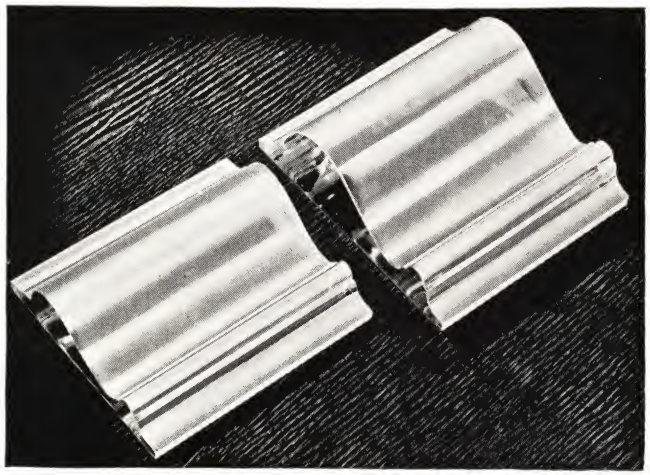
A Tested Product

PC Architectural Glass has proved its splendid decorative and illuminating value in the many outstanding achievements already accomplished by its use. In buildings throughout the country, it has been employed with striking effect. On these pages, only a few examples can be pictured. There are scores of others which we will gladly furnish upon request.

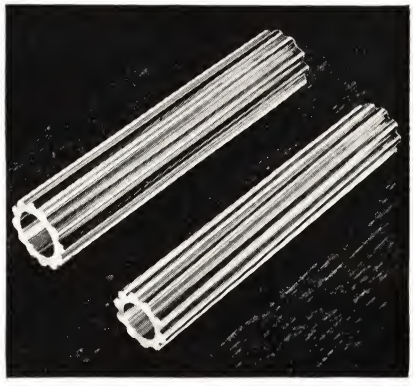


New York City: Three-ton Glass Panel over the Main Entrance to the Palazzo d'Italia, Rockefeller Center

Created by
ATTILIO PICCIRILLI
This glass sculpture symbolizes labor's contribution to civilization



2195

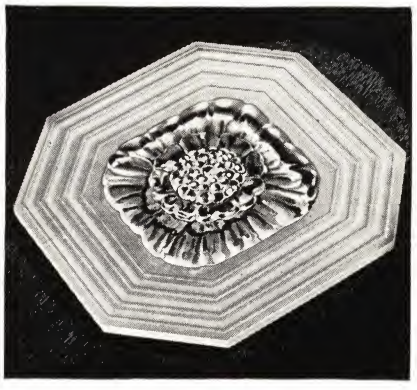


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2147



2005



2009

THE ARMSTRONG COMPANY

Plastic Cements—Putties—Specialties

THREE FACTORIES TO SERVE YOU

241 South Post Avenue
DETROIT, MICHIGAN

4065 South LaSalle Street
CHICAGO, ILLINOIS

319 South Crowdus Street
DALLAS, TEXAS

PRODUCTS

"Tharco" Steel Sash Putty.
Armstrong's Casement Putty.
Armstrong's Caulking Compounds.
Armstrong's Elastic Glazing Compound.
Armstrong's Structural Glass Cement.

THE COMPANY, ITS EXPERIENCE AND PRODUCTS

For over a quarter of a century The Armstrong Company has pioneered in the development of a superior material for each specific need of the industry which it serves. The Company has the unique distinction of continuous specialization in the manufacture of putties, elastic glazing and caulking compounds, structural glass cement and special plastic materials. Having remained exclusively in this one field, the Company's whole resources have been directed towards but one objective—the solution of the many problems encountered in actual field practice under a comprehensive variety of both common and unusual conditions.

METAL SASH GLAZING

The Company manufactures two (2) standard types of metal sash putty, each developed for a specific exposure—inside and outside glazing:

For Inside Glazing—"Tharco" Standard Steel Sash Putty—This product is especially developed for the inside face glazing of industrial type steel sash and has been successfully used on monitor and top hung sash. It can be applied easily and economically on any type of metal sash requiring inside face glazing. Its thorough waterproofness is an assurance of a watertight job.

For Outside Glazing—Armstrong's Special Casement Putty—This product is especially developed for the outside face glazing of residential casements and meets fully the demand for a glazing material which will permanently withstand the extremes of climatic and seasonal exterior exposure. It is equally adapted to similar industrial purposes.

The Company also manufactures a special glazing compound:

For Both Inside and Outside Glazing—Armstrong's Elastic *Glazing Compound*—This product is highly recommended for industrial sash where extremes in vibration or high manufacturing humidities or acid fumes are encountered. It is designed for either inside or outside exposures.

RECOMMENDATIONS FOR GLAZING METAL SASH

1. For regular steel sash (inside face glazing), use "Tharco" Steel Sash Putty or Armstrong's Elastic Glazing Compound.

2. For casement sash (outside face glazing), use Armstrong's Special Casement Putty or Armstrong's Elastic Glazing Compound.

3. Putty or elastic glazing compound must not be applied to wet, frosty, icy, or dirty sash or glass.

4. Glass must be clipped properly before applying putty or compound.

5. No pigment or oil should be added to putty or elastic glazing compound. If material appears stiff, thin to the proper working consistency, using gasoline (not Ethyl) for Steel Sash Putty and Casement Putty and naphtha or Oleum spirits for Elastic Glazing Compound. During cold weather putty and elastic glazing compound should be warmed before adding gasoline.

CARE OF PUTTY AND ELASTIC GLAZING COMPOUND AFTER THEY HAVE BEEN APPLIED

1. After glazing, all movable parts of the sash should be wired closed until the glazing material has set properly.

2. Putty and elastic glazing compound must be painted, the putty after it has set firmly and the elastic glazing compound after the protective skin has formed. The paint should cover the facings of these materials thoroughly to the extent that a small hairline margin of the paint should appear on the glass.

3. Windows should not be washed with a weak acid solution or with water containing caustic soaps. When cleaning paint spots from windows, do not use scrapers so as to destroy bond between paint and glass.

SPECIFICATIONS—GLAZING STEEL SASH

(1) MATERIAL—Putty shall be (*"Tharco" Standard Steel Sash Putty*) (*Armstrong's Special Casement Putty*) as manufactured by The Armstrong Company, (*241 South Post Avenue, Detroit, Mich.*), (*4065 So. LaSalle St., Chicago, Ill.*), (*319 So. Crowdus St., Dallas, Tex.*).

NOTE: *Specify "Tharco" Standard Steel Sash Putty for inside glazing. Specify Armstrong's Special Casement Putty for outside glazing. Include the nearest Company address to the project.*

(1a) The pigment shall contain not less than 40% Imported Whiting. Of the oil content, the proportion of pure Linseed Oil shall be not less than *(40% for Standard Steel Sash Putty) (50% for Special Casement Putty).*

(2) DELIVERY—Putty shall be delivered to the job in the original containers, plainly marked and labeled. Time delivery so that thinner will not be normally required. If thinner is required, only the type and kind specified by the manufacturer shall be used.

(3) STORAGE—Reasonable care shall be exercised in storing putty on the job. The containers shall be protected from the elements.

(4) APPLICATION—Putty shall be applied to dry, clean sash and glass only. The puttying shall be accomplished in a thoroughly workmanlike manner. After back putty has been applied, the glass shall be properly clipped before face putty is applied. Face putty shall be applied with full, smooth, accurately formed bevels with clean cut intersections in such a manner as to prevent sags, cracks or disintegration.

After glazing, all movable sash shall be fastened into place and not moved until the putty has firmly set and only then shall paint be applied.

NOTE: *If Armstrong's Elastic Glazing Compound is specified, substitute this material for those indicated in paragraph (1) and omit clause (1a). Elsewhere, throughout the specifications, substitute the words "Glazing Compound" for the word "Putty."*

ESTABLISHED 1862
By Smith Bowan

PECORA PAINT COMPANY, INC.

MEMBER OF PRODUCERS COUNCIL, INCORPORATED

Mastics, Calking Compounds, Sash Putty, Mortar Stains, Mill White, Paints, Varnishes

Fourth Street and Erie Avenue, PHILADELPHIA, PA.

Products

Pecomastic Putty Type and Troweling Type Mastics; Pecora Bondkote and Pecora Walseal Priming Liquids; Pecora Pointing Compound; Pecora Mirror Mastics; Pecora Transparent Liquid Mirror Backing.

Pecora Calking and Glazing Compound.

Pecora Metal Sash and Casement Putties; Acid Resisting Glazing Putty; Pecora Weathertite Roof Coating; Pecora Roofing Cements; Pecora Klere-Seal Dampproofing Liquid; Pecora Mortar Stain; Pecora Paints; Pecora Mill White; Pecora Enamels; Pecora Rhino-Var Varnishes.

Also Asbestos Furnace Cement, Heat Resisting Cements, Boiler Wall Coatings, Stove Putty, Machine Finishes and Varnishes. Detailed information on request.

PECOMASTICS FOR STRUCTURAL GLASS AND MIRROR INSTALLATIONS

FOR STRUCTURAL GLASS INSTALLATIONS



Red Label



Yellow Label

Pecomastics, the registered name, identifies all Pecora Mastics in the structural glass field. By specifying these products you are assured of utmost satisfaction based on investigation and study of the needs of producers and installers of structural glass and other facing materials. Pecomastics offer: ease and cleanliness of application, proper consistency of material, adhesion, tensile strength, minimum shrinkage, waterproofing properties, permanent elasticity.

However, all Structural Glass Mastics have little shear strength, and cannot altogether be depended upon to prevent slipping, and therefore glass or tile should always be supported or anchored. In certain localities recent building codes and laws specify this procedure. Where optional or not specified, careful consideration and judgment should be exercised in this respect according to the conditions.

Pecomastics are made in two regular consistencies, as follows:

Red Label—For use on winter installations, temperatures not to be above 70° F.

Yellow Label—For use on summer installations, temperatures 70° F. and above.

In cases where an all year around material is desired to cover ordinary temperature conditions, the Yellow Label is generally recommended.

In cases of summer installations for black structural glass, which absorbs heat more readily than other colors and is liable to soften quickly regular mastics, especially on fresh summer installations during extremely hot weather, a third consistency is made in the Black Exterior Mastic:

Green Label—For special use on summer installations for black structural glass.

Black Exterior Mastic—Troweling Type—Code 7HR

This Pecomastic is black because of its heavy asphaltic base and is especially suitable for outdoor use. This does not preclude its use in interiors, although light colored mastics are preferred. It possesses exceptional adhesive qualities, minimum shrinkage, increased tensile strength, and permanent durability, and is easy to apply with putty knife or dispenser. Packed in 40- and 65-lb. kegs, in three consistencies: Red Label, Yellow Label, and Green Label, the extra heavy Pecomastic for black structural glass installations in summer. Of course the Green Label consistency is not as easy to work as other consistencies.

Cream White Interior Mastic—Putty Type—Code No. 110

This Pecomastic for interior use only is designed for those installers to whom time in application is a factor. It is of a putty nature and consistency, and can be rolled into a sausage and applied directly to the glass while being cut into desirable sizes. If preferable it can be formed into a doughnut shape rather than conical—which is the usual procedure with sticky or soft mastics. Packed in 50- and 100-lb. kegs and made in two consistencies: Red Label for winter and Yellow Label for summer.

Natural Color Interior and Exterior Mastic—Troweling Type—Code No. 6a

A Pecomastic, light in color, suitable for exterior and interior use where a lighter bodied material is preferable. It is approximately the same consistency as the Black Exterior Mastic, being applied with a putty knife, or a dispenser. It may be used for exterior work, but the Black is strongly recommended. Packed in 50- and 100-lb. kegs and made in two consistencies: Red Label for winter and Yellow Label for summer.

BEST APPLICATION PRACTICES

How to Prepare Wall Surfaces—Rough wall surfaces are to be preferred to smooth ones. All wall surfaces forming a backing for structural glass should be thoroughly dry and free from all oil, grease, dirt and dust. Prepare surfaces by completely priming with two thin coats of Bondkote or Walseal Priming Liquid and allow to dry thoroughly, at least 12 hours to secure best results. Pecora Bondkote and Walseal penetrate into the wall acting as a binder between the wall and mastic, also serving as a waterproofing. Pecora Bondkote and Walseal are recommended in conjunction with Pecomastic, as the use of any other brand might set up a chemical reaction, weakening the adhesion and bond, and in turn cause failure.

How to Apply—Application of Structural Glass Mastic is usually made with a putty knife or a small pointing trowel. The Mastic is applied in small gobs or pats to the back of the structural glass and from ¾ to 1 lb. per sq. ft. is the proper quantity. The thickness of the pats depends on whether the surface on which the application is to be made is smooth or irregular. If the former, the pats should be only of sufficient thickness, so that when the facing is firmly pressed against the background, that a small space only is left between the structural glass and the wall. If, on the other hand, the wall or background is uneven, then the thickness of the pat must be regulated accordingly, so that the completed job will show a smooth, even face, without irregularity.

Working Conditions—The Mastic and the structural glass should be at approximately room temperature, as varying degrees of temperature in the wall, the structural glass, and the Mastic will give unsatisfactory results.

In new buildings without heat, the Mastic should be kept in a warm place long enough to reach a temperature of 65° or 70° F. This may be accomplished by setting the metal kit of Mastic in hot water. The structural glass likewise should be kept as warm as possible, as two cold surfaces will not properly adhere one to the other. Where possible, the walls on which the application is to be made should be warm.

Pecora Bondkote and Walseal Priming Liquids

Bondkote—A black asphaltic priming paint used for application on all porous surfaces before setting structural glass or other facing materials. Should dry at least 12 hours before proceeding with glass installation to secure best results. The surface on which application is made, however, is a controlling factor.

Walseal—A clear priming liquid, varnish type, for interior use. It forms a perfect bond and seal and being amber in color, overcomes the objection to the use of Black Bondkote.

FOR MIRROR INSTALLATIONS

Black and Cream White Pecora Mirror Mastics do not cause spotting or staining if properly applied. Easy working, quick drying Mastics applied to entire back surface with putty knife or trowel. Wall preparation same as for structural glass.

PECORA CALKING COMPOUND: KNIFE CONSISTENCY—GUN CONSISTENCY

Introduced in 1908, this plastic material is impervious to heat, cold and moisture, or acid fumes. When set, it forms a tough skin on the surface but remains permanently pliable and elastic underneath. It adheres tenaciously to wood, stone, terra cotta, concrete, iron, steel, glass, or any other building material, while its permanent elasticity adjusts itself under all ordinary conditions to movements, due to expansion and contraction, or warping of the surfaces it joins. It is made in two consistencies; knife grade and gun grade. The knife grade is about the consistency of putty and is easily applied with a putty knife or a hand calking tool. The gun grade is lighter in weight and is generally applied with a hand-calking gun. Stock colors are battleship gray and cream white. Other shades furnished if ordered in not less than 30-gal. lots of the gun calking and quart or pint cartridges for use in conjunction with our high pressure calking guns; and 400 to 500-lb. drums of the knife calking compound. Gun grade put up in 1, 5, 10, 30, 55-gal. packages. Knife grade in 12½, 25, 50, 100, 500, 900-lb. packages.

TRADE-MARK

THREE RECOMMENDED METHODS OF APPLICATION

Hand Calking

A satisfactory Hand Calking job can be done by a conscientious mechanic if the compound is forced into the joints with a hand tool, such as a putty knife or small trowel. For this method of application Pecora "Knife" consistency (sold by the pound) should be used.

Hand Gun Calking

The Pecora High Pressure Calking Guns are the most modern in use. If care is taken to force calking compound back into the joint (not merely laying a thin strip of it on top) a good calking job can be done. For this method use Pecora "Gun" consistency (sold by the gallon).

Power Gun Calking

Whereby the gun calking compound is forced into the joint under heavy pneumatic pressure. This is recognized by all authorities as the most efficient method. Installations done by this method will cost somewhat more because a greater amount of calking compound can be forced into any given depth of a joint, but on large construction projects many of the leading architects insist on this method of application, especially for the calking of masonry joints.

Joints to be calked most efficiently should be at least ½ in. in width and preferably not less than ½ in. in depth. If wider than ½ in. or deeper than 2 in., these should be packed with calking cotton to within not less than ½ in. of the face surface and the remaining space should be filled with calking compound. The use of oakum for packing a joint (especially a masonry joint) should be avoided, as oils in the oakum are likely to stain stone.

All joints to be calked should be built up or cut out square down the sides (not V-shape), and they should be thoroughly cleaned of all dust, dirt and loose matter before the calking compound is forced in. Otherwise the calking compound cannot bond properly.

If the calking compound is to come in contact with material that is of a very porous nature, the joint should be brushed or sprayed with a coat of Pecora Klere-Seal Dampproofing Liquid that will close the pores, thus preventing undue "suction," which would have a tendency to lessen the life of the compound.

SUGGESTED CALKING SPECIFICATIONS

Materials and Methods—Calking material shall be Pecora Calking Compound as manufactured by the Pecora Paint Company, Inc. of Philadelphia. (Specify color and consistency.)

Calking Wood Frames—After staff beads have been removed by the carpenters, all exterior wooden window frames and wooden door frames shall have joints between wood and masonry (including at heads and sills) thoroughly air cleaned and calked, after which the staff beads shall be set in place by the carpenters. In all joints between wood frames and masonry, the calking compound shall be forced to a depth of at least ½ in. in spaces to be provided when frames are set (see "Masonry Work").

Calking Metal Frames—All exterior metal frames for steel sash or for doors shall have joints between metal and masonry (including at heads and sills) thoroughly cleaned and calked. In all joints between steel frames and masonry, the calking compound shall be forced to a depth of at least ½ in. in spaces to be provided when frames are set (see "Masonry Work").

Masonry Work

Jointing of Terra Cotta and Masonry for Calking—The joints of all copings, cornices, gutters, belt courses, base courses, or other projecting members as specified under "Calking" shall generally be not less in width or thickness than ½ in., unless otherwise shown or specified. The mortar of all such joints shall be kept back or raked out to a depth or not less than 1 in., or more than 1½ in., and left ready to receive the calking compounds as specified.

Calking Joints in Masonry and Terra Cotta—Thoroughly clean and calk all open joints (see "Masonry Work") in copings, cornices, gutters, belt courses, base courses, and any projections beyond the vertical wall whether in terra cotta, stone, or other masonry materials. Joints to be calked shall be all those, whether horizontal or vertical, on tops, faces and soffits of all copings and of every projecting member, except vertical faces of base courses. The calking shall not be started until after the building is cleaned down and shall start at the top and be continued until completed.

(*Note:* If columns, pilasters or balusters are included in the design, the calking of same, including capitals and bases, should be separately referred to.)

Carpentry Work

Removing Staff Beads for Calking—At the proper time remove staff beads (unless detailed for reception of calking) from all wooden window frames or wooden door frames to allow for calking as specified under "Calking" and after calking is completed, securely and neatly replace the staff beads and leave ready for painter to putty nailholes and complete painting.

Jointing of Window and Door Frames for Calking—The mortar of all exterior joints between masonry and window or door frames, both wood and metal, shall be kept back or raked out to a depth of not less than ½ in. nor more than ¾ in. and left ready to receive the calking compound as specified under "Calking."



These New Type High-Pressure Cartridge Calking Guns (patent applied for) are great time and material savers. Manufactured in two sizes—"Senior"—approximately 1-qt. capacity; "Junior"—approximately 1-pt. capacity. For exclusive use in these guns, Pecora Gun Calking Compound is packed in non-refillable metal cartridges of approximately 1-qt. and 1-pt. capacities.

FUEL SAVING ADVANTAGES

Efficiency experts are specifying Pecora Calking Compound to seal buildings thoroughly and to make substantial savings in fuel bills by permanently preventing heat leakage in old and new constructions. Practical usage requires Pecora Calking Compound, a material that will not stain wood, paint or masonry, be it marble, limestone, granite, terra cotta, pre-cast stone or concrete. Pecora Calking Compound will not run or melt, shrink or crack in extremes of temperature, caused by varying weather conditions. It adheres permanently to both sides of the joint, giving and taking with any movements to contraction or expansion, thus making every joint so calked a permanent expansion joint.

FOR MORE EFFICIENT AIR CONDITIONING

Modern air conditioning operates more efficiently where the structure is airtight. Calking a new building with Pecora Compound will insure a long life of trouble-free sealing; old buildings may be sealed reducing the size and power of unit necessary to do the job. Besides this initial saving, Pecora Calking will result in better performance and greater operating efficiency. Unless properly calked at all joints, such as around window and door frames, etc., there will be a considerable leakage of heat through such joints, and free passage of moisture, frost, smoke, soot, gases, dust, etcetera, causing rot, rust, or corrosion of casings, damage to interiors and danger to the health of the occupants.

PECORA MORTAR STAINS

Uses—Made to be mixed with lime or cement mortar, or with the two combined, for facing exterior or interior brick walls regardless of the type of structure. Also for mantel facings, fireplaces and hearths of brick, tile, marble, slate, of other materials, for pointing or joining stonework and for introducing color tones into exterior "whitewash."



Properties and Advantages—Offered only in form of pulp or paste; manufactured from selected, finely ground ores combined with extenders and fixatives making non-acid solution; "hoe in" with minimum handling and form strong chemical union with the mortar; produce tones that are rich, uniform, fadeproof; do not cause or increase efflorescence; economical.

Colors—Stock shades: Black, Brown, Dark Brown, Windsor, Red, Buff, Fern Green, Colonial Drab, Amber, Terra Cotta, French Gray. Special shades made to order.

Specifications—All mortar to be colored or stained with Pecora Mortar Stain, manufactured by Pecora Paint Company, Inc., Philadelphia, Pa., using by measure 1 bucket of paste or pulp to 7 buckets of face wall mortar.

Mortar must be cold before mixing in stain. To secure a uniform and smooth shade, "hoe in" stain thoroughly. Keep soft in package by covering with water. Pour this off before using. Do not allow stain to freeze before mixing with mortar.

Note: Mortar varies and takes more or less stain according to richness of lime and quality of sand. Before laying brick it is suggested that a small portion of the stained mortar be taken from the mortar bed and dried out thoroughly to determine whether the proper quantity of stain is being used to produce the shade desired. Depending upon depth of shade desired, the following proportions per 1000 brick, ordinary stretches, will be found to approximate the quantity desired.

Red, Buff, Terra Cotta and Amber—For ⅛-in. joint use 45 to 55 lb.

Brown, Windsor, Colonial Drab, Fern Green, French Gray and Dark Brown—For ⅛-in. joint, use 35 to 45 lb.

Black—For ⅛-in. joint use 20 to 30 lb.

PECORA PAINTS, ENAMELS AND MILL WHITES

Pecora Mill Whites are especially adapted for the interiors of public buildings, schools, hospitals, hotels, apartment houses, factories, textile mills, etc. They have body, dense hiding properties, spread easily, can be brushed or sprayed, and will not crack or scale, producing an elastic sanitary surface that allows no hiding place for germs. Give a durable lasting pure white surface which reflects the maximum amount of light and can stand repeated washings.

Pecora quality may be obtained in paints and enamels for all purposes. Write Pecora Paint Company, Inc., for the best paint for your particular need.

Specify for Finishing Coats—Pecora Mill White Gloss, Egg Shell Mill White, Flat Mill White; for undercoat over primer, Mill White Undercoat; and Pecora Mill White Primer as a priming coat on porous surfaces, rough plasters, soft brick, or cement.

PECORA METAL SASH AND CASEMENT PUTTIES

Metal Sash Putty—Manufactured in three grades to meet varying competitive conditions. They are easy to apply, work freely under the knife, set sufficiently on the surface for painting within a reasonable time and do not wrinkle, sag or form oil pockets. They dry readily by oxidation and will retain life through long period of most exacting conditions, due to vibration and expansion and contraction of metal and glass. Made of blended and processed oils, with first quality pigments and driers.

No. 100—Contains 100% linseed oil. Sets in approximately 48 hours, hardens throughout, yet retains elasticity. Recommended where highest type of glazing is necessary and cost is not a vital factor. Can be used successfully on wood sash also.

No. 70—Contains 70% linseed oil. Sets in approximately 24 hours. Price is attractive and putty will meet all around conditions.

No. 60—Contains 60% linseed oil. Sets in approximately 24 hours. Sets firm in joint, will not crack, creep or fall out. Will not harden in package. Popular for competitive work.

Note: When ordering, be sure to mention grade of putty desired.

Casement Putty—Especially designed for glazing of casement type metal sash. Sets in 24 to 48 hours and remains elastic in final drying. Will not fall out, nor will it disintegrate under exposure to weather conditions during setting period. As casement sash is puttied on the outside, be sure to specify "Pecora Casement Putty."

Acid Resisting Putty "I"—(Made in black only.)

Pecora Acid Resisting Putty is used for glazing the sash in chemical plants, paper mills, or any plant where acid fumes are present. Ordinary oil putties disintegrate under these conditions. Furnished in a consistency ready for application, thereby eliminating "gassing" (adding gasolene).

PECORA RHINO-VAR VARNISH

Rhino-Var is the varnish with many years' experience behind it. Rhino-Var is not the name of a universal varnish, but a certain toughness and wearing quality incorporated in each of Pecora's Special Varnishes. Varnish troubles can be eliminated by knowing what can be expected of it, selecting the correct varnish, and putting it to the use it was made for. For instance —Rhino-Var Interior Elastic Spar may be applied to refrigerators and will not turn white in contact with water. It also works well as a rubbing and polishing varnish, and even as a floor varnish, but Rhino-Var regular rubbing and polishing varnish will not give any other service satisfactorily.

For varnishes, made of the finest combination of high grade gums and oils, specify Rhino-Var—Exterior Weatherproof Spar Varnish, Interior Elastic Spar Varnish, Hard Wear Floor Varnish, Dull Rubbing Cabinet Varnish, or Cabinet Rubbing and Polishing Varnish.

PECORA WEATHERTITE AND ROOF CEMENTS

Liquid Weathertite Roof Coating—Made of pure rock asbestos fiber and slow oxidizing liquid composed of carbon and preservative gums.

Properties—Red, Brown or Black Liquid. Can be applied by any workman on any roof, with no dragging, running or blistering in hottest weather. It flows in between every crack and crevice, concealed holes, etc. It dries and cures by action of the oxygen in the air. When dry, it is about ten times the thickness of paint, and has thus supplanted paint for roof protection because it costs less per gallon and gives greater durability. Estimated covering, approximately 100 sq. ft. per gallon on metal surfaces; 50 to 75 sq. ft. on concrete, wood, asphalt shingles, felt or paper; 40 to 50 sq. ft. on slag or gravel. Black is recommended as it is less costly and more durable.

Results—It will produce a weathertight, one-piece coating which will last eight to ten years. It will fill up and preserve old and hard composition or paper roofs that are full of cracks and about to go to pieces, will stop the leak you cannot find, fill up pinholes, mending leaks around nailholes and along seams. Sparks and cinders will not ignite Weathertite. It is fire-resisting, weatherproof, sunproof, acid and alkali proof.

Plastic Weathertite—For plugging large holes before applying liquid Weathertite. Applied in wet weather or wet places, it will not shrink or crack away.

Pecora Roofing Cement—A paste for laying slate, tile and metal roofs of all kinds—a fine thing for repair work, chimney joints and other places where solder cannot be used. Never washes out, expands and contracts with heat or cold and remains like rubber for years.

PECORA KLERE-SEAL DAMPPROOFING LIQUID

Made of a combination of best water-resisting and waterproofing materials known to present-day science.

Properties—A colorless, liquid compound, limpid as water and absolutely free of jell or stringing; free-flowing, easy working, and adaptable to brush or spray gun. Dries to a flat finish in 10 to 30 minutes depending on weather. Remains unchanged on long standing and under normal temperature conditions. Will not get white or thick in package, nor cause discoloration by whitening or grease on the surface to which it is applied. Estimated covering, average, about 200 sq. ft. per gal., using 2 coats, with greater or lesser coverage depending on porosity and other surface conditions.

Results—First, seals all pores against any penetration of dampness or moisture. Second, eliminates disintegration action of weathering, freezing, and the accompanying cracking and chipping, retards absorption and discoloration by dirt, soot, dust and fading. Also checks efflorescence. Full particulars on request.

18
15

ESTABLISHED 1922

PLASTIC PRODUCTS COMPANY

Glazing Compounds—Putty—Caulking Compounds

6475 Georgia Avenue, DETROIT, MICHIGAN

FACTORIES: CHICAGO, ILL. DETROIT, MICH. JERSEY CITY, N. J.

PLASTOID PRODUCTS COMPANY OF LA., NEW ORLEANS, LA.

Glazing compounds, putty and caulking compounds are a small part of the cost of building construction. But the dissatisfaction, annoyance and expense caused if these materials do not prove satisfactory can be large and out of proportion to their original installation cost. The first consideration therefore in their selection is dependability.

Plastoid (REGISTERED)

Many of this country's largest and finest buildings—office, factory, and residence types—have been glazed and caulked with Plastoid Products.

Putty or Compound—Which to Specify?

Since this company makes both glazing compounds and all grades of putty, its recommendations can be unbiased. It should be understood that each of these materials has its proper use and place. The fact that compounds are more costly to furnish and apply does not in itself give assurance that they are better for certain types of work.

Glazing compounds are formulated to provide a surface skin but remain "rubbery" in body. Their heavy bodied and processed oils and non-drying ingredients provide these characteristics. Therefore they will allow for a certain degree of expansion, contraction, and vibration as well as provide better protection than putty against conditions of excessive humidity and moisture. Consequently, they should be specified where these factors exist.

Putty is formulated to dry hard rather quickly and to set rigidly. Its straight run drying oils and driers provide these characteristics. It is not subject to mutilation after it has set—from children's fingers (as in schools or homes) or from the accidental scrapings of window washers, etc. Because of the lesser degree of viscosity of its oil, it is easier to handle in extreme temperatures.

In general, it is recommended that putty be used except where some unusual conditions exist that warrant the additional expenditure for a glazing compound. The two most frequent conditions are extreme vibration and excessive moisture.

Paint Every Job

Always paint putty as soon as it has firmly set, for its proper protection against moisture and weathering. For most satisfactory service, glazing compound should also be protected by painting.

Plastoid Steel Sash Putty

For *Inside* Glazing on all types of Metal Sash—made of carefully balanced imported and domestic materials. It will not sag, slide or form oil pockets. Glazes easily, dries promptly and adheres readily to glass and metal. Used on the Chrysler Building, New York City, Radio City and many large industrial plants.

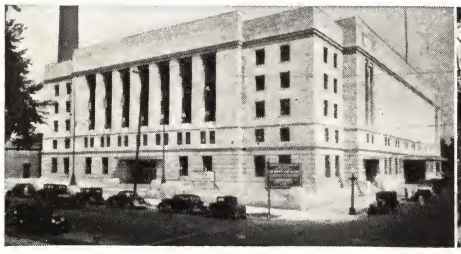
Plastoid Metal Casement Putty

For *Outside* glazing on all kinds of metal sash, both Casement and Office type, is made to meet the special requirements of Casement work, to withstand extreme weather conditions and set quickly to avoid disturbance and distortion. Due to its quick setting character, it should be painted without delay as soon as firmly set.

Plastoid Glazing Compounds

Where continuous vibration is encountered, where excessive humidity is found, and where price per pound is secondary, Plastoid Glazing Compound No. 18 is the solution. Suitable for all types of metal and wood sash. Made from a special formula to dry slowly, and set firmly into an elastic compound which cushions and absorbs vibratory shocks and is not affected by extremes of heat, cold, moisture or vibration. Ideal for laundries, textile and tobacco plants.

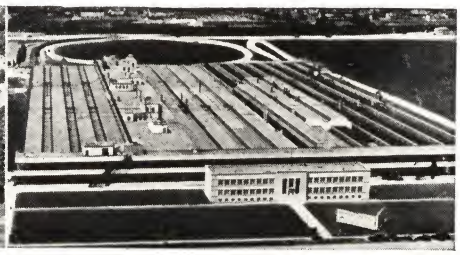
In addition to No. 18 we also manufacture a complete line of Glazing Compounds, a type to meet every possible condition or specification.



Armory at Springfield, Ill.—Plastoid



Specify Plastoid for Residential Work



General Motors, Lyndon, N. J.—Plastoid

Plastoid Monitor Putty

For use on monitors where extreme weather conditions, excessive vibration and disturbance make it particularly difficult to keep putty from leaking and breaking away.

Superior Wood Sash Putty

Superior to a pure linseed oil putty in that it glazes easier, sets more quickly—may be painted sooner and is not dependent on priming. We also manufacture other wood sash putty of all grades and kinds.

Acid-Resisting Putty

Can be used to advantage wherever unusual acid conditions are present, such as distilleries, acid and alkali plants, boiler rooms, etc. The inert materials used in this product provide a putty that has proven exceptionally satisfactory in this difficult class of work. Use on either wood or steel sash.

Plastoid Greenhouse Putty

Designed Primarily for Greenhouse and Sludge Bed Enclosure Glazing—especially formulated for fullest protection against breakage caused by expansion and contraction. Dries with a tough outer skin but remains permanently pliable underneath. It makes a perfect adhesion between the glass and the bar and when once applied, stays on the bars for many years without cracking, curling up or pulling away. Because of its permanent pliability, it expands and contracts readily with every change in bar or sash and so cuts glass breakage and damage to a minimum. Special attention has been given to the workability of Plastoid Greenhouse Putty. It is easy to apply—easy to remove. When glass replacements become necessary in later years, it can be removed cleanly and without trouble. Available in both Gun and Knife consistencies.

Plastoid Aluminum Plastic

For highest quality caulking and glazing work, where cost is secondary. Contains a high proportion of pure aluminum powder which forms a metallic surface film that shuts out moisture completely. Weatherproof, waterproof, vibration-proof. Will not slide; remains elastic. Adheres lastingly to glass, wood, metal or stone, without shrinking, bleeding or staining. It has a natural bright aluminum color, making it ideal for use with aluminum, chrome or stainless steel.

Six Different Consistencies—

B—Thin brushing consistency for use under canvas or where a very thin coat is required.

CB—A somewhat thicker consistency, for heavy brushing or small gun nozzle.

C—Regular gun consistency, for use with medium size gun nozzles to fill small cracks or seams. This is the most popular consistency, and is recommended for all general purposes.

C1—A somewhat heavier consistency for use with large gun nozzles to fill large openings.

C2—The heaviest caulking consistency for use with a power gun or knife.

K—Putty consistency for regular sash glazing *only*. To be applied with knife.

Caulking Compounds

Supplied in both knife and gun consistencies and in all colors. Adheres permanently, without staining, to all types of building materials. Will not crack, wrinkle, sag or dry out, and will adjust itself to ordinary warping, expansion and contraction. The Gun consistency made in two grades "Regular" and "A" grade; for Government, State or particular work specify the "A" grade.

Other Plastoid Products Are

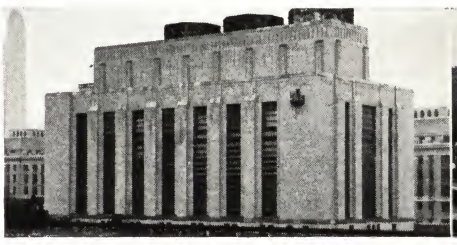
Primeless Putty
Pure Linseed Oil Putty
White Lead Putty
Crane Joint Cement
Showcase Cement
Aquarium Cement
Government Specification Putty

Special Putty to Specification

When special glazing compounds or putty are required, let Plastic Products Company serve you with its modern, well equipped laboratory and up-to-date manufacturing facilities. We are prepared to fill orders for special compounds and putty to meet specifications.

Consultation Service

The Plastic Products Company welcomes inquiries from architects, regarding any special problems or unusual conditions to be considered, and places at their disposal varied and extensive experience.



Central Heating Plant, Washington, D. C.



Federal Reserve Building



Department of Justice Building

H. B. FRED KUHLS

OFFICE AND FACTORY
6411-6423 Third Avenue
BROOKLYN, N. Y.

TELEPHONE
Sunset 6-2867

REPRESENTATIVES

CHARLESTON, S. C., Wm. M. Bird & Co.
CHICAGO, ILL., Fred J. Barker, 9 So. Clinton St.
CLEVELAND, OHIO, Upson Walton Co., 1310 W. 11th St.
DALLAS, TEX., Macatee, Inc., P. O. Box 245
PITTSBURGH, PA., Fort Pitt Mfg. & Supply Co., 116 Seventh St.
PORTLAND, ORE., E. E. Gilmer, 316 S. E. Madison St.
SEATTLE, WASH., McCune Merifield Co., 303 Washington Mutual Bldg. and Tourtellotte-Bradley, Inc., 4th Floor, Whit Bldg.
SAN FRANCISCO, CAL., McCune Merifield Co., 231 Sansome St.

For Kuhls' Elastic Waterproofing Compositions and Coatings, see File Index

KUHLS' ELASTIC GLAZING AND CAULKING COMPOSITIONS

Kuhls' Elastic Caulking Composition

A *non-staining* elastic composition for caulking between masonry and window or door frames of wood and steel. It is made in any color to harmonize with that of the adjoining material. Stock color is light gray. When set, a smooth tough skin is formed on the surface which remains elastic at all times. It yields slightly to atmospheric conditions, yet always makes a tight joint. It is not affected by vibration, heat, cold or moisture. Adheres strongly to wood, metal glass, etc., bedding perfectly and always making a tight joint. Acid fumes have no affect on it. Furnished in two consistencies:

Knife Grade—Shipped in 1, 2 and 5-lb. cans; 12½, 25, 50 and 100-lb. pails and drums.



Manufacturers Since 1889

Gun Grade—Shipped in drums of 1, 3½, 5 and 7-gal.; also in ½-bbl. (35-gal.) and 1-bbl. (50-gal.)

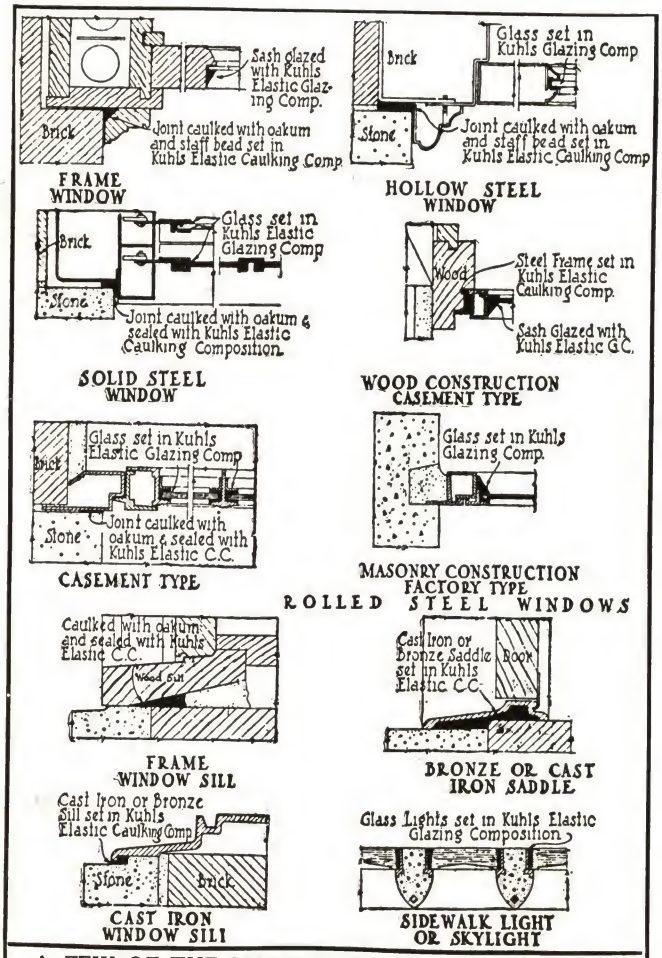
Specifications for Kuhls' Elastic Caulking Composition

Caulking Exterior Wood Windows and Door Frames—For new or old frames, the staff bead shall be removed and the joint between the frame and the masonry on all sides, jamb, head and sill, shall be completely filled with Kuhls' Elastic Caulking Composition so that it will project out beyond the masonry. The staff bead, when placed in position, shall be pressed into the Elastic Caulking Composition.

If the joints are wide and deep on old work, they shall be caulked with oakum to within ¾ in. of the surface; then the remainder of the joints shall be filled with Kuhls' Elastic Caulking Composition as for new work.

Caulking Steel or Metal Frames—When metal frames are set in masonry after opening has been built, the inside edge of the masonry opening or the frame shall be buttered with Kuhls' Elastic Caulking Composition and the frame pressed into place and secured.

Where frames are already set, Kuhls' Elastic Caulking Composition shall be used to thoroughly caulk between the frame and the masonry, at head, jamb and sill.



A FEW OF THE MANY USES OF KUHLS' ELASTIC GLAZING AND CAULKING COMPOSITIONS

Kuhls' Elastic Glazing Composition

For glazing skylights, conservatories, bedding and glazing of glass in steel or sheet metal frames and all other glass construction work. It is an ideal material for this purpose as it is elastic and its elasticity is retained indefinitely; it never sets hard or becomes brittle. This feature prevents breakage of glass—especially important in the case of wire glass. Its use is economical as it is double the bulk of white lead putty and because it lasts indefinitely. Furnished in *Knife Grade* and *Gun Grade* in same quantities as Kuhls' Elastic Caulking Composition previously described.

Specifications for Kuhls' Elastic Glazing Composition

For Bedding and Setting Glass in Sash, Doors, Skylights, Conservatories, Marquises, etc.—Kuhls' Elastic Glazing Composition shall be used in the same way as ordinary putty in bedding and puttying glass. For wood sash and doors the wood shall first be primed; or, on old work, the wood sash and doors shall be scraped and painted before setting the glass. For metal or metal covered sash and doors, the glass shall be bedded in the glazing composition and then secured in place with metal clamps, sprigs or mouldings, or the composition smoothed off, depending on the construction.

General Specification (Under Glazing)—All glass, unless otherwise specified, required for sash and doors of metal, metal covered or wood, shall be bedded and set or puttied with Kuhls' Elastic Glazing Composition (manufactured by H. B. Fred Kuhls, Third Avenue and 65th Street, Brooklyn, N. Y.). It shall be secured either by clamps or metal or wood mouldings, sprigs, supplied by other contractors, or puttied as required.

The Elastic Glazing Composition shall be delivered at the job or factory, where glazing is to be done, and is not to be opened until after the inspection and approval of the architect.

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THE TRADE MARK OF
SUCCESSFUL STORES *EVERYWHERE*-
MODERN, BRILLIANT

BRASCO

STORE FRONTS

Brasco MODERN STORE FRONTS

A COMPLETE LINE FROM SIDEWALK TO COPING

In Both SOLID ROLLED and EXTRUDED Constructions

Brasco furnishes all units of the modern store front — sash and bars, jamb and sill covers, concealed awning boxes, awning hoods, flush all-metal bulkheads, showcase doors, entrance doors, transom covers of various widths, pilaster and post covers, panels and entrance ceilings, metal facia, push bars, grilles in standard or special pattern, transom ventilator sash, door frames, metal display letters, ornaments, thresholds, kickplates, and other complementary items.

ALL MODERN METALS AND FINISHES

Including:

ROLLED STAINLESS STEEL
(Genuine 18-8 Non-magnetic Alloy)

ROLLED BRONZE

ROLLED ALUMINUM
(in ALUMILITE, Polished or Satin Finishes)

SOLID COPPER

EXTRUDED ALUMINUM
(in ALUMILITE, Polished or Satin Finishes)

EXTRUDED BRONZE

Many of the Extruded shapes can be successfully used in conjunction with the Rolled members. The ROLLED and the EXTRUDED Constructions are so designed as to be largely interchangeable.

Special Shapes to Specifications

The growth of the ultra-modern trend in store fronts has created a demand for highly specialized treatments. While the Brasco line comprises a most comprehensive array of standard shapes, metals and finishes, we are also in position to execute special work of all descriptions. Special finishes are available as well, thus making possible installations of outstanding character and individuality.



Modern Plant of Brasco Mfg. Co., Harvey, Illinois. Manufacturers of Brasco Store Front Constructions, Fabricated Metal Work, and Rolled Metal Mouldings and Shapes in All Metals and Finishes.

BRASCO MANUFACTURING CO.

HARVEY (*Chicago Suburb*) . . . **ILLINOIS**

Distribution and Complete Stocks Throughout United States and Canada, Assuring Prompt and Effective Installation

DETAILS AND SAMPLES: Write for complete Portfolio of Details (21 sheets) showing both Rolled and Extruded Constructions. Life-sized samples also available.

CATALOG No. 40
(Copyright 1939, Brasco Mfg. Co.)

Printed in U. S. A.

FOR STRENGTH · SAFETY · BEAUTY · PERMANENCE

Brasco Construction is characterized by its adaptability to the requirements of modern design, chiefly because of the completeness of the line.

From *Berlands*, shown below, utilizing a series of completely factory-fabricated second floor windows, to the unusual height requirements of the *Child's* installation, the varied curves of *Stover's* (center photograph) and the large attractive stainless steel facia, which enhances the attraction value of the modern Montgomery Ward building, the variety of application is apparent.

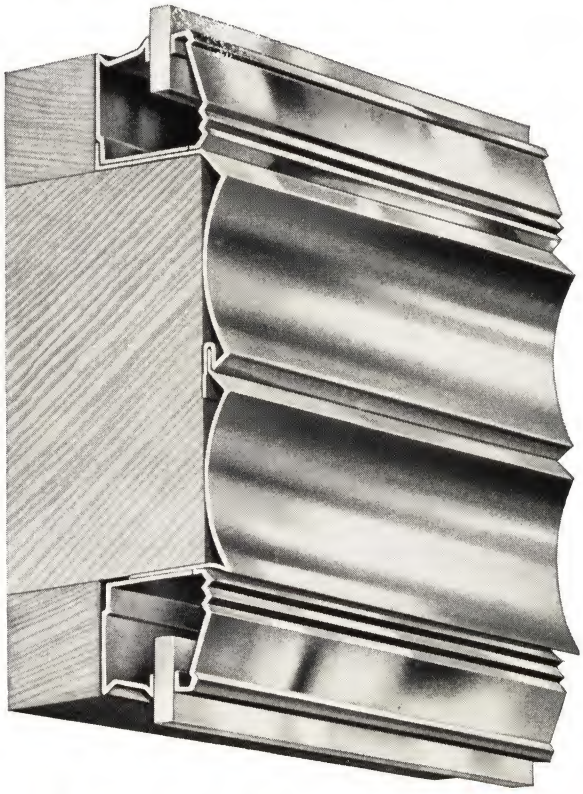








DISTINCTIVE, PERMANENT STYLE AND BEAUTY



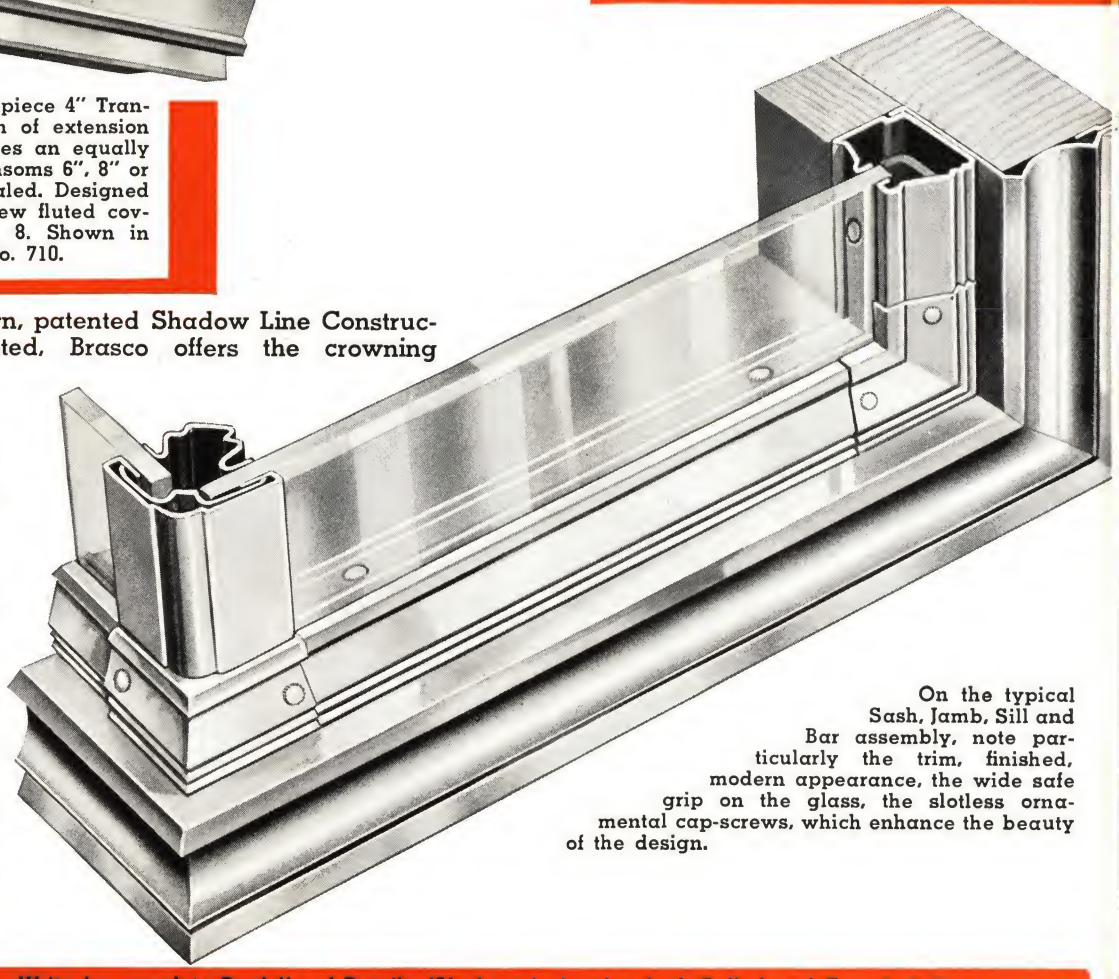
The distinctive No. 745 2-piece 4" Transom Cover. The addition of extension moulding No. 746 provides an equally unusual covering for transoms 6", 8" or wider. All screws concealed. Designed to harmonize with the new fluted coverings on pages 5 and 8. Shown in conjunction with Sash No. 710.



Standard Sill Covering No. 717, adjustable in width from 1⅝" to 1¾", shown with Sash No. 710. Other Sill Coverings are provided in the complete Brasco line, including one-piece members and the new fluted coverings.

In this ultra-modern, patented Shadow Line Construction here presented, Brasco offers the crowning achievement of more than thirty years of store front manufacture. Designed throughout in the modern spirit, the distinctive charm of its clean-cut, parallel lines and new fluted members, give immediate character to any store front.

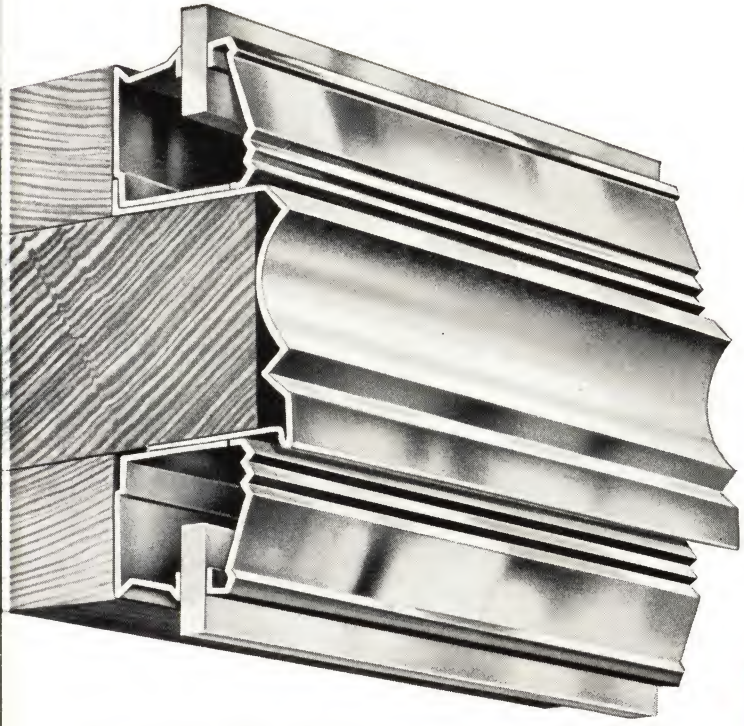
Built on sound principles of construction, with proven features assuring special strength and unusual glass safety, Brasco is characterized by outstanding durability.



On the typical Sash, Jamb, Sill and Bar assembly, note particularly the trim, finished, modern appearance, the wide safe grip on the glass, the slotless ornamental cap-screws, which enhance the beauty of the design.

DETAILS AND SAMPLES—Write for complete Portfolio of Details (21 sheets) showing both Rolled and Extruded Constructions. Life-sized samples also available.

A COMPLETE UNIFIED LINE



Above—No. 7038 1⅝" Transom Cover, shown with No. 710 Sash top and bottom.



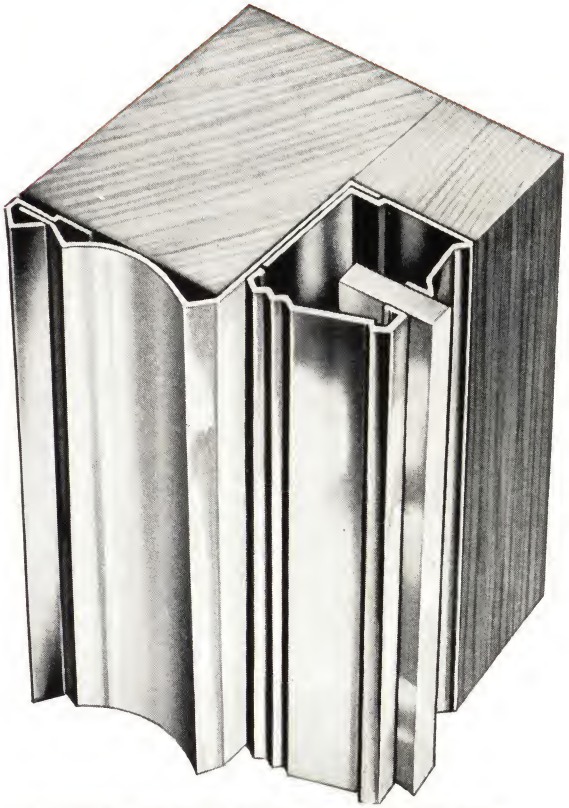
Above—No. 7017 fluted Sill, providing for width variation of 1⅝" to 1¾", shown here with No. 710 Sash. A one-piece fluted Sill member, No. 7039, is also available.

Attractive stock Covering Members (rolled) in fluted, modern design.

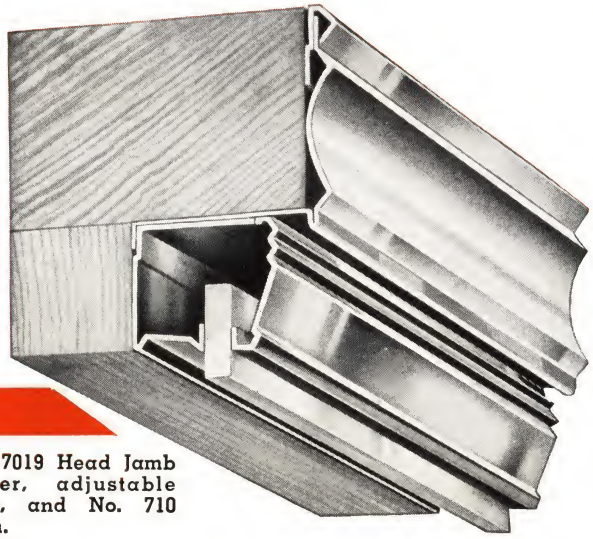
Shown here are several of the essential members which form part of a complete, unified line. A few additional sections are shown on page 8. (For the complete list, see our Portfolio of Details.)

These newer members complement the established Brasco line of standard rolled Covering Members.

Prompt and effective installation of modern, brilliant Brasco Store Front Construction is assured by national distribution.



No. 7017 Side Jamb Covering, adjustable from 1⅝" to 1¾", with No. 710 Sash.

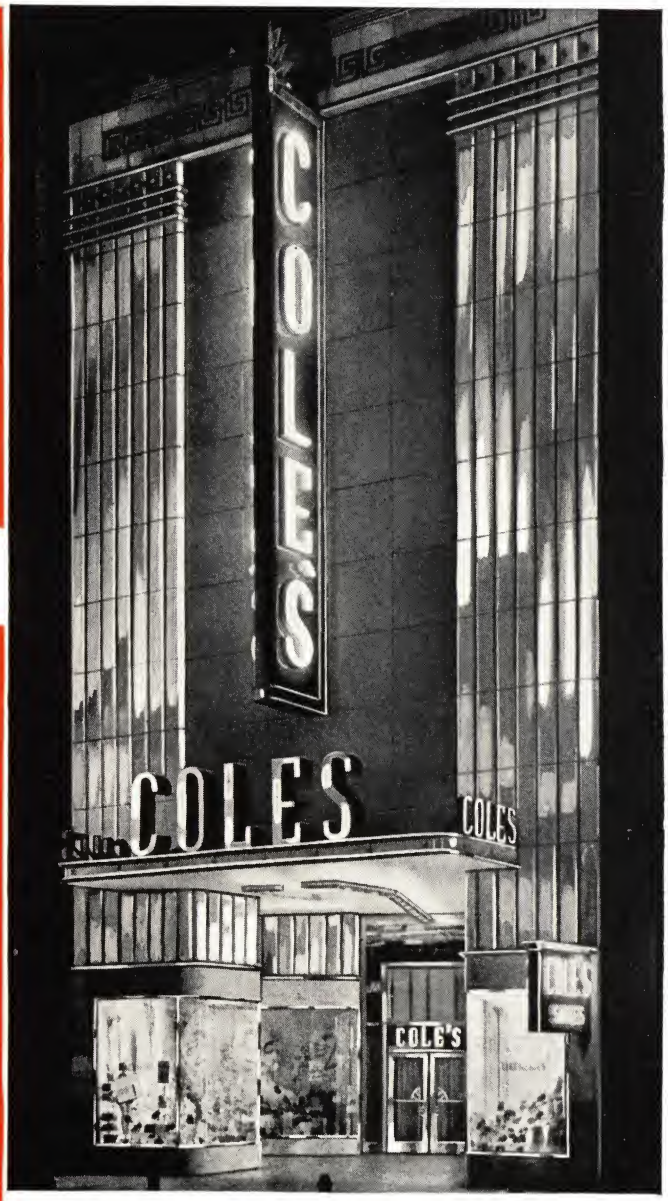


No. 7019 Head Jamb Cover, adjustable type, and No. 710 Sash.

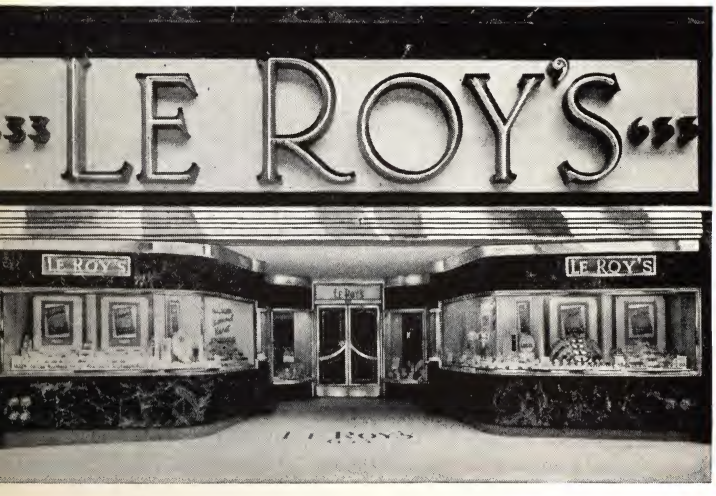
BRASCO MANUFACTURING CO.

MODERN STORE FRONTS FOR EVERY SERVICE—







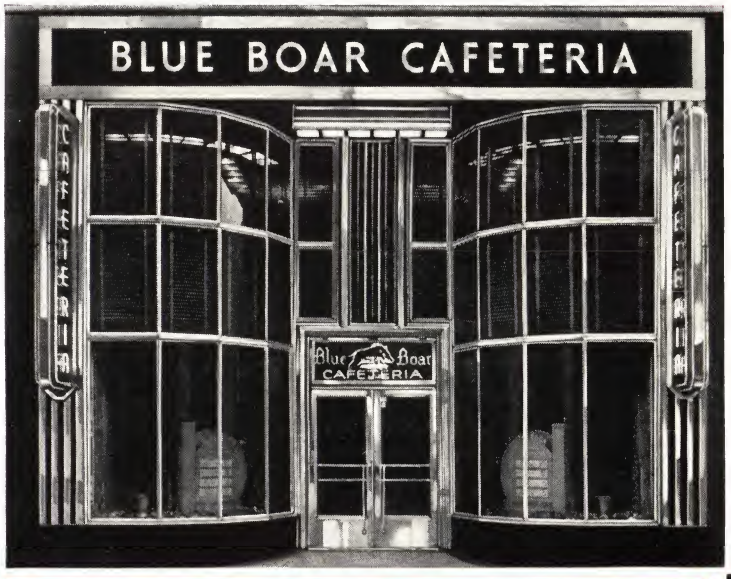




OF EVERY SIZE—IN EVERY METAL—AT EVERY PRICE





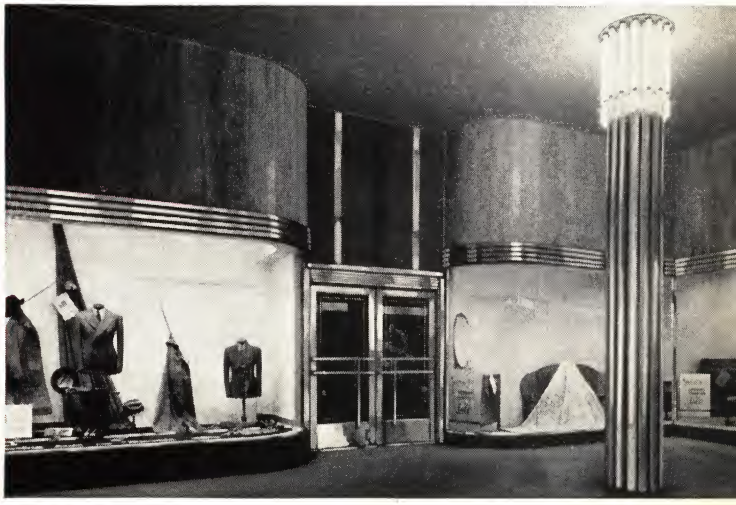




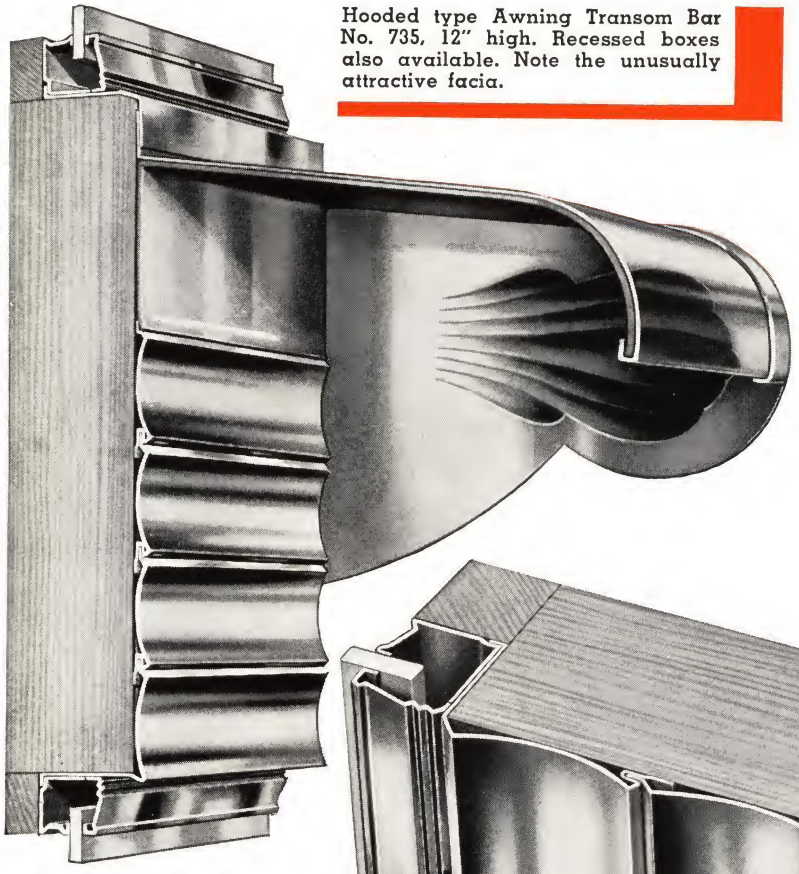
The illustrations shown on these pages are practical proof of the individuality and distinction afforded by brilliant Brasco Construction.

Note particularly the outstanding use of second floor display windows in the photographs at upper right and center left, and the unusual attractiveness of the broad Brasco-fabricated metal coverings and marquee.

The *Coles* front provides striking day and night attraction value while the flush-type, all-metal bulkhead on the Maling front provides unusual individuality. The lower right hand photograph illustrates the surprising depth and generous proportions of the arcade entrance to the *Liebman Store* shown immediately above.

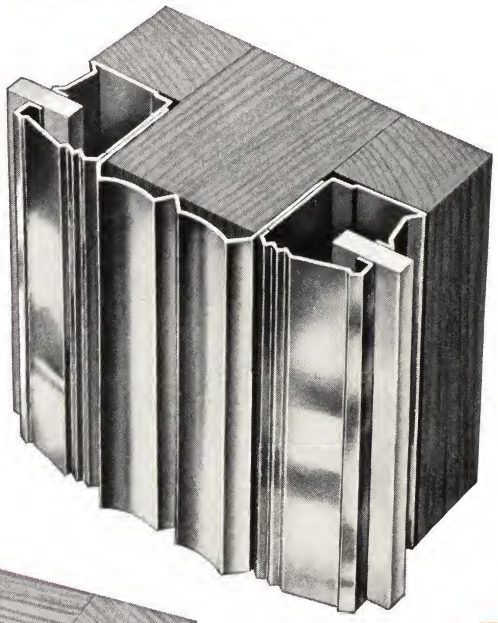


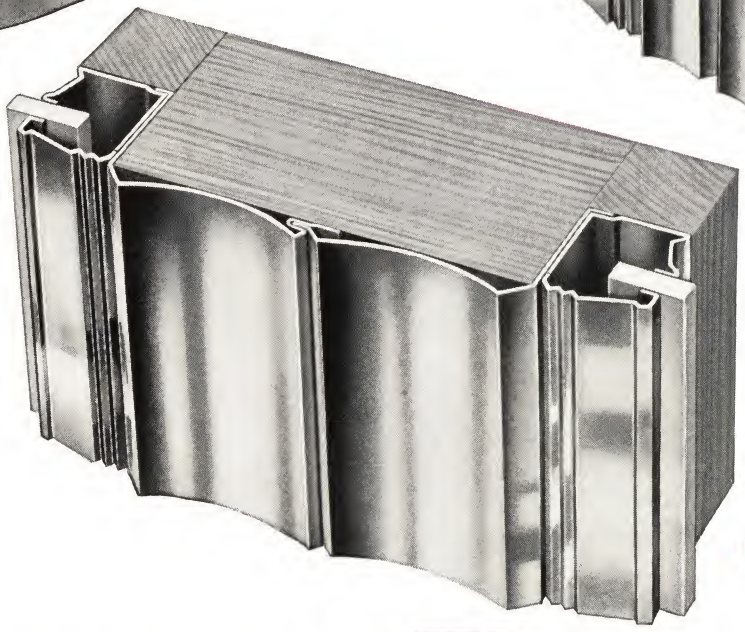
BACKED BY THE EXPERIENCE OF OVER 30 YEARS



Hooded type Awning Transom Bar No. 735, 12" high. Recessed boxes also available. Note the unusually attractive facia.

New 1⅝" Mullion Cover No. 747 shown in conjunction with No. 710 Sash. Designed to harmonize with fluted coverings shown on pages 4 and 5.





Standard 4⅜" Mullion Cover made up of No. 745A and No. 748, designed to harmonize with fluted sections shown on pages 4 and 5. This can be increased in width by the use of 2" fluted Filler member No. 746, providing outstanding beauty for wide coverings.

DETAILS AND SAMPLES:

Write for complete Portfolio of Details (21 sheets) showing both Rolled and Extruded Constructions. Life-sized samples also available.

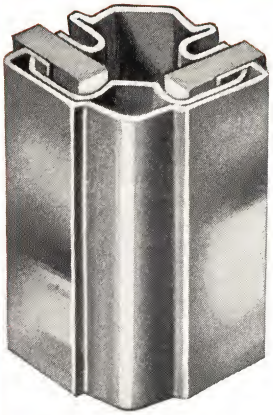
BRASCO BARS

Continuous steel reinforcement inside the face member is an outstanding feature of all Brasco Bars, AND HAS BEEN FOR 30 YEARS, providing extra strength and glass safety.

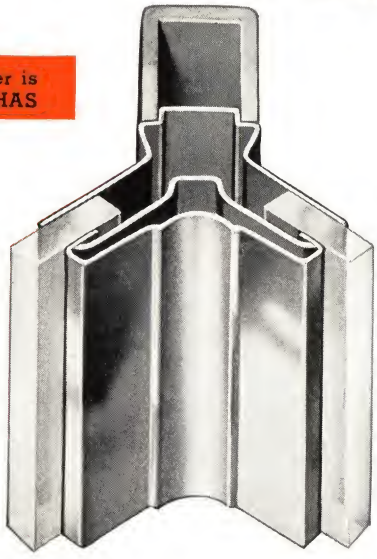
In addition to this reinforcement, two sizes of detachable back reinforcements are also available.

No. 440 is shown without back reinforcement; No. 451 with back reinforcement No. S-445; No. 463 with back reinforcement No. 447.

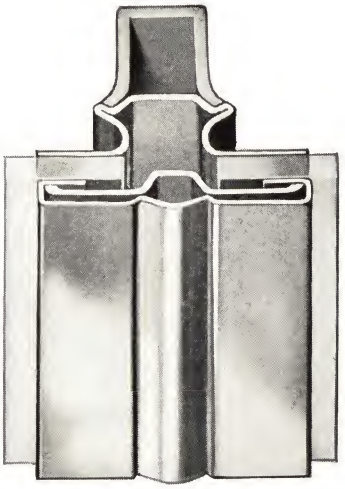
Anchors are available and recommended for all bars.



No. 440 Corner Bar



No. 463 Reverse Bar



No. 451 Division Bar

BRASCO MODERN STORE FRONTS MEAN BUSINESS!



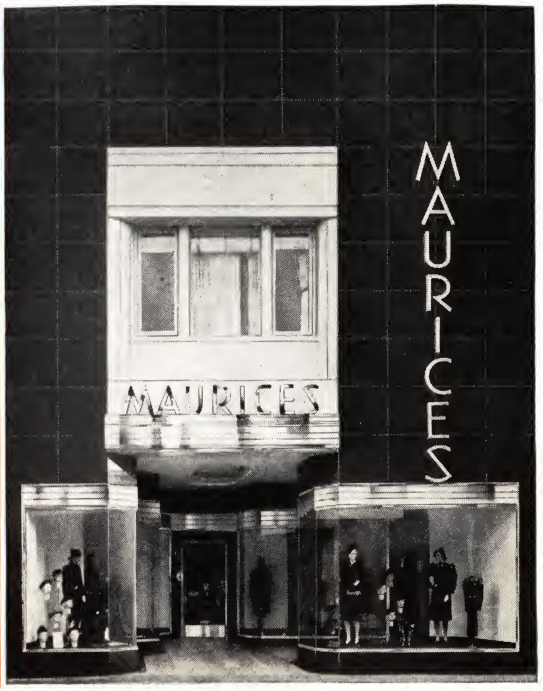




At the right, the old-fashioned building that was remodeled into the smart, modern Brasco Store Front shown above.



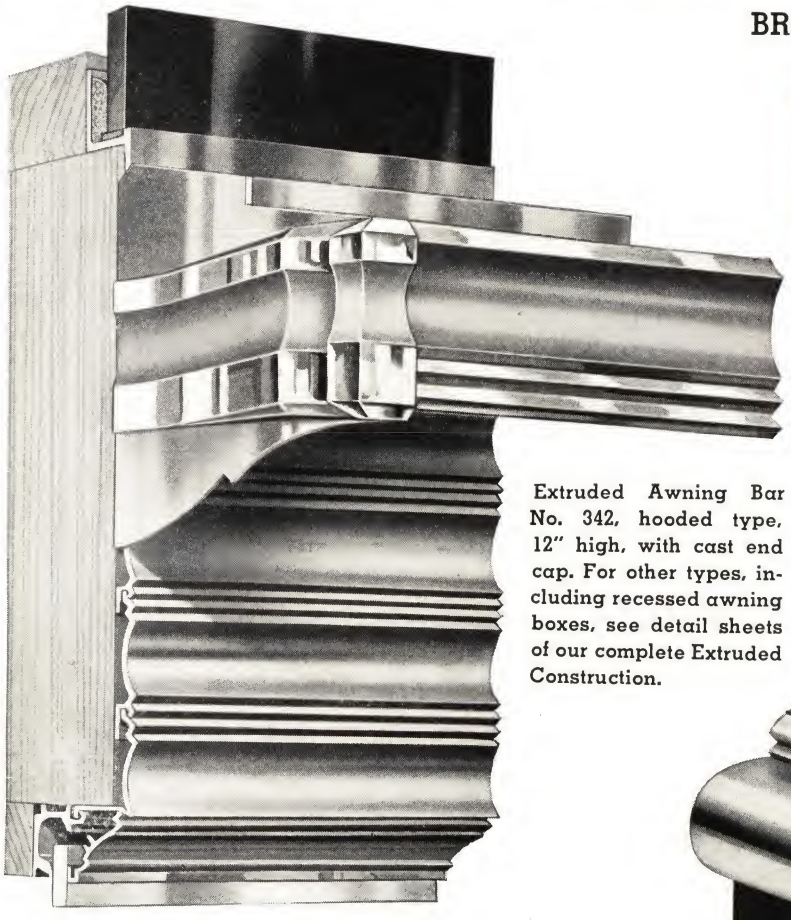




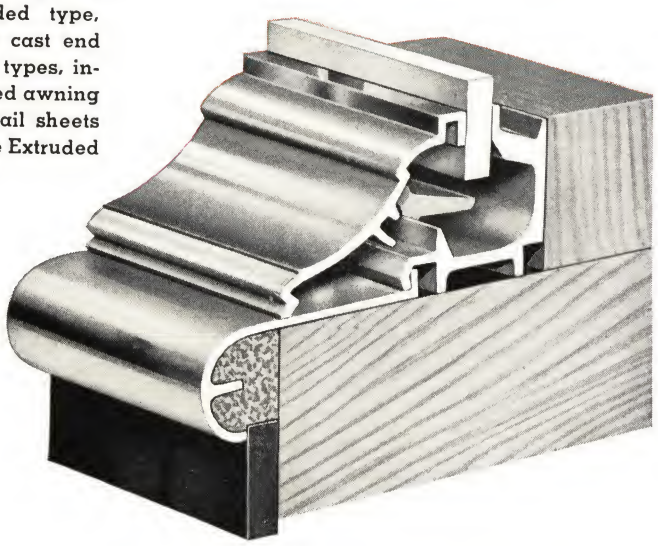
MODERN CLEAN-CUT DESIGN

BRASCO EXTRUDED CONSTRUCTION

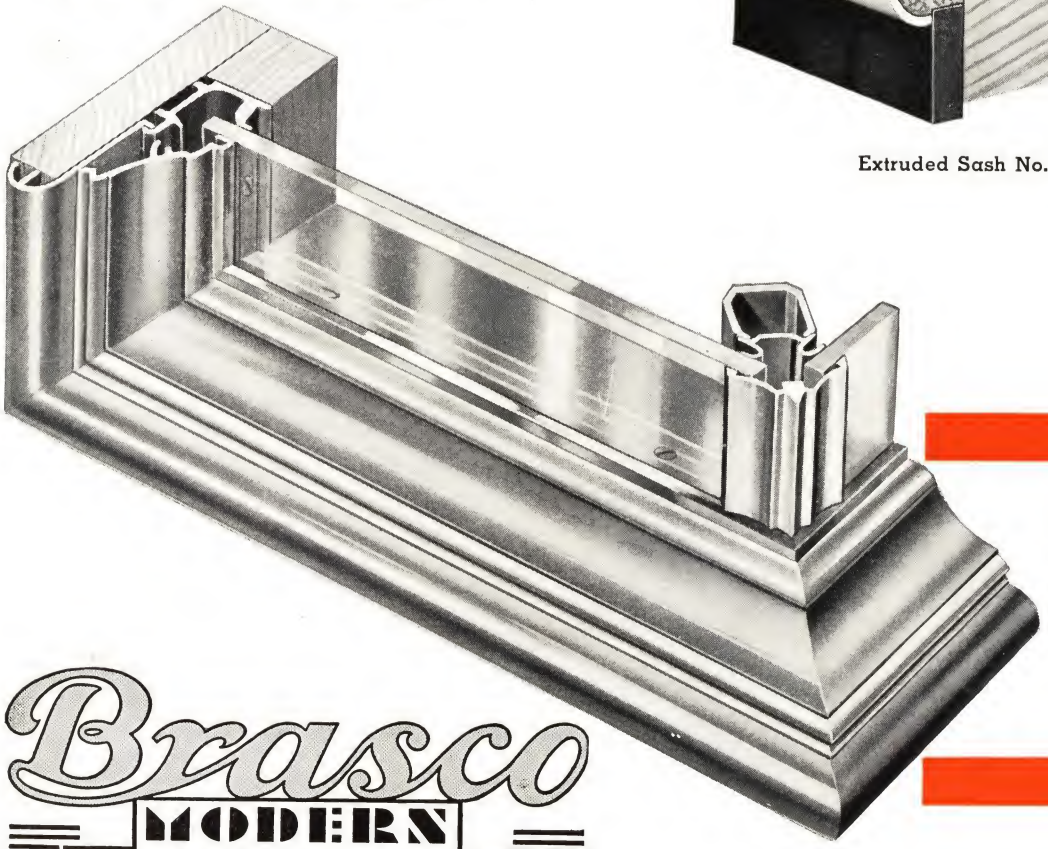
In addition to the long established lines of Rolled Construction, Brasco has offered complete stock Extruded systems for over eleven years. On these two pages are shown only a few illustrations of typical units of the new, beautiful Brasco Extruded lines. *(Patents allowed and pending.)*



Extruded Awning Bar No. 342, hooded type, 12" high, with cast end cap. For other types, including recessed awning boxes, see detail sheets of our complete Extruded Construction.



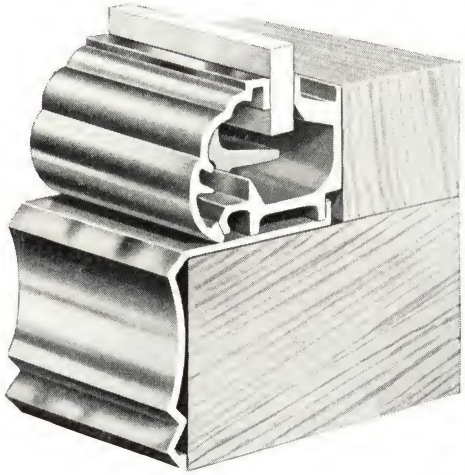
Extruded Sash No. 301 and Sill No. 2030.



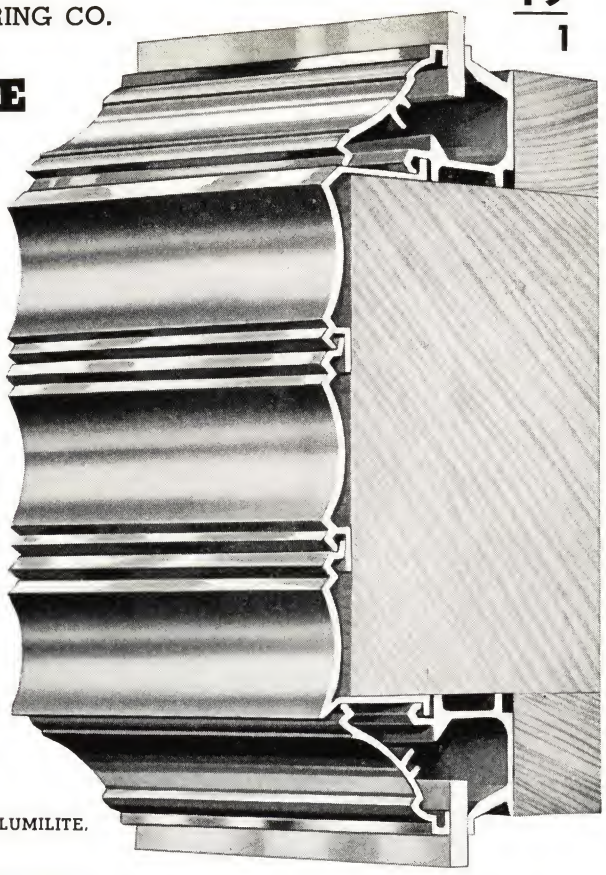
Typical assembly of Extruded Sash, Sill, Jamb and Corner Bar. Shown are Sash No. 301, Sill No. 2030 and Corner Bar No. 2053-2045. Note the interesting modern lines and pleasing proportions.

Brasco MODERN STORE FRONTS

SOUND STRUCTURAL VALUE



Extruded Sash No. 305 with Sill Cover No. 310. This Sill for standard 1⅝" covering is one of many similar members of the complete line.



Extruded Adjustable Transom Bar Section shown with Sash No. 301. Intermediate Filler members may be added to build up unusually attractive covers of varying widths.

A complete line of similar covers for vertical use including pilaster facings, are also provided in stock members.

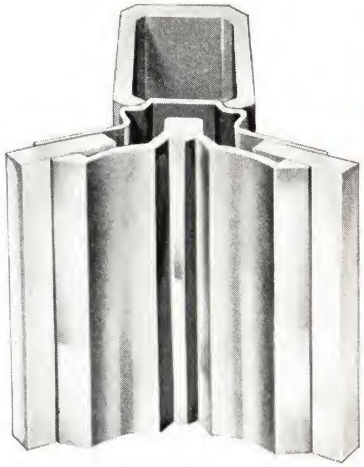
EXTRUDED ALUMINUM (in ALUMILITE, Polished or Satin Finishes) AND

EXTRUDED BRONZE (in Any Standard or Special Finish)

Whether in bronze or aluminum, a complete line of unified Extruded members is available from stock. Three types of Sash are furnished, used with a wide assortment of covering members of all descriptions and for every purpose.

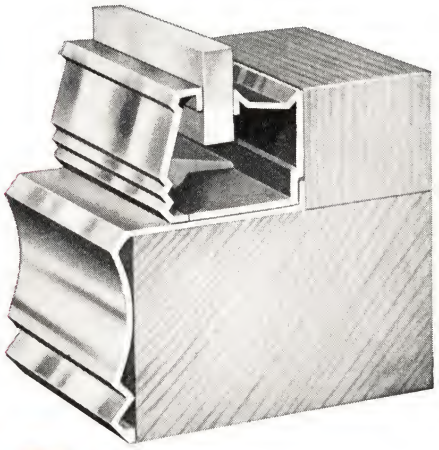
The same sound engineering which has so long characterized Brasco Rolled Construction is incorporated in the Brasco Extruded lines.

The Extruded Constructions and Solid Rolled Lines are so designed as to be largely interchangeable.









Extruded Sash No. 710X with rolled gutter and Extruded Sill Cover No. 310. This combination illustrates the flexibility of the Brasco line, utilizing the smaller concealed screw, flush-type Sash No. 710X, instead of the larger reeded sash, as illustrated above.

8 SHEETS OF COMPLETE EXTRUDED DETAILS

Write for complete Portfolio of Details (21 sheets) showing both Rolled and Extruded Constructions. Life-sized samples also available.

BRASCO

★ A BRILLIANT NAME IN STORE FRONTS



SECTION 19

CONTINUED ⟶

CAPITOL BRONZE CORPORATION

Pioneers in Store Front Construction Since 1905

525 Union Avenue, BROOKLYN, N. Y.

Please Address All Communications to P.O. Box 105, Lefferts Station, Brooklyn, N. Y.

CAPITOL STORE FRONT CONSTRUCTION

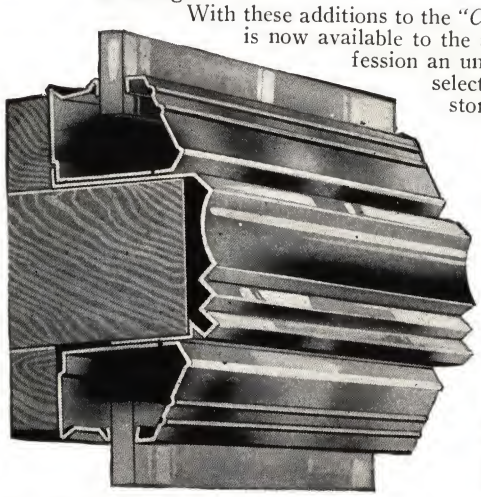
It is with justifiable pride that we introduce our new No. 100 and No. 200 Series.

No. 100 and No. 200 Series constructions are interchangeable and can be used together, combining the strength of extruded metal with the economy of rolled (*semi-extruded*) construction—an interesting combination which can be utilized to very good advantage.

With these additions to the *"Capitol"* line, there is now available to the architectural profession an unusual variety and selection of design in store front construction — *complete in every respect to satisfy all requirements.*

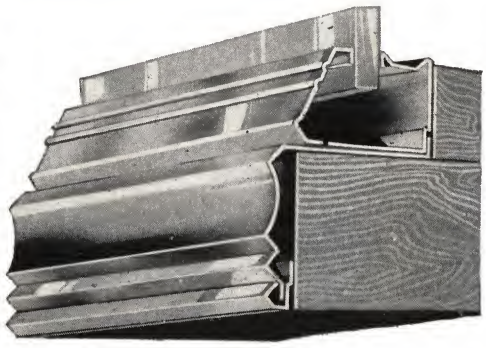
Our No. 50, No. 60, No. 100 and No. 200 Series, offering a wide variety of attractive sash members, and the interchangeability of these sash members with a large selection of Sills, Jambs and Transom members (together with the artistic development of Awning Bar treatments in both concealed and exposed types), provide a range of design to satisfy the requirements and specifications of the most discriminating architect.

The exceptional beauty and high quality of construction represented by *"Capitol"* products are the result of almost thirty-five years' experience combined with persistent pioneering and improvement in store front construction.



No. 140 Transom with Sash No. 100

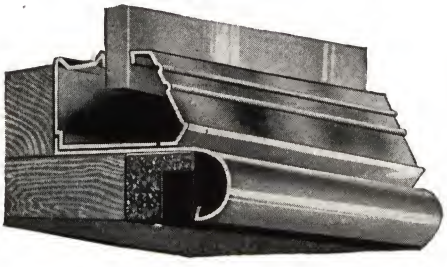




No. 120 Sill with Sash No. 100



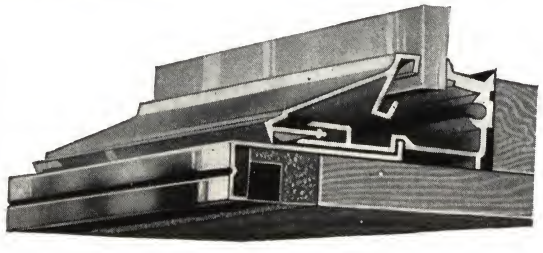
No. 122 Sill with Sash No. 100

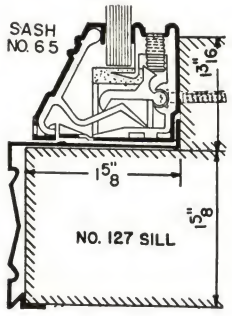


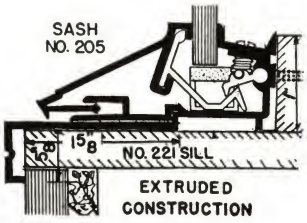


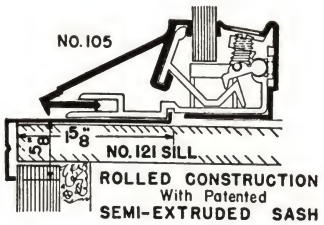
No. 190 Corner Bar with Reinforcement No. 194

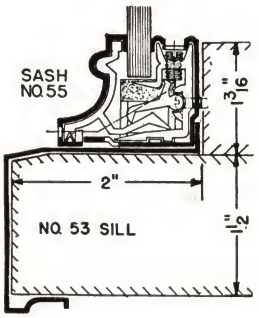
No. 221 Sill with Sash No. 205 (Extruded construction)





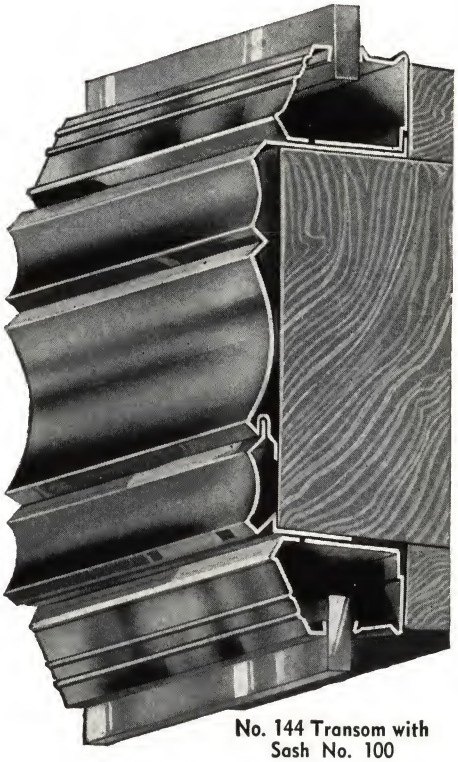








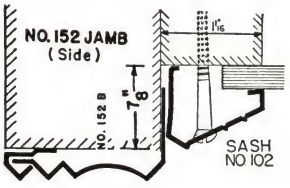
SNAP—ON
MOULDINGS

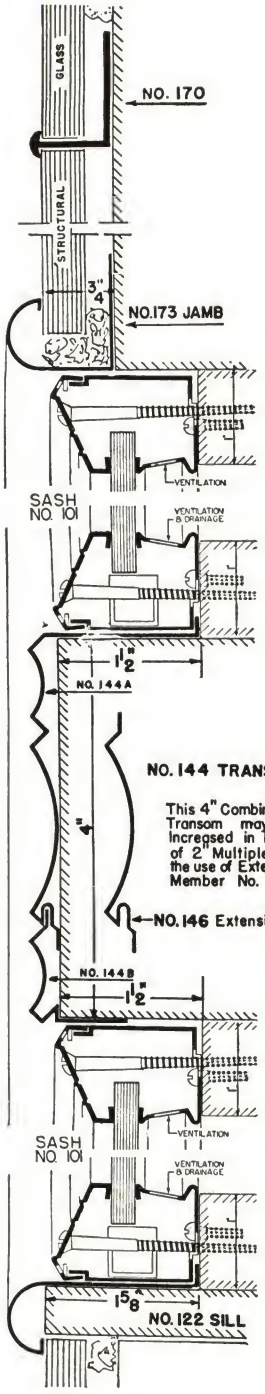


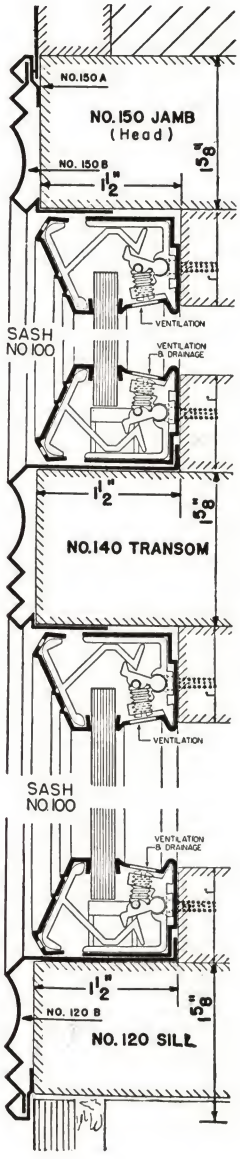
No. 144 Transom with
Sash No. 100

ROLLED
CONSTRUCTION
furnished in
Aluminum
Alumilite
Bronze
Copper
Solid Stainless
Steel

EXTRUDED AND
SEMI-EXTRUDED
CONSTRUCTION
furnished in
Aluminum
Alumilite
Bronze





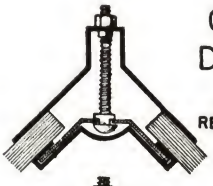


All Details are Half Actual Size

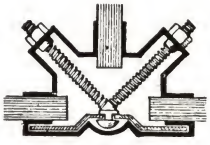
Full size details of *"Capitol"* Awning Boxes, Awning Hoods, Sills, Transoms, Jambs, Sash and miscellaneous Mouldings (rolled and extruded) are shown in our complete catalog. Copy furnished promptly on request.

Special Designs to Architect's Details

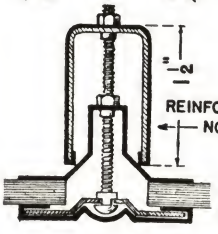
CORNER AND
DIVISION BARS



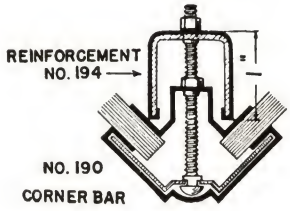
NO. 192
REVERSE BAR



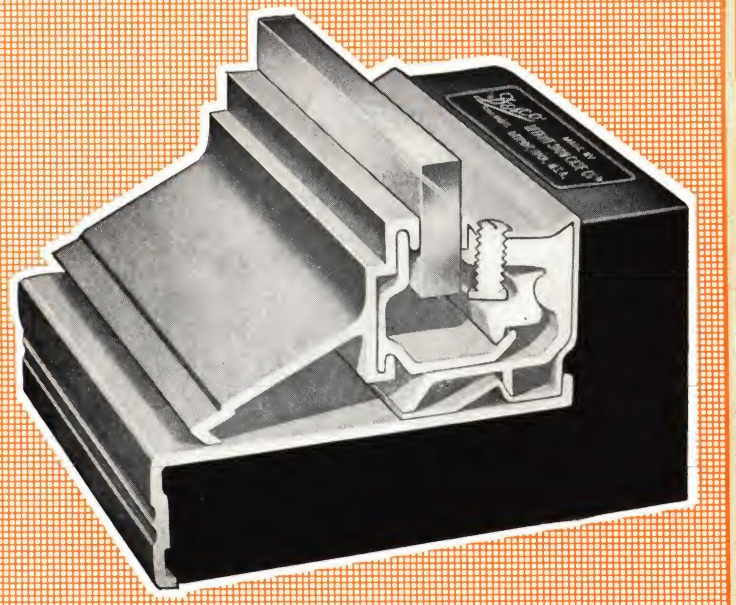
NO. 193 3-WAY BAR



NO. 191
DIVISION BAR



MEMORANDA



U. S. Patent No. 2087516

Desco

STORE FRONT CONSTRUCTION

DETROIT SHOW CASE CO.

Desco METAL STORE FRONT CONSTRUCTION

When you study the superior qualities of DESCO, you'll welcome this modern Store Front Construction. You'll find it an aristocrat, in design and construction . . . a commoner in initial expense . . . and a miser in upkeep cost. Built to stay in style and to stay in service. Compare DESCO and DESCO features!

METALS AND FINISHES

ALUMILITE—For a white metal finish we recommend Alumilite. This modern finish has a soft, pleasing tone and is whiter than the standard aluminum alloys. It is permanent . . . and has a richer, more refined appearance than many of the bright, shiny metals. Also the Alumiliting process hardens, as well as whitens the metal, so that it cannot scratch easily. And it does not show fingerprints—a feature practically unknown in other metals and finishes. With all of these advantages it is comparatively inexpensive.

POLISHED AND SATIN FINISH ALUMINUM ALLOY—These are standard finishes for which there is no extra charge.

BRONZE METAL FINISHES—Bronze metal is furnished in polished or satin finish. Light, medium or dark statuary finishes.

COPPER—Same as for bronze, except that copper cannot be furnished in extruded shapes . . . rolled only.

DESIGN ASSISTANCE

We will be glad to co-operate with architects in designing any type of store front. Our years of experience in planning store fronts of various kinds in all parts of the country well enable our field men to give reliable consulting service. Full size details showing various DESCO combinations sent to architects on request.

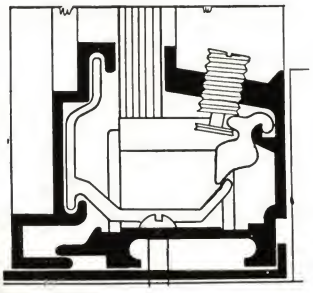
Desco TYPES OF SETTINGS

DESCO makes a most complete line of all extruded, semi-extruded and rolled construction.

On this page and the following we show full size cuts of the several different settings.

ALL EXTRUDED SASH BARS

Extruded face plate and extruded gutter. All extruded DESCO sash is fitted with DESCO patented inside set mechanism. This mechanism is unique and fool-proof, eliminates previous faults. Only two essential members—and these are heavy extruded metal, not easily bent or distorted. No light-gauge stamped metals are used. The extruded cam, concealed inside the gutter, is raised and lowered by means of a flange screw. Action is positive in both directions, cannot become "frozen." The cam engages an extruded draw-bar on the face piece, so that merely turning the screw tightens or releases the outside member. This is the whole operation . . . economical, efficient.

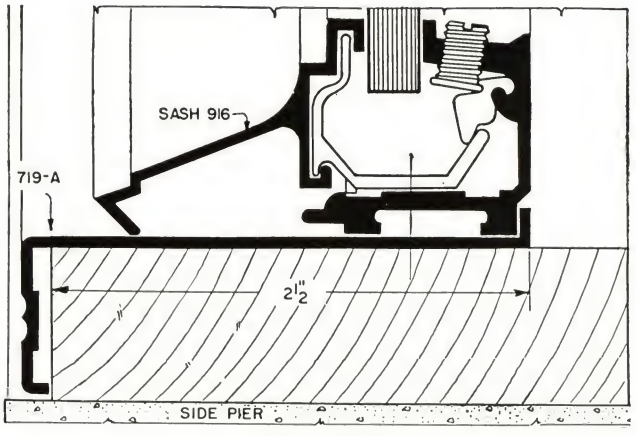


DESCO Setting . . . No. 616
U. S. Pat. No. 2,087,515

No. 616 Sash Extruded face plate and extruded gutter fitted with inside set patented mechanism. U. S. Pat. No. 2,087,515.

NO LOST SCREWS—The screws are so arranged that they cannot be removed—thus facilitating installation and completion of job.

GLASS CANNOT BECOME LOCKED IN SETTING—Caused by settlement or shifting of glass from vibration. The moving parts are so placed that nothing can prevent their functioning. This avoids waste of time in making replacements.



DESCO Setting . . . . . No. 916
U. S. Pat. No. 2,087,515

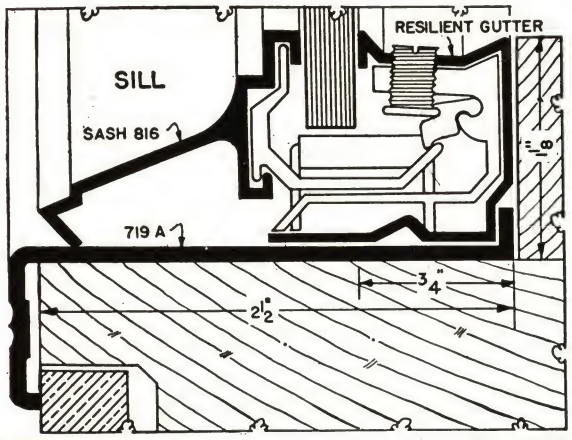
No. 916 Sash Extruded face plate and extruded gutter fitted with inside set patented mechanism. U. S. Pat. No. 2,087,515.

NOTE—The above cut of No. 916 DESCO sash also shows cut of No. 719-A extruded sill cover.

Desco TYPES OF SETTINGS

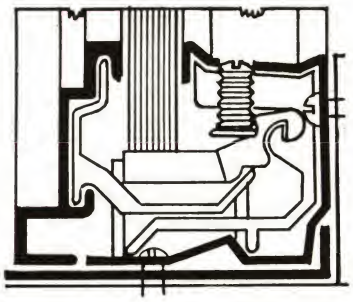
SEMI-EXTRUDED SASH BARS

DESCO semi-extruded sash bars are made with extruded face plates and rolled gutters. Several different types are furnished, some with DESCO inside set patented mechanism and some with outside setting.



No. 816 DESCO setting extruded face plate, rolled gutter, inside set patented mechanism. U. S. Pat. No. 2,087,516.

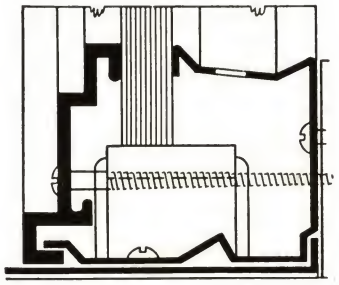
DESCO Setting . . . . . No. 816



No. 116 DESCO setting extruded face plate, rolled gutter, inside set patented mechanism. U. S. Pat. No. 2,087,516.

DESCO Setting...No. 116
U. S. Pat. No. 2,087,516

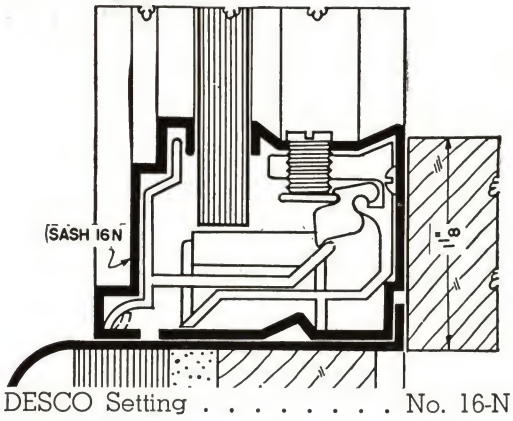
No. 126 DESCO setting extruded face plate, rolled gutter, outside set.



DESCO Setting...No. 126

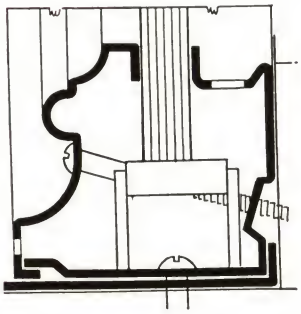
ALL ROLLED CONSTRUCTION

The following DESCO all rolled sash bars are made with rolled face plate and rolled gutters, some with DESCO inside set patented mechanism, some with outside setting.



No. 16-N DESCO setting, rolled face plate, and rolled gutter, inside set patented mechanism. U. S. Pat. No. 2,087,516.

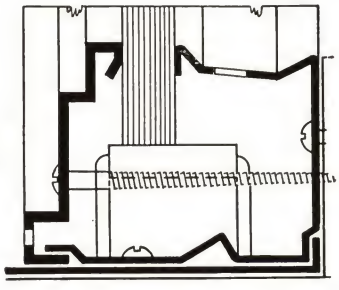
DESCO Setting . . . . . No. 16-N



No. 81 DESCO setting, rolled face plate and rolled gutter, direct screw outside setting.

DESCO Setting...No. 81

No. 26 DESCO setting, rolled face plate and rolled gutter, direct screw, outside setting.



DESCO Setting....No. 26

Desco METAL TYPES OF BARS

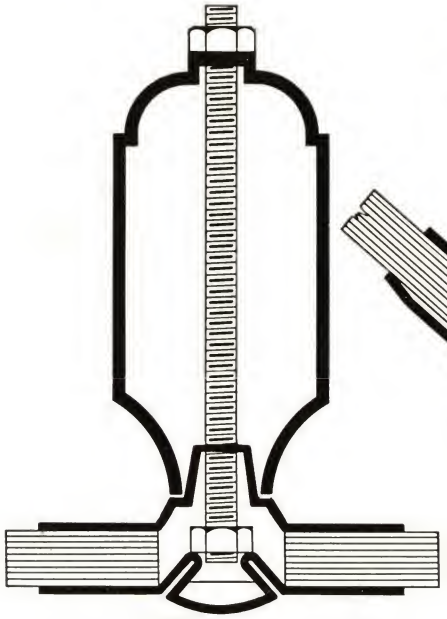
DESCO makes two types of bars, all rolled and semi-extruded.

REINFORCING CHANNELS

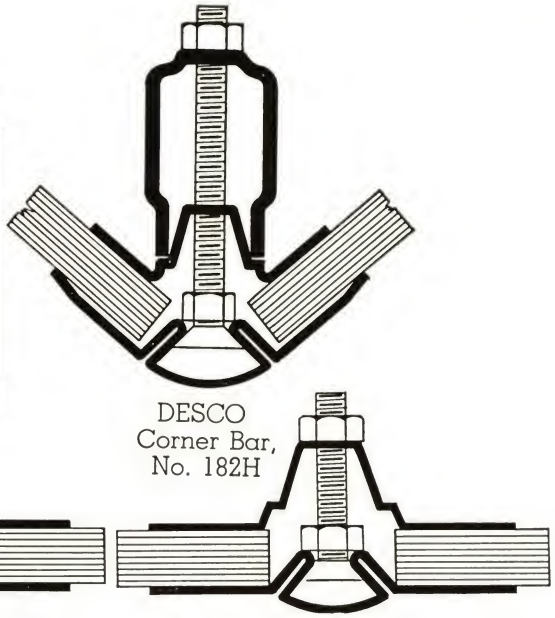
Please note that No. H channel, No. XH channel and No. XXH channel fit all bars where extra strength is required whether the bars are rolled or semi-extruded.

ALL ROLLED TYPE

Full size drawings below will show exact sizes of all bars with their proper numbers. Please note how reinforcing channels are attached.

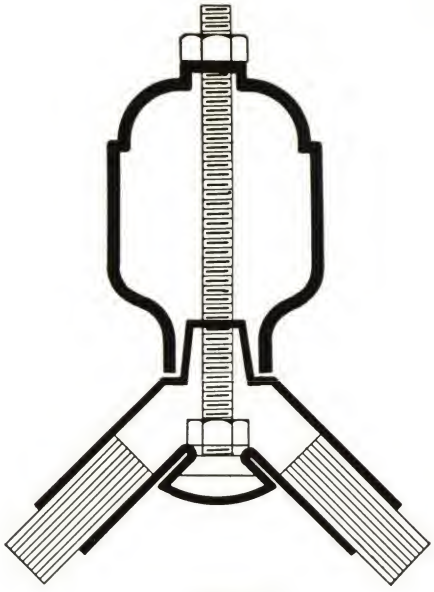


DESCO
Division Bar
No. 183XXH



DESCO
Corner Bar,
No. 182H

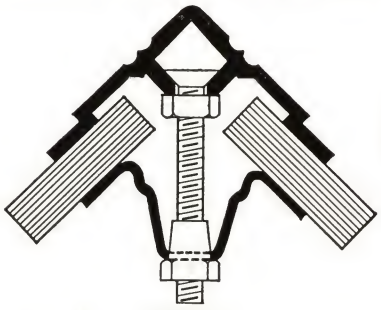
DESCO
Division Bar,
No. 183



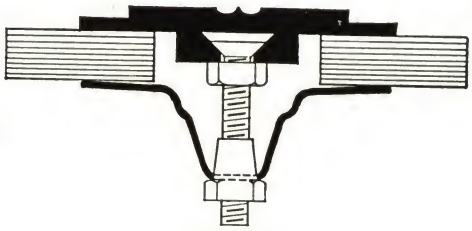
DESCO
Reverse Corner Bar
No. 184XH

SEMI-EXTRUDED BARS

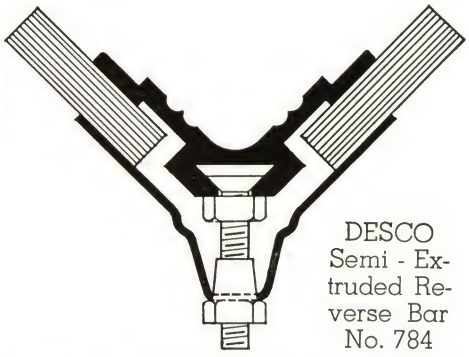
All bars of the semi-extruded type are fitted with extruded face mouldings and rolled back plates. All reinforcing channels fit this type, whether they are corner, division or reverse bars.



DESCO
Semi-Extruded Corner Bar
No. 782



DESCO
Semi-Extruded Division Bar
No. 783



DESCO
Semi - Extruded Reverse Bar
No. 784

Semi-Extruded Corner Bars and Reverse Corner Bars are carried at the factory in several standard angles which are as follows:
Corner Bars 90 degrees 105, 120, 135 and 150.
Reverse Corner Bars 90, 110 and 135.

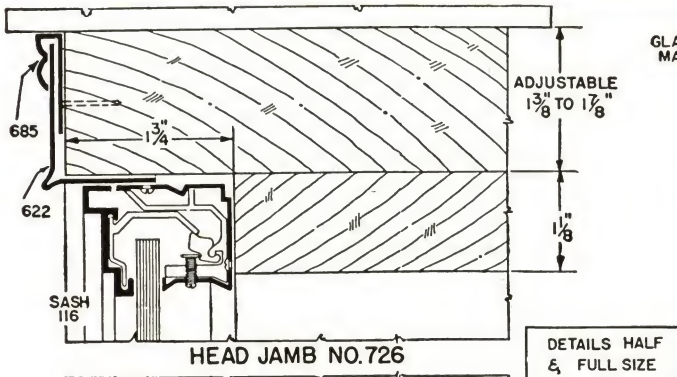
Architects will be assured of better service and more prompt shipments if they will adhere closely to the above angles.
Of course any of these bars can be re-angled and any angle can be supplied when ordered.

Desco

DESCO STORE FRONT CONSTRUCTION

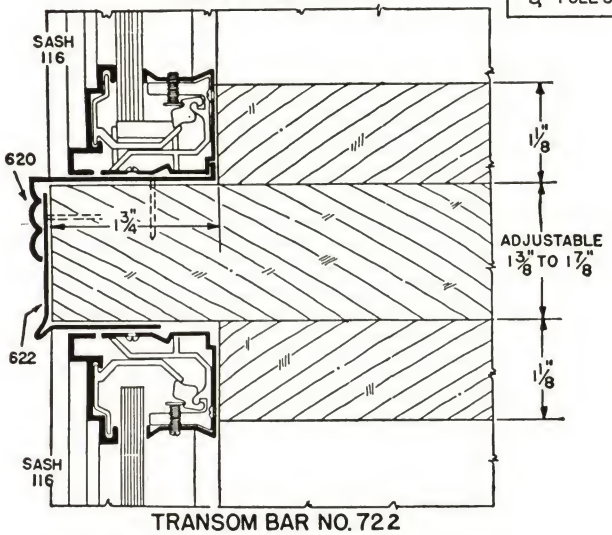
EXTRUDED AND ROLLED SECTIONS IN ALUMINUM AND BRONZE.

PLATE I

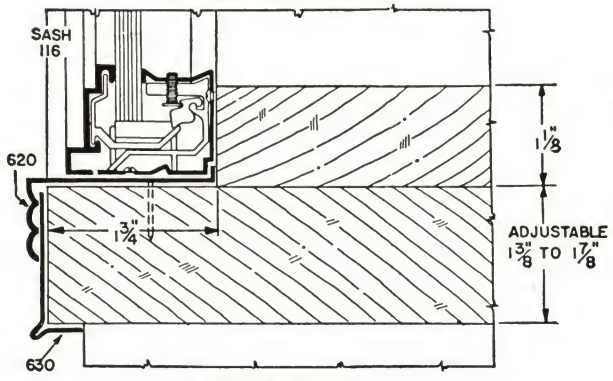


HEAD JAMB NO.726

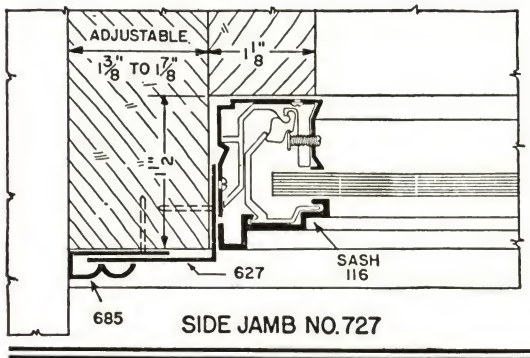
DETAILS HALF & FULL SIZE



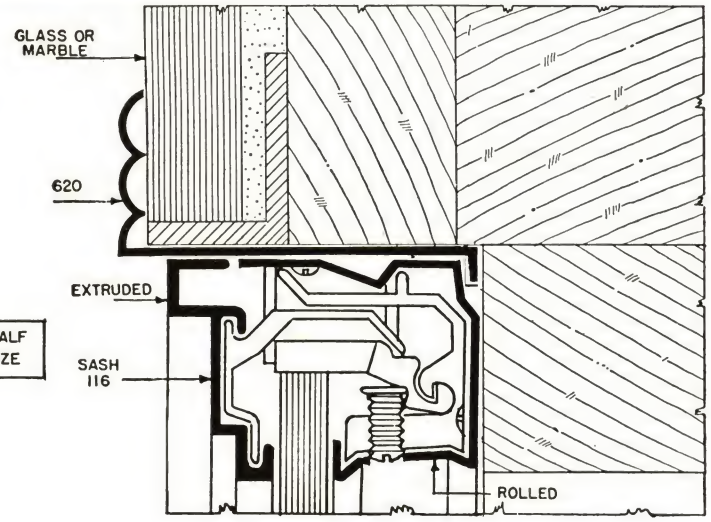
TRANSOM BAR NO. 722

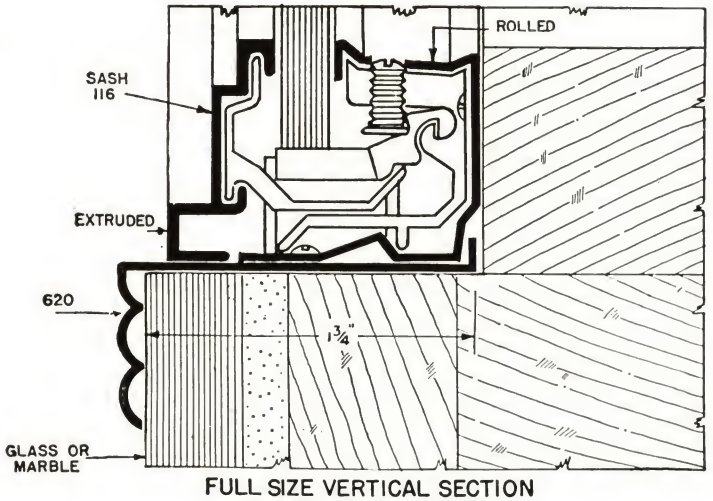


SILL NO.720



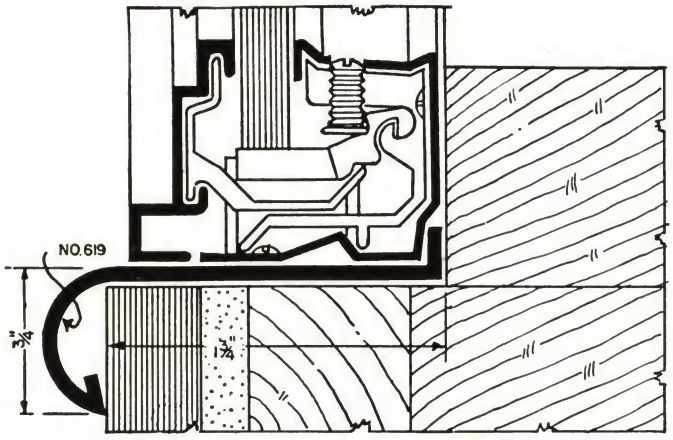
SIDE JAMB NO.727





FULL SIZE VERTICAL SECTION THROUGH HEAD AND SILL

NO.116 SASH – NO.620 COVERING STRUCTURAL GLASS OR MARBLE ALL AROUND



BULL NOSE SILL COVERS

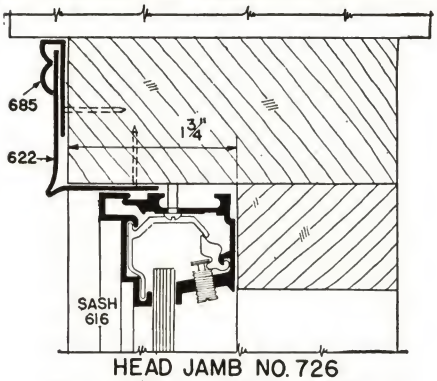
NO.619 - EXTRUDED - 050" THICKNESS
NO.119-ROLLED - 040" THICKNESS

Desco

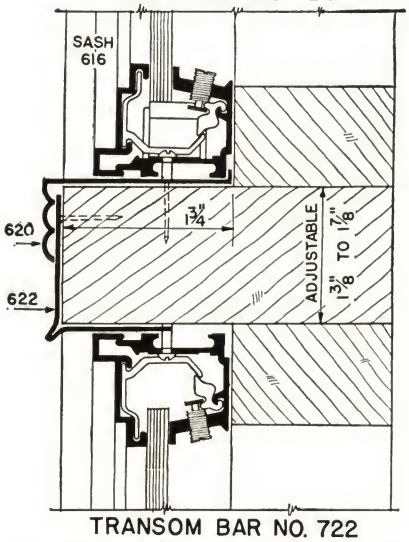
DESCO STORE FRONT CONSTRUCTION

EXTRUDED AND ROLLED SECTIONS IN ALUMINUM AND BRONZE

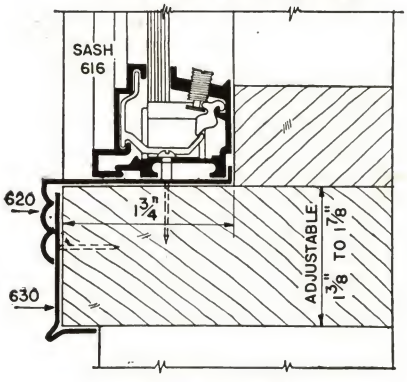
PLATE 2



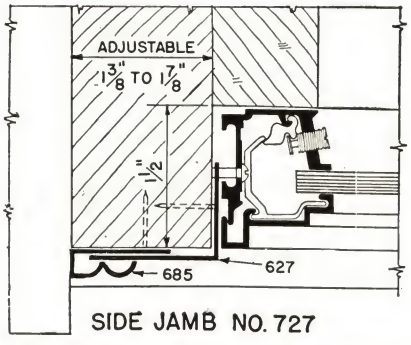
HEAD JAMB NO. 726



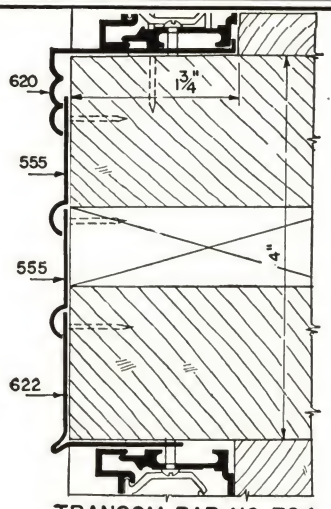
TRANSOM BAR NO. 722



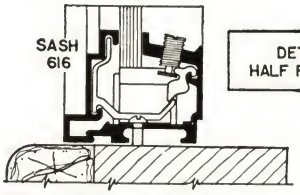
SILL NO. 720



SIDE JAMB NO. 727

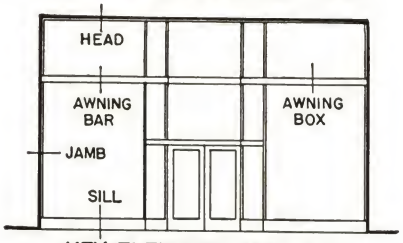


TRANSOM BAR NO. 724

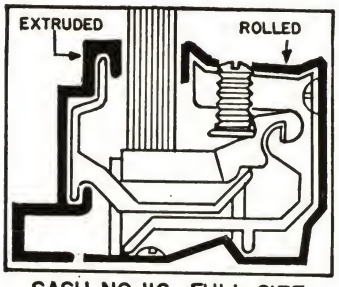


DETAILS HALF FULL SIZE

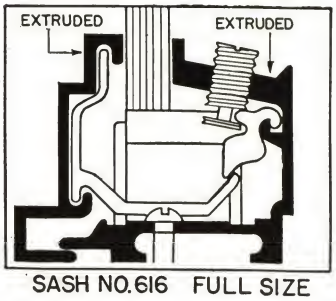
SELF SUPPORTING SASH



KEY ELEVATION SHOWING WHERE SECTIONS ARE TAKEN

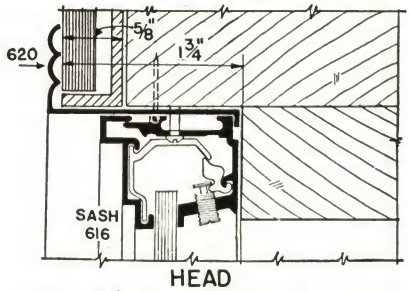


SASH NO. 116 FULL SIZE

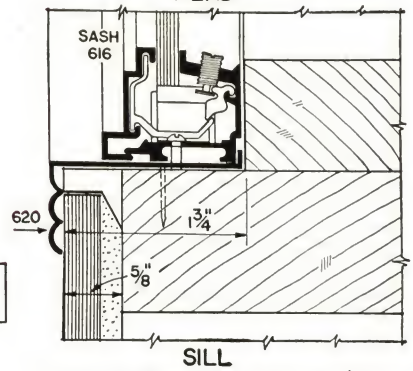


SASH NO. 616 FULL SIZE

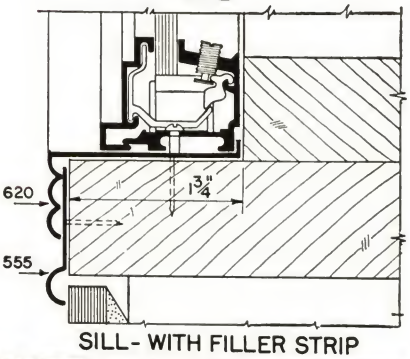
EITHER OF THE ABOVE SASH MAY BE USED IN ANY OF THE CONDITIONS SHOWN BY DETAILS ON THIS DRAWING



HEAD



SILL



SILL- WITH FILLER STRIP



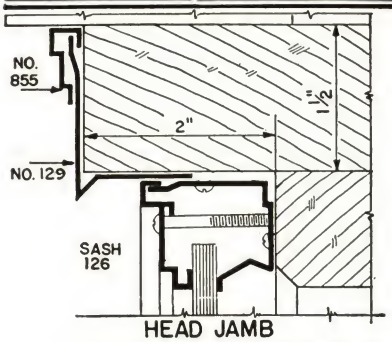
New Desco Polished Bronze Store Front for "Peggy Ann" on Grand River Ave., Detroit.

Desco

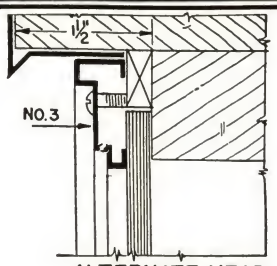
DESCO STORE FRONT CONSTRUCTION

SOLID BRONZE, SOLID COPPER OR ALUMINUM ANY FINISH DESIRED

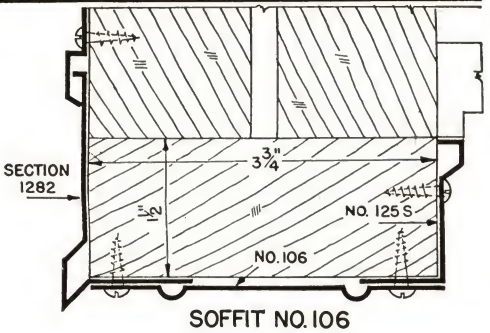
PLATE 3



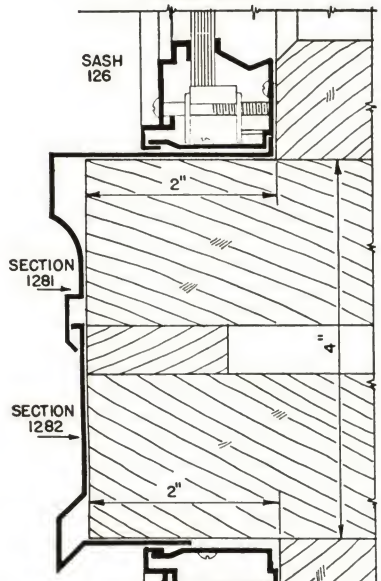
HEAD JAMB



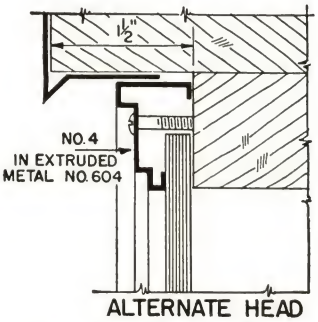
ALTERNATE HEAD



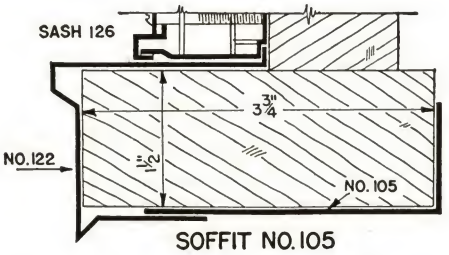
SOFFIT NO. 106



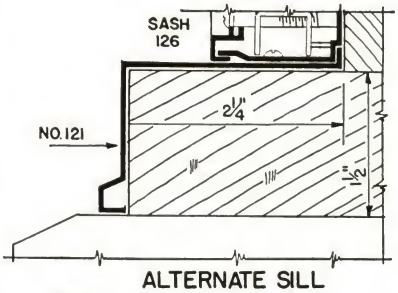
TRANSOM BAR NO. 128



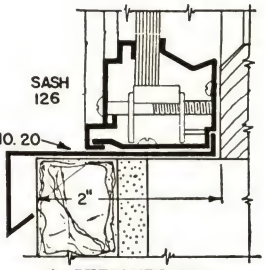
ALTERNATE HEAD



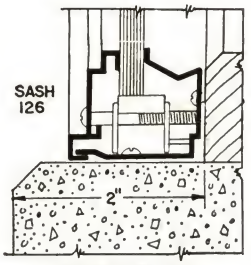
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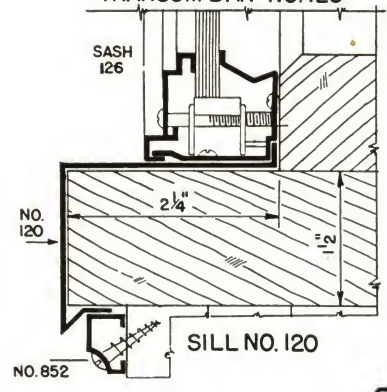
ALTERNATE SILL



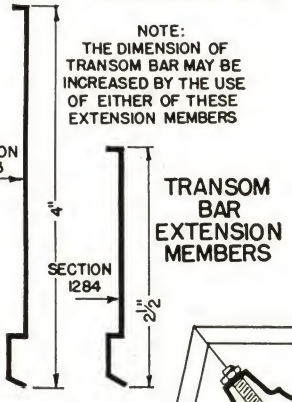
ALTERNATE SILL



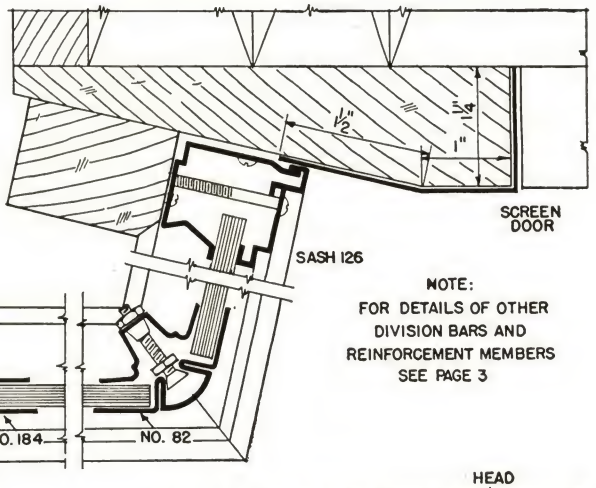
ALTERNATE SILL



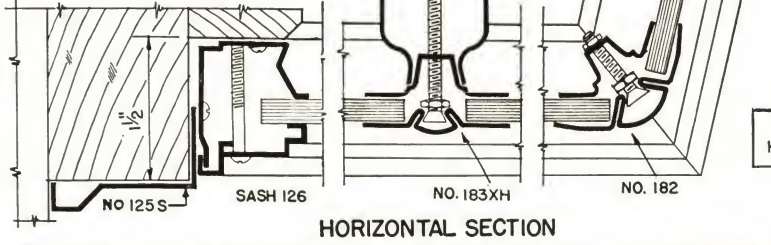
SILL NO. 120



TRANSOM BAR EXTENSION MEMBERS

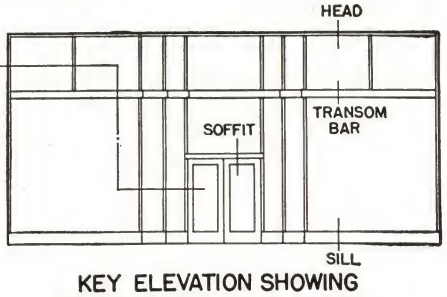


NOTE:
FOR DETAILS OF OTHER DIVISION BARS AND REINFORCEMENT MEMBERS SEE PAGE 3



HORIZONTAL SECTION

DETAILS HALF FULL SIZE



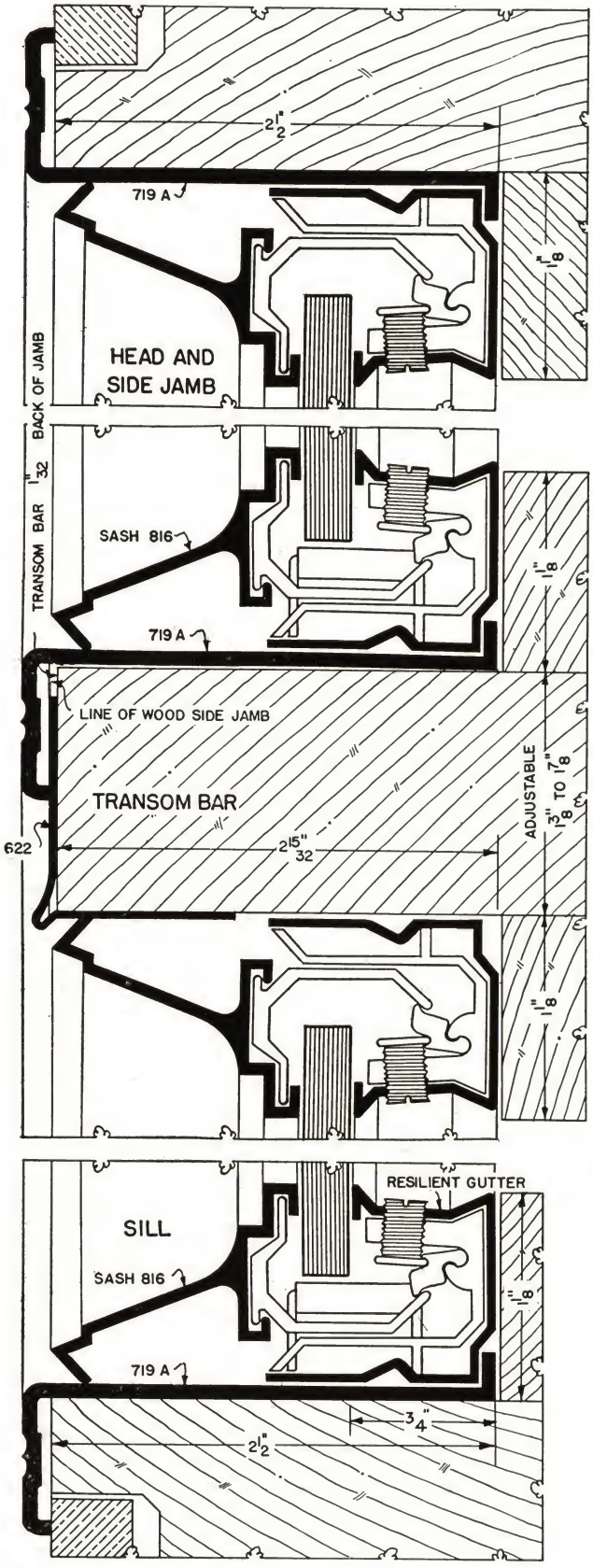
KEY ELEVATION SHOWING WHERE SECTIONS ARE TAKEN

Desco

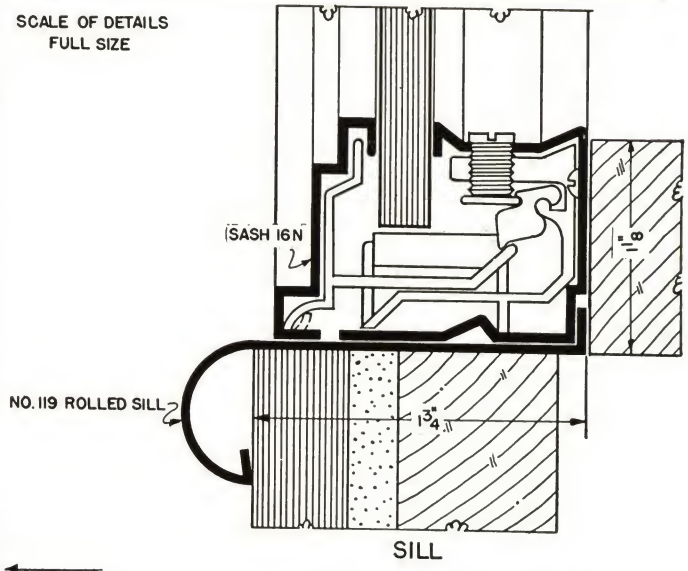
DESCO STORE FRONT CONSTRUCTION

EXTRUDED AND ROLLED SECTIONS IN ALUMINUM AND BRONZE

PLATE 4

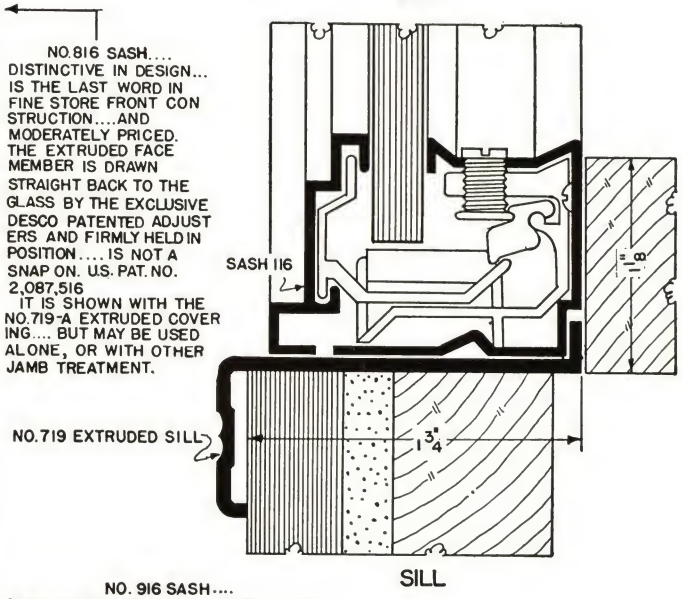


SCALE OF DETAILS FULL SIZE



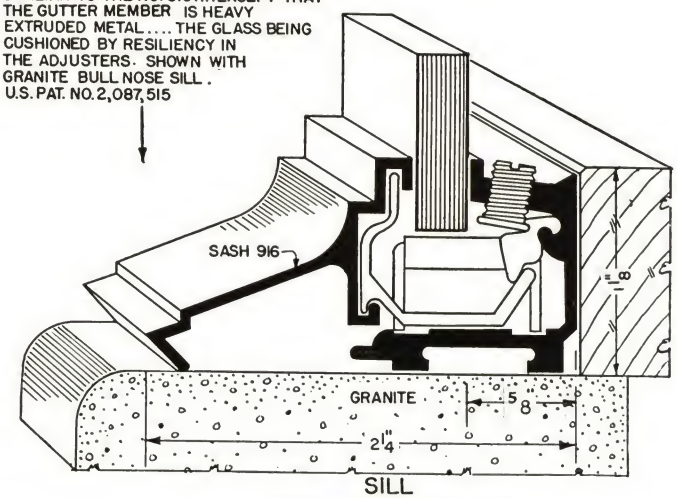
SILL

NO. 816 SASH.... DISTINCTIVE IN DESIGN... IS THE LAST WORD IN FINE STORE FRONT CONSTRUCTION.... AND MODERATELY PRICED. THE EXTRUDED FACE MEMBER IS DRAWN STRAIGHT BACK TO THE GLASS BY THE EXCLUSIVE DESCO PATENTED ADJUSTERS AND FIRMLY HELD IN POSITION.... IS NOT A SNAP ON. U.S. PAT. NO. 2,087,516
IT IS SHOWN WITH THE NO. 719-A EXTRUDED COVERING.... BUT MAY BE USED ALONE, OR WITH OTHER JAMB TREATMENT.



SILL

NO. 916 SASH.... SIMILIAR TO THE NO. 816.... EXCEPT THAT THE GUTTER MEMBER IS HEAVY EXTRUDED METAL.... THE GLASS BEING CUSHIONED BY RESILIENCY IN THE ADJUSTERS. SHOWN WITH GRANITE BULL NOSE SILL. U.S. PAT. NO. 2,087,515



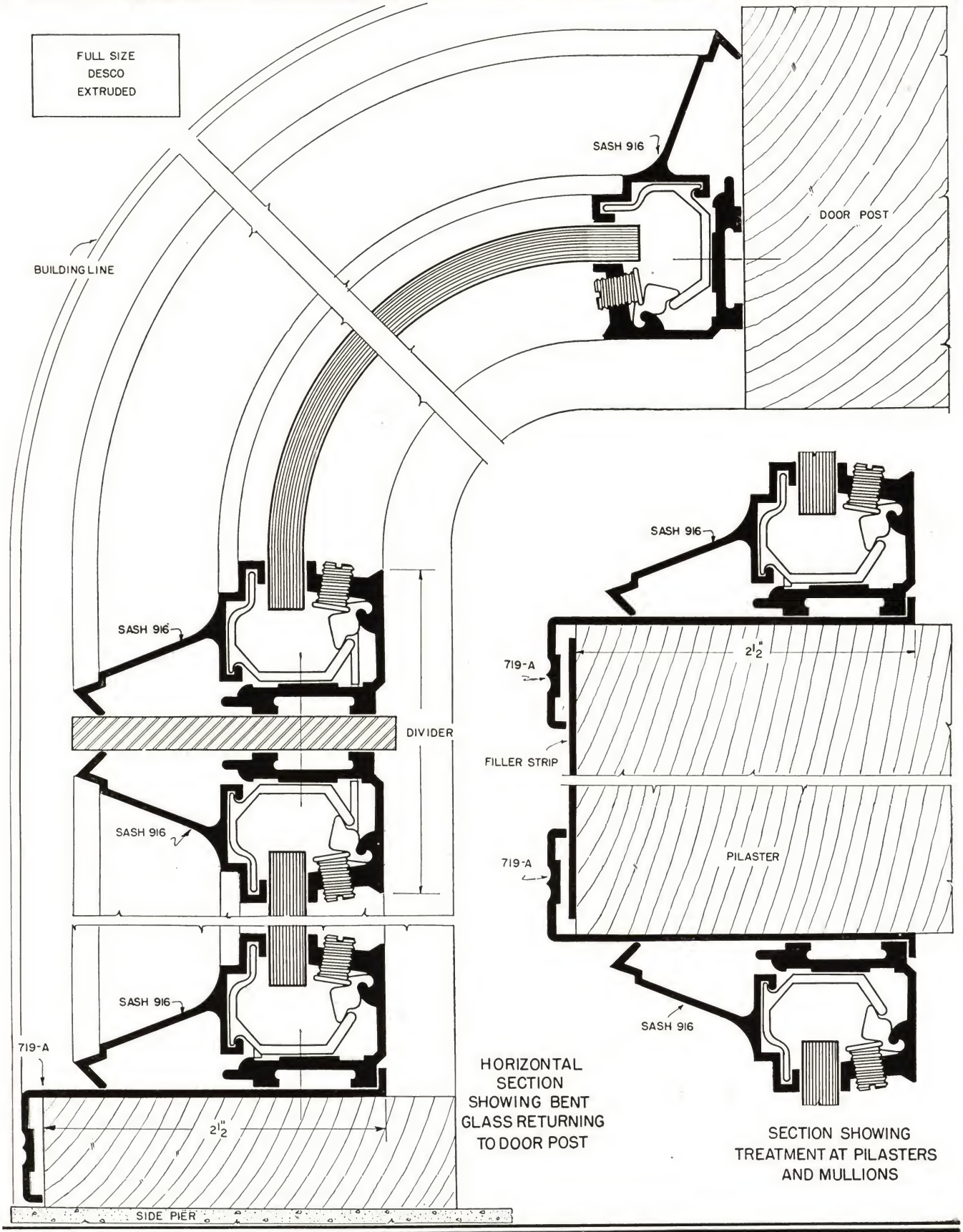
SILL
EXTRUDED FACE AND GUTTER

Desco

DESCO STORE FRONT CONSTRUCTION

EXTRUDED AND ROLLED SECTIONS IN ALUMINUM AND BRONZE

PLATE 4a

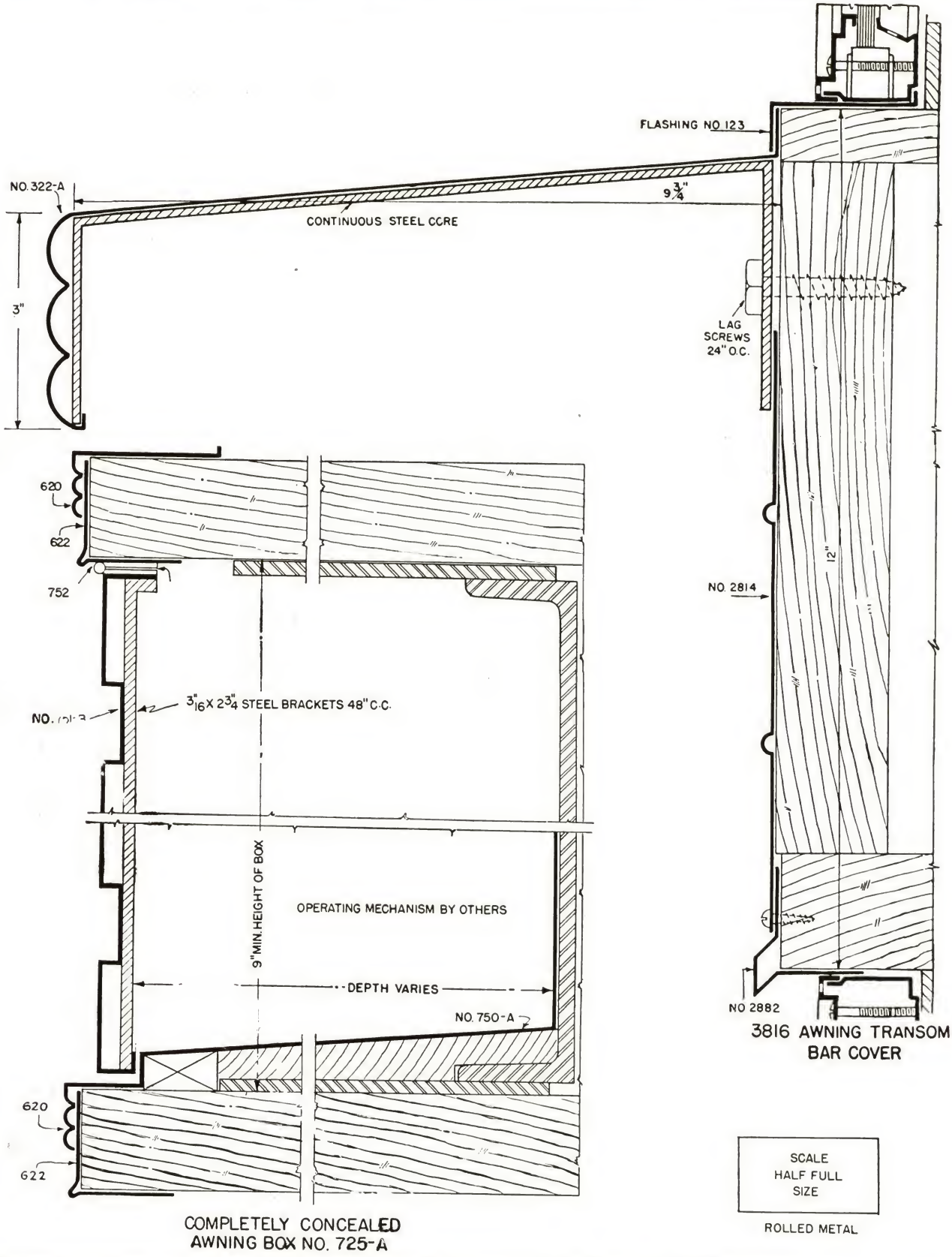


Desco

DESCO STORE FRONT CONSTRUCTION

EXTRUDED AND ROLLED SECTIONS IN ALUMINUM AND BRONZE

PLATE 4d

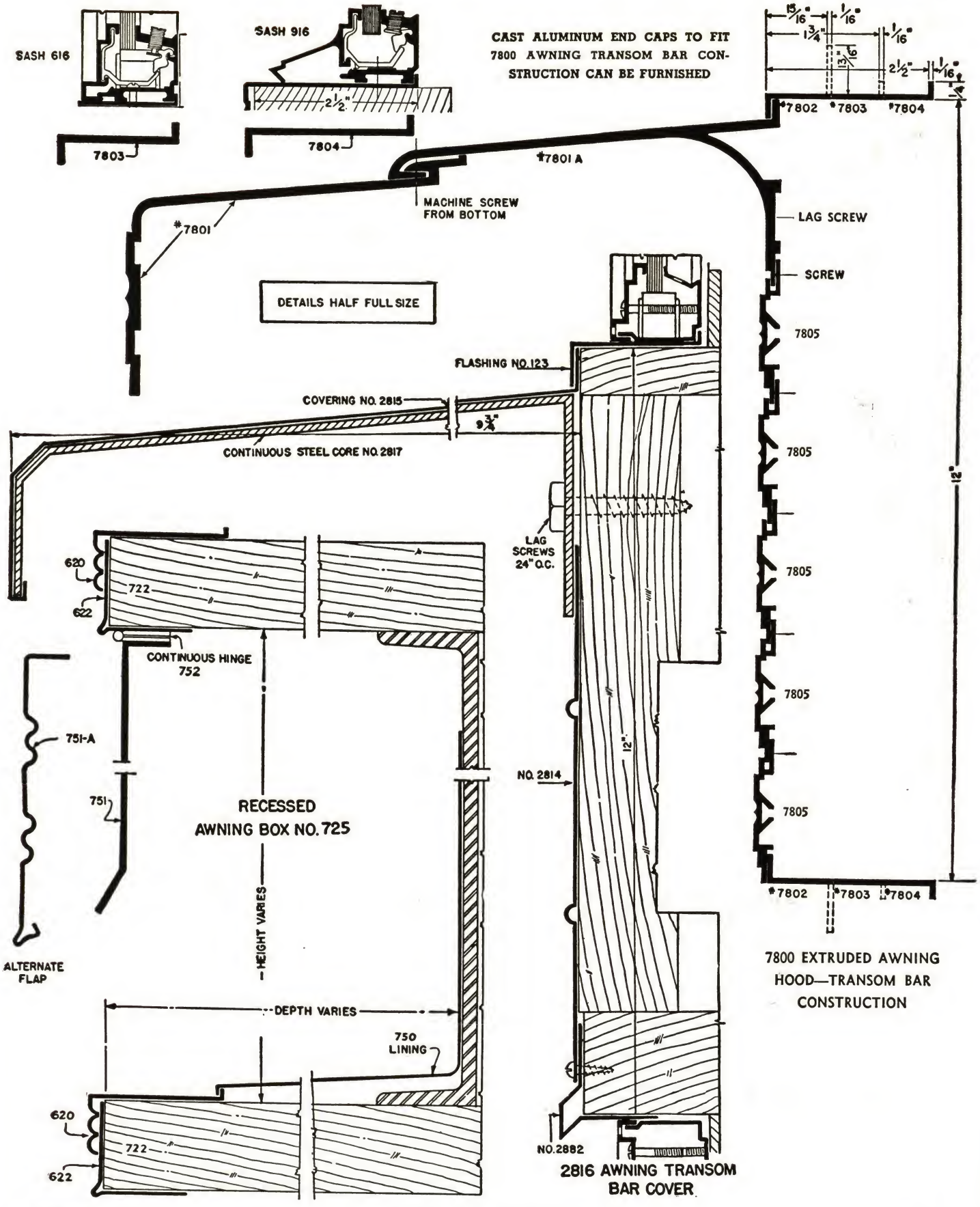


3816 AWNING TRANSOM BAR COVER

COMPLETELY CONCEALED AWNING BOX NO. 725-A

SCALE HALF FULL SIZE

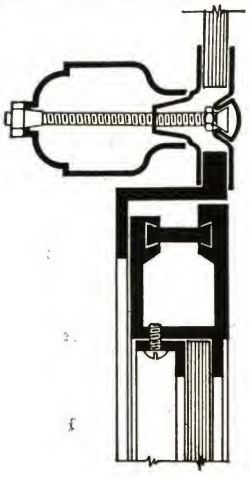
ROLLED METAL

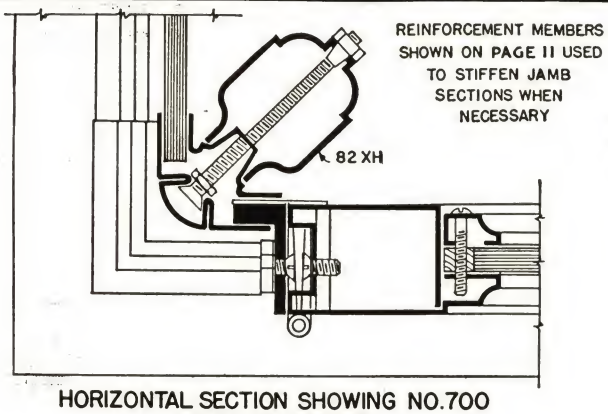

SASH 616
7803
SASH 916
2½"
7804
CAST ALUMINUM END CAPS TO FIT 7800 AWNING TRANSOM BAR CONSTRUCTION CAN BE FURNISHED
15/16"
1/16"
1¾"
1/16"
13/16"
2½"
1/16"
¼"
*7802
*7803
*7804
*7801 A
MACHINE SCREW FROM BOTTOM
*7801
LAG SCREW
SCREW
7805
DETAILS HALF FULL SIZE
FLASHING NO. 123
COVERING NO. 2815
9¾"
CONTINUOUS STEEL CORE NO. 2817
LAG SCREWS 24" O.C.
12"
620
722
622
CONTINUOUS HINGE 752
751-A
751
RECESSED AWNING BOX NO. 725
HEIGHT VARIES
NO. 2814
ALTERNATE FLAP
DEPTH VARIES
750 LINING
NO. 2882
2816 AWNING TRANSOM BAR COVER
7800 EXTRUDED AWNING HOOD—TRANSOM BAR CONSTRUCTION

Desco

DESCO SHOW CASE DOORS IN EXTRUDED METAL

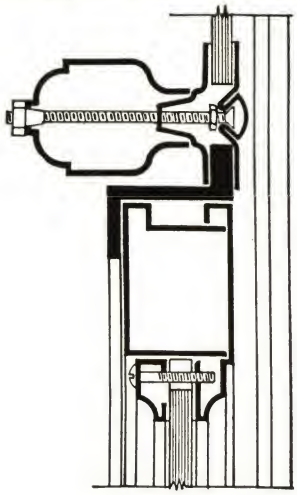
PLATE 6

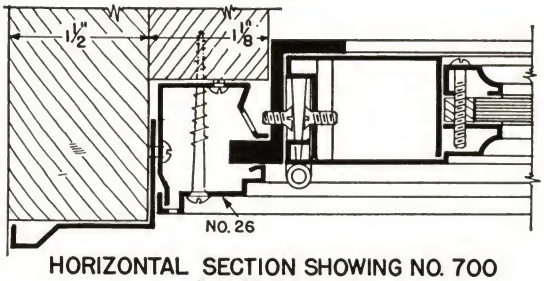




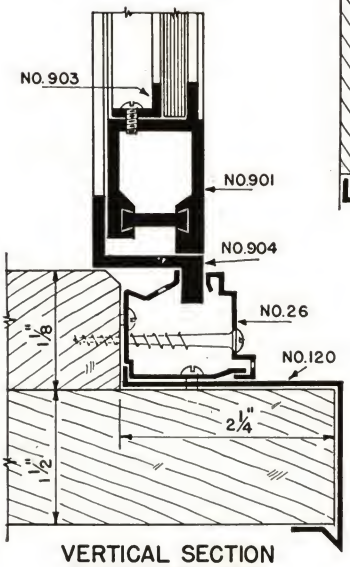
REINFORCEMENT MEMBERS SHOWN ON PAGE 11 USED TO STIFFEN JAMB SECTIONS WHEN NECESSARY

HORIZONTAL SECTION SHOWING NO.700 DOOR AT CORNER

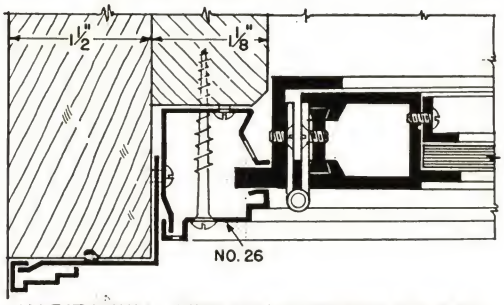




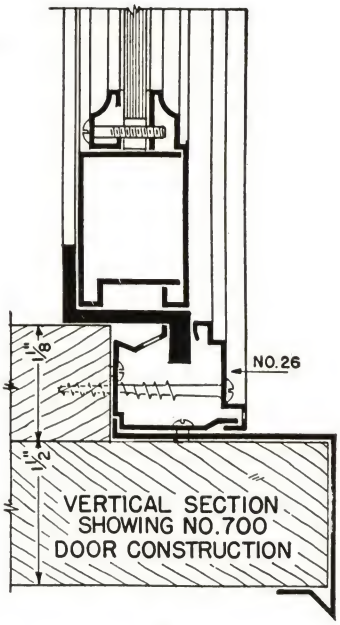
HORIZONTAL SECTION SHOWING NO. 700 DOOR AT JAMB



VERTICAL SECTION SHOWING NO. 900 DOOR CONSTRUCTION

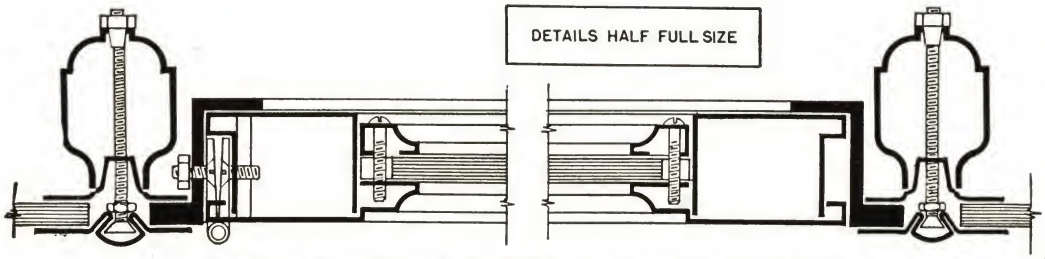


HORIZONTAL SECTION SHOWING NO. 900 DOOR AT JAMB

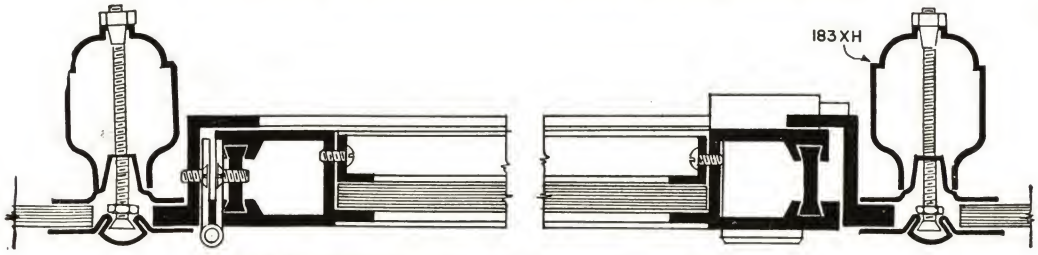


VERTICAL SECTION SHOWING NO.700 DOOR CONSTRUCTION

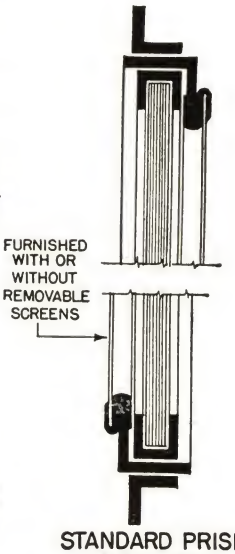
DETAILS HALF FULL SIZE



HORIZONTAL SECTION SHOWING NO. 700 DOOR CONSTRUCTION



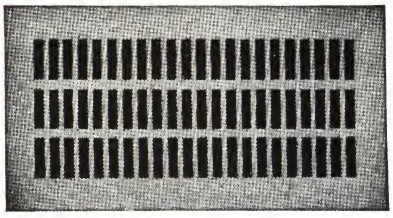
HORIZONTAL SECTION SHOWING NO. 900 DOOR CONSTRUCTION



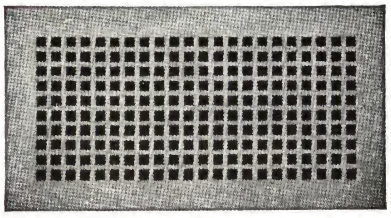
STANDARD PRISM VENTILATOR

ACCESSORIES for *Desco* STORE FRONTS

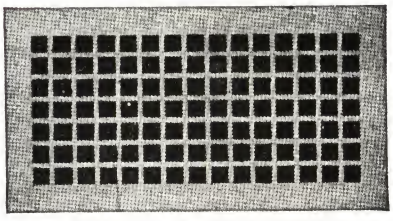
Accessories—including mouldings, grilles, plates, thresholds, setting blocks and reinforcements—meet the same high standards of quality of material and fineness of workmanship that have always characterized DESCO products.



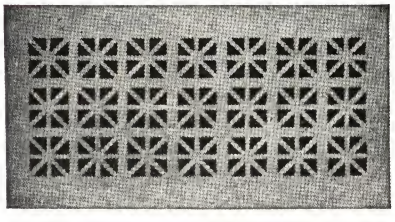
DESCO Grille . . Type 1



DESCO Grille . . . Type 2

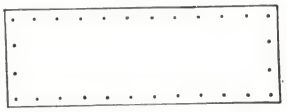


DESCO Grille . . . Type 3

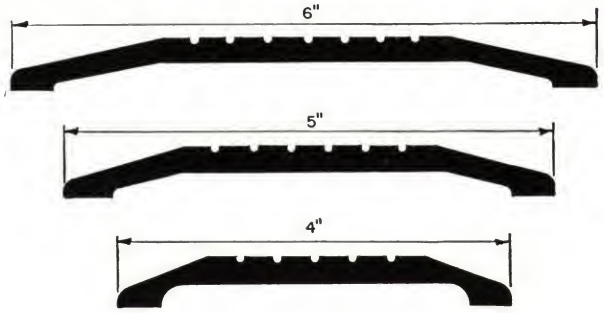


DESCO Grille . . . Type 5

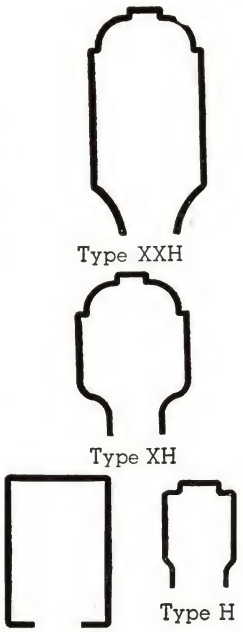
DESCO Grilles . . . in Bronze, Aluminum and Alumilite
Standard Sizes: 11 x 15, 18 x 9, and 24 x 10 inches



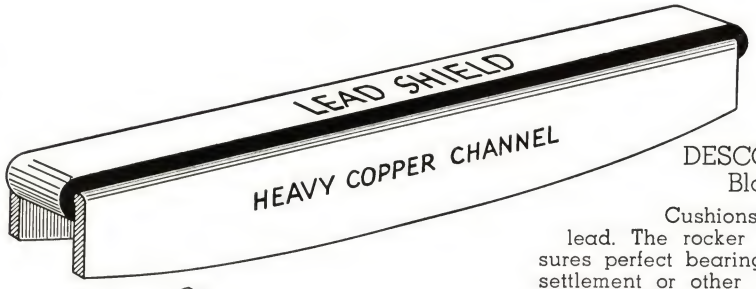
Kick Plate
Standard Heights: 10, 12, 14 and 16 Inches.
Any Length—16 Gauge



Threshold Plates
in Bronze and Aluminum

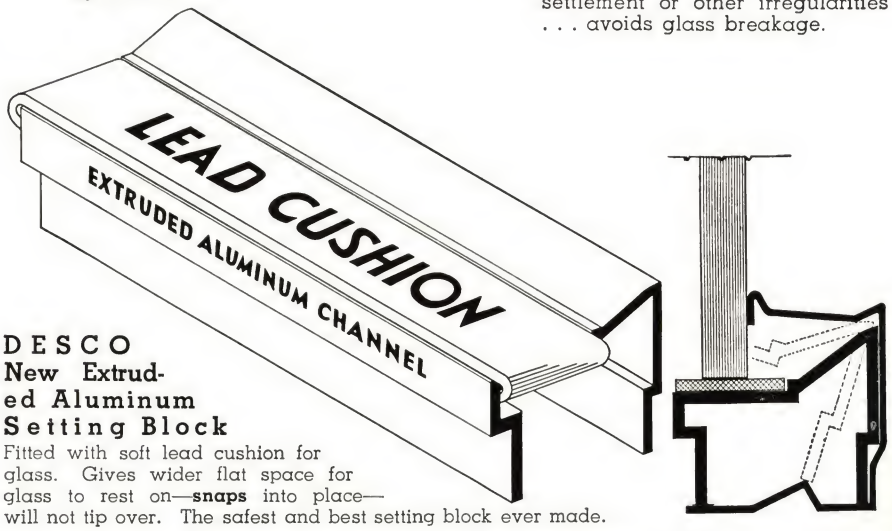


Reinforcements for Division Bars
See Plate No. 3 for Division Bars



DESCO Setting Block

Cushions the glass in lead. The rocker channel insures perfect bearing in case of settlement or other irregularities . . . avoids glass breakage.



DESCO
New Extruded Aluminum Setting Block
Fitted with soft lead cushion for glass. Gives wider flat space for glass to rest on—**snaps** into place—will not tip over. The safest and best setting block ever made.

Installation . . .

In every principal city throughout the country there is an authorized DESCO Dealer or Distributor ready to assist Architects in planning windows of new stores . . . or remodeling facades of old buildings. These dealers and distributors carry a complete stock of DESCO Store Front construction and are equipped to handle any installation.

For samples, details and prices, we earnestly request Architects to contact our nearest dealer or distributor. Our fieldmen in these offices will be glad to co-operate in planning any type of work. No obligation, of course.



A "DESCO" Store Front Installation

Desco

DETROIT SHOW CASE COMPANY

1652 - 1694 WEST FORT STREET

DETROIT, MICHIGAN

NEW YORK OFFICE: 103 PARK AVENUE, NEW YORK, N. Y.

HIMCO



NON-TARNISHABLE

STORE FRONT CONSTRUCTION

THE HIMMEL BROTHERS CO.

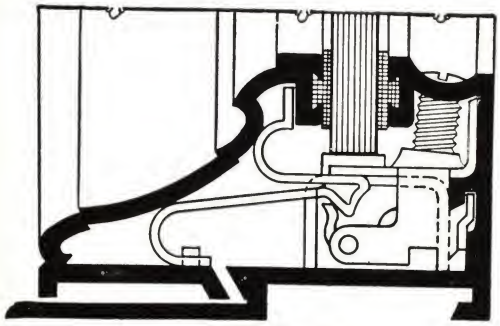
1409-15 Dixwell Avenue • • • Hamden, Conn.
(Suburb of New Haven)

CATALOG J • 1939

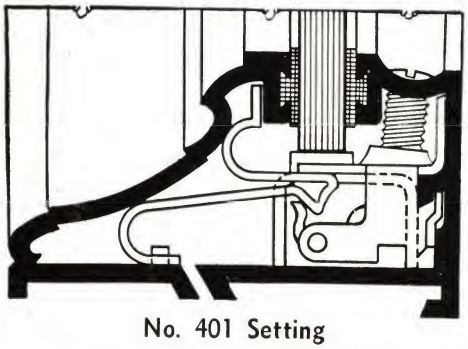
"HIMCO" NON-TARNISHABLE STORE FRONT CONSTRUCTIONS

ARCHITECTURAL EXTRUDED SETTINGS

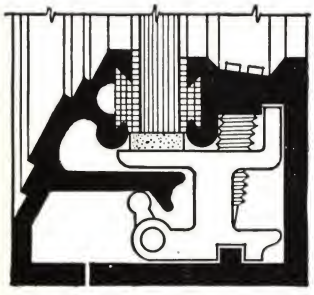
IN ALUMILITED ALUMINUM AND BRONZE



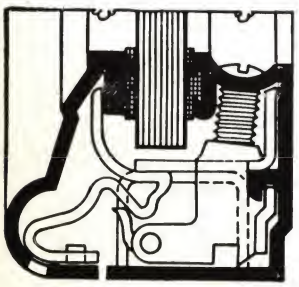
No. 400 Setting



No. 401 Setting



No. 404 Setting



No. 402 Setting

A Complete "Himco" Line in Either Extruded, Solid Rolled, or Stainless Laminated Metal

(Patented)

We offer to the architect a complete glass setting construction either in architectural extruded sections for the highest quality store fronts, or in rolled solid metals for medium priced work.

We do not erect these constructions but the sections are stocked by reputable glaziers throughout the country and are generally erected through the glaziers, plate glass manufacturers, or setters.

Elements Necessary for Best Results in Modern Store Front Construction

The rigidity of extruded shapes, when used for glass settings, make it absolutely necessary that some means be provided to permit the natural expansion and contraction of the glass and to counteract shocks and vibration.

"Himco" extruded sections have been designed to give flexibility and allow for glass expansion and contraction by means of:

(1) **Patented Rubber Cushion**—This is held in the extruded members on both sides of the glass and while holding the glass firmly it allows the glass to expand and contract.

(2) **New Spring Controlling Clip**—It secures the face and the back members in a positive but springy and flexible grip. This additional protection offsets any tension in holding the extruded shapes and protects the glass from unnecessary breakage.

Improved Extruded 400 Series and Solid Rolled Types

The above improvements are incorporated in all the Extruded 400 Series. The new Spring Controlling Clip is also used in all of our Solid Rolled Types.

All extruded constructions in the 400 series are designed so that they may be secured with the ventilating patented baffles if so specified, otherwise they are supplied unventilated and without drainage.

Modern Metals for Glass Settings

Extruded Metals

"Alumcro" (aluminum alloy)
Bronze

Cold Rolled Metals

Stainless Chrome-Nickel 18-8
Stainless Non-Magnetic Steel 18-8
Bronze
Copper
"Alumcro" (aluminum alloy)
Stainless Laminated Metal (Pat.) "Alumcro-x-ite"

Note: "Alumcro-x-ite" is an Alumcro Oxide hard surface aluminum finish not subject to discoloration like Aluminum.

Finishes

The standard finish for Bronze, "Alumcro," Copper, Stainless Chrome-Nickel, Stainless Steel, Stainless Laminated Metal, is polished.

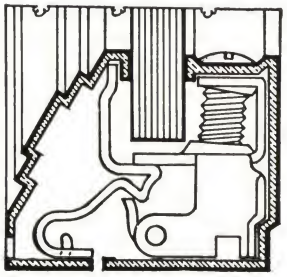
Bronze or Copper supplied in Oxidized or Statuary finishes on order. "Alumcro" in "Alumcro-x-ite" on order.

Satin Finish supplied on all metals.

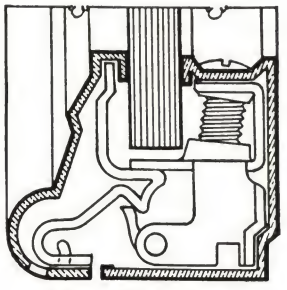
Note: All constructions featured in this catalogue are protected by various U. S. and foreign patents. Infringers will be prosecuted.

ROLLED SOLID AND STAINLESS LAMINATED METAL

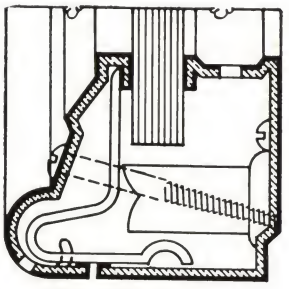
(Patented)



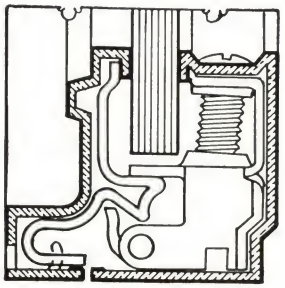
No. 70 Setting



No. 22 Setting



No. 23 Setting



No. 80 Setting

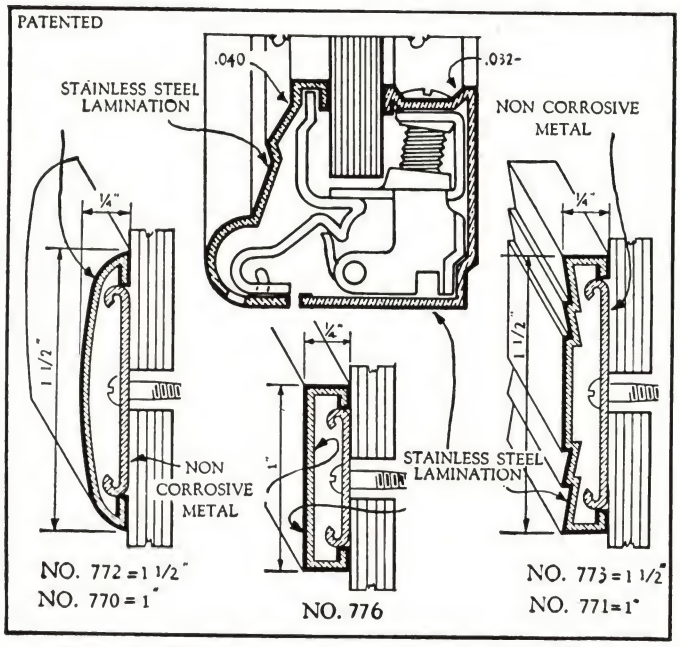
"HIMCO" STAINLESS LAMINATED METAL

(PATENTED)

A New, Non-tarnishable Moulding Construction for Store Fronts and Other Purposes at a Price Within the Range of Copper, Bronze or Aluminum

"Himco" Stainless Laminated Metal is a new, non-tarnishable metal for store front construction which has already proven a great success as indicated by the demand created, *and the cost is within the price range of copper, bronze or aluminum.* It requires no polishing of any description.

Stainless Laminated Metal can be used in connection with solid Stainless Steel 18-8 because the same type of non-magnetic Stainless material is used in the fabrication of the Stainless Laminated Metal construction.



"Himco" Stainless Laminated Snap-on Mouldings

For complete line see our catalog in File index

The only maintenance necessary is that, whenever the plate glass of the show window is washed, the Stainless Laminated Metal shall be washed at the same time and wiped off *(not polished)* with an ordinary chamois. In this way the high lustre of the metal will be retained indefinitely.

The "Himco" Stainless Laminated Mouldings have a wide use in modern decorative interiors and exteriors. They are especially useful as cover moulds for sheet materials. See our catalog on these mouldings in Sweet's File index.

Especially Valuable for Alteration or Replacement Work

Although also specified for new work because of its appearance, first cost, and minimum upkeep, one of its important advantages is that it is made in exactly the same sections as our standard settings—No. 70, No. 80, No. 60 or No. 22.

Note: Anyone having these store fronts already in place, and desiring to improve the appearance of his store according to the modern trend, can have his present "Himco" construction replaced with Stainless Laminated Metal face mouldings *without disturbing the balance of the glass setting.*

"Himco" Stainless Laminated Metal is guaranteed to give the same identical results as our solid, non-magnetic Stainless Steel 18-8 sections, because the same type of Stainless material is used in its fabrication.

The principal point of interest is that the cost of "Himco" Stainless Laminated Metal is within the price range of ordinary copper, bronze or aluminum store front construction. Sample mouldings of this material will gladly be sent upon request.

The Various Types of "Himco" Constructions

Architectural Extruded Metal

No. 400 Series with the Cushion Glass Grip (Patented)

For the very finest type of modern store fronts. Glass settings can also be supplied separately for cast bronze or aluminum alloy by others. The positive spring controlling clip (patented) eliminates all exposed screws and with the rubber cushions or gaskets, prevent glass breakage.

Rolled Solid Metal or Stainless Laminated Metal

No. 70 (Patented)

A modern design based on the No. 400 Series setting, but in rolled solid metals having the same type of positive screw flange control, eliminating exposed screws.

No. 22 or No. 80 (Patented)

This construction has a screw flange control, similar to No. 70 and does not have exposed screws. Face mouldings are available for Sash Nos. 22, 23, 60, 70, or 80 settings for less expensive installations.

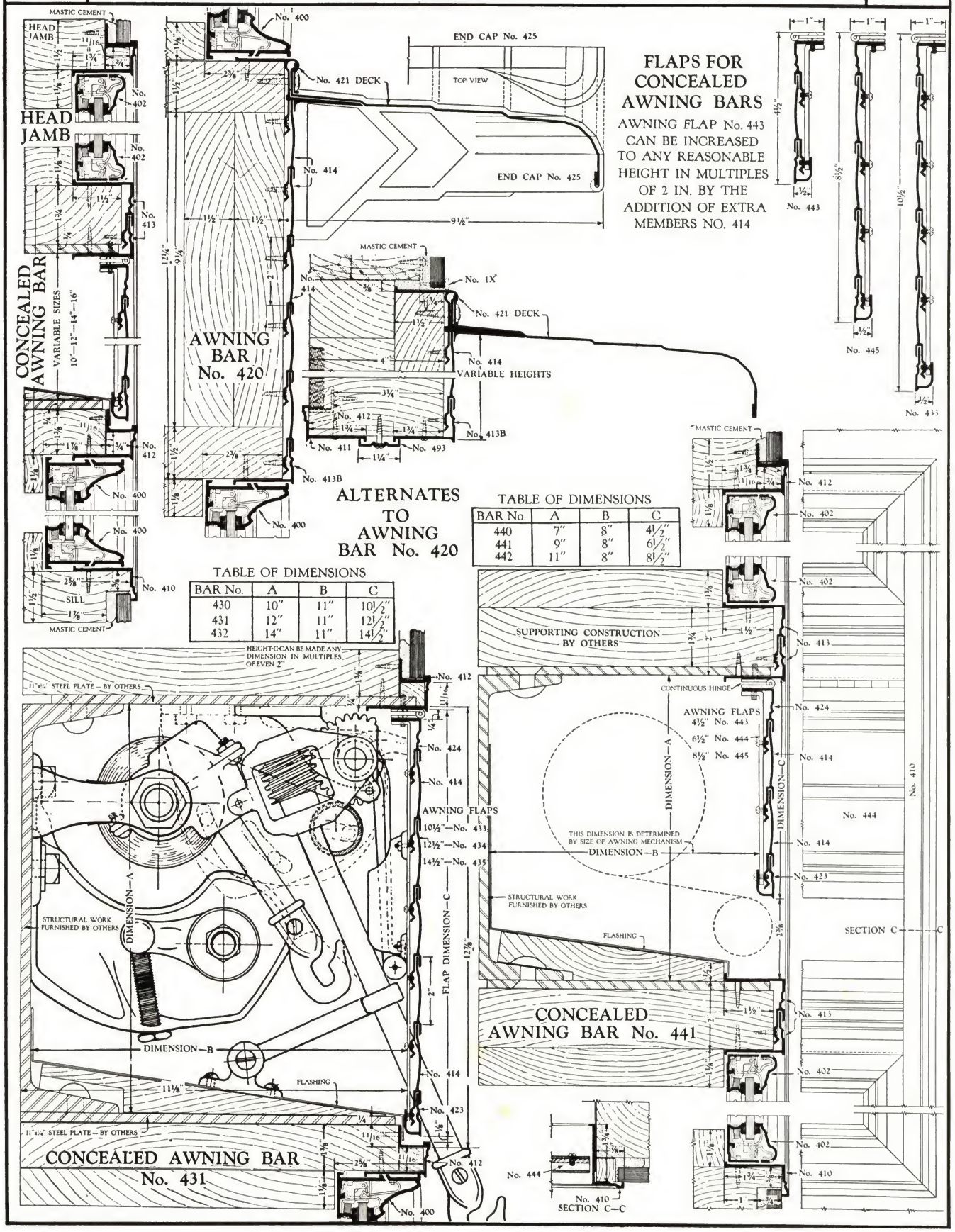
No. 60 and No. 23 (Patented)

The setting screws pass through a metal tube from the front to the back member, assuring freedom from contact between the glass and the screw.

"HIMCO" No. 400 STORE FRONT CONSTRUCTION

EXTRUDED ARCHITECTURAL SECTIONS OF BRONZE, "ALUMCRO", "ALUMILITE" AND "ALUMCRO-X-ITE"

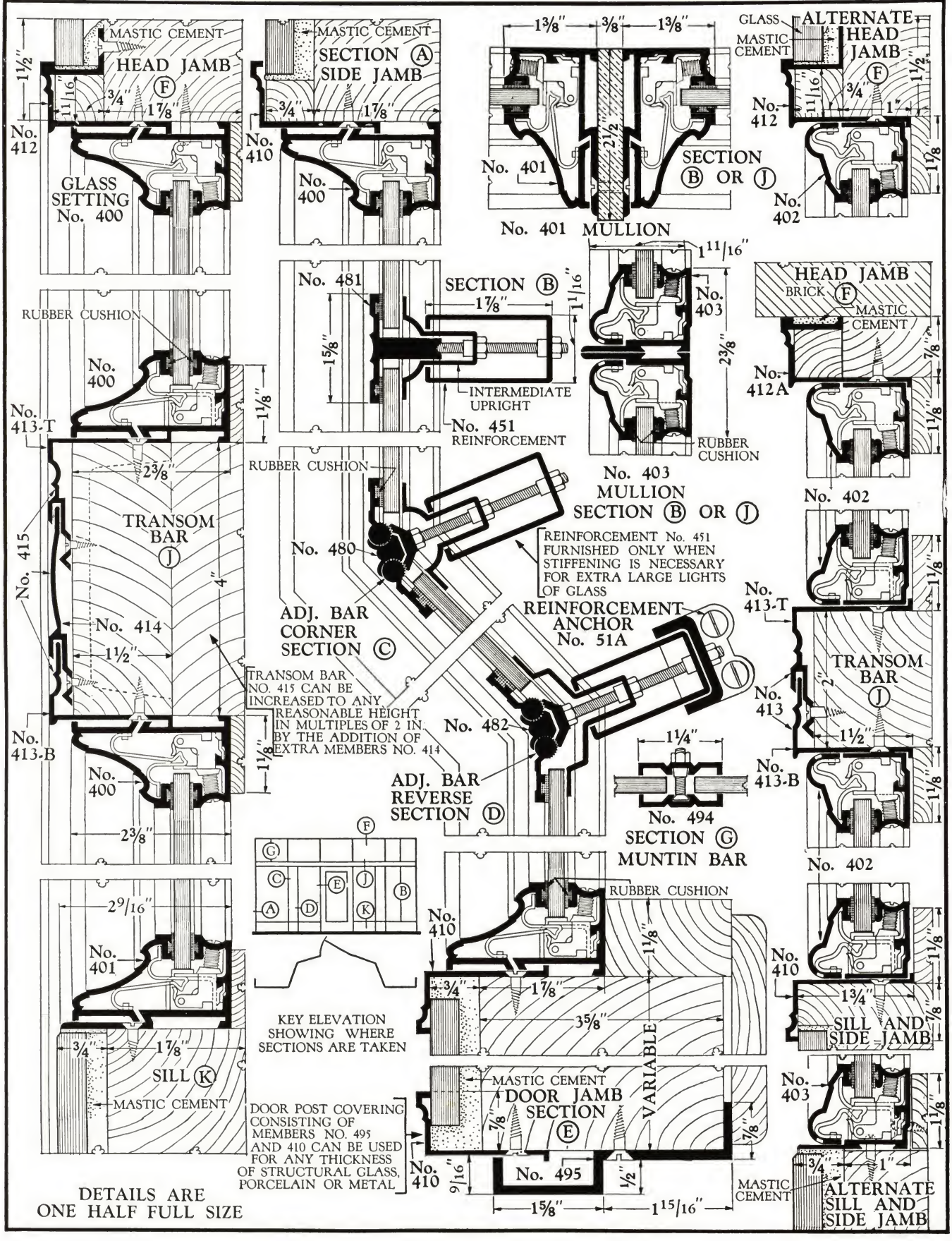
400/10



"HIMCO" No. 400 STORE FRONT CONSTRUCTION

EXTRUDED ARCHITECTURAL SECTIONS OF BRONZE, "ALUMCRO", "ALUMILITE" AND "ALUMCRO-X-ITE"

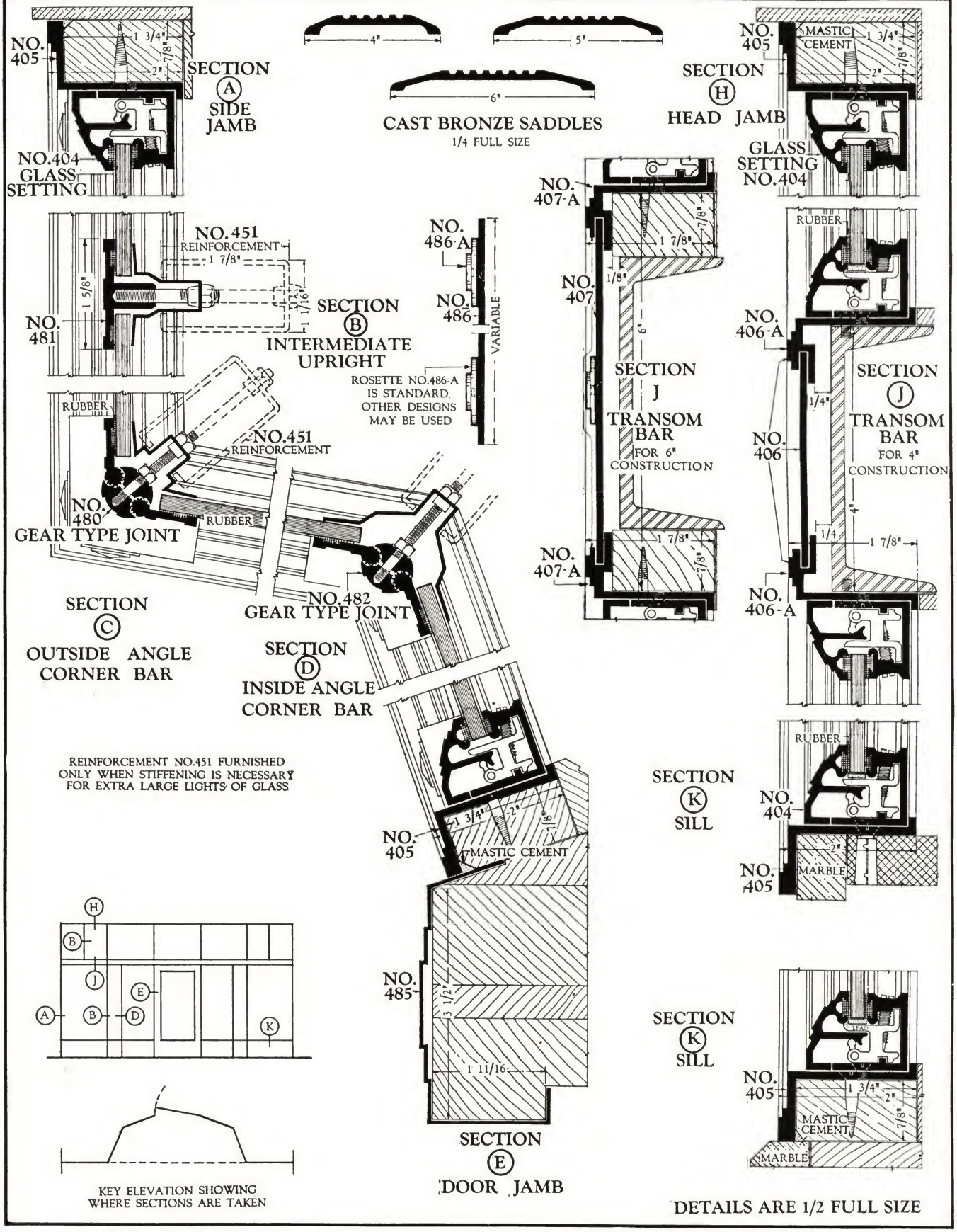
400
11



"HIMCO" NO. 400 STORE FRONT CONSTRUCTION

EXTRUDED, ARCHITECTURAL SECTIONS OF BRONZE, "ALUMCRO," "ALUMILITE" AND "ALUMCRO-X-ITE"

400/1



"HIMCO" NO. 70 STORE FRONT CONSTRUCTION

(PATENTED)

THE NEW, INEXPENSIVE MODERN GLASS SETTING WITHOUT EXPOSED SCREWS

Made in Rolled Stainless Laminated Metal, "Alumcro," "Alumilite," Bronze and Solid Stainless Steel (copper made only to order).

A NEW TYPE POSITIVE SETTING WITHOUT EXPOSED SCREWS

"Himco" No. 70 glass setting is similar in principle to the "Himco" No. 404 setting—in that all screws on the face of the construction are eliminated. This new setting is absolutely positive in action and the screw will not work loose by street vibrations.

An indirect draw acting with a lever on interlocking members of bronze, holds the glass more firmly than in the exposed screw type sash, though less pressure is exerted on the glass. This permits the window to give to vibration and atmospheric changes, thus reducing the danger of breakage from exterior causes. The glass is further protected by the use of leather cushions on a stationary extended flange. This flange, part of the solid controlling base, safeguards the glass from contact with moving parts.

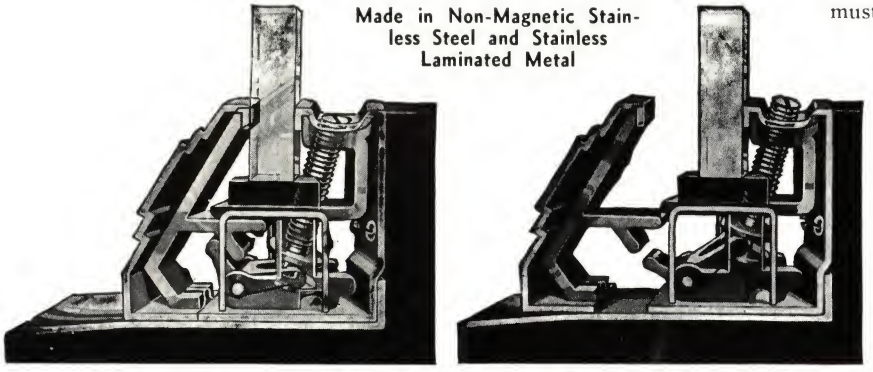
Displays Remain Clean Longer

The sash is set squarely on the sill no matter what thickness of glass used, reducing the possibility of infiltration of dust to the inside. The baffle wings behind the exterior vents divert dust, allow ventilation and eliminate dust slides.

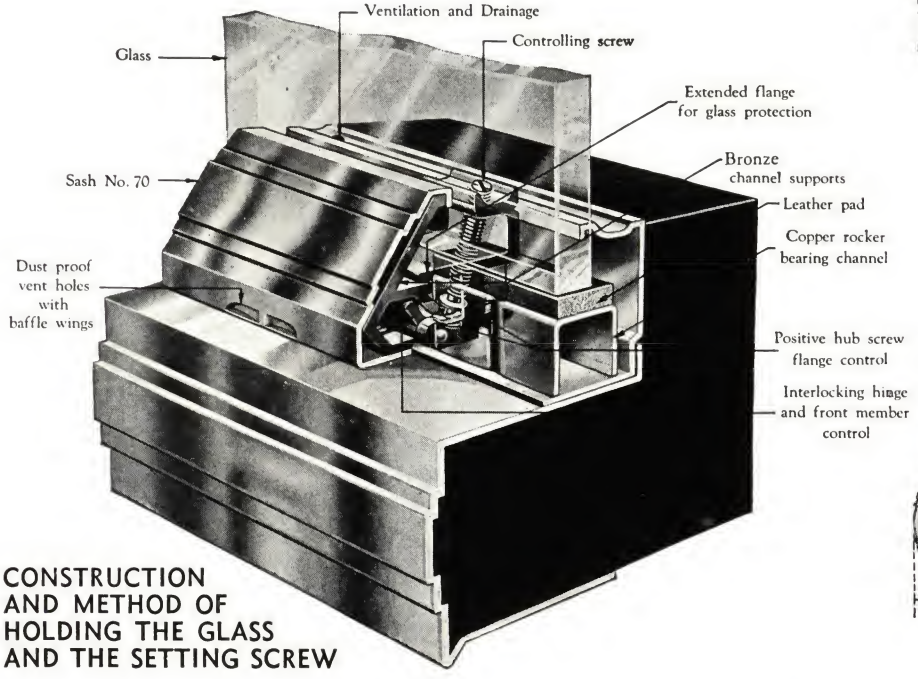
"Himco" No. 70—Harmonizes with the character of modern building design. The flat surfaces and reduced depth of construction allow the glass to be set almost on the building line. Although the mouldings are drawn, the smooth plain faces, without visible fastenings, give the effect of an extruded or cast construction.

"Himco" No. 70X—Has an extruded bronze front plate used in connection with the regular No. 70 rolled back plate sections. The No. 70X front plate allows the use of hair line miters without caps.

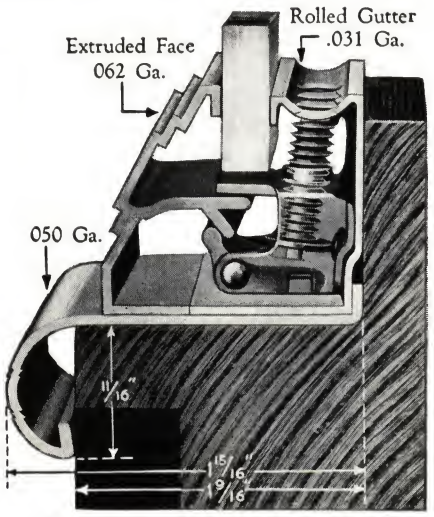
"Himco" No. 20—A new rolled Sill Section for use with No. 70 or 70X Setting in connection with structural glass, sheet materials, marble or stone. It may also be used to form a frame at head and sides of the window but head must be filled with mastic.



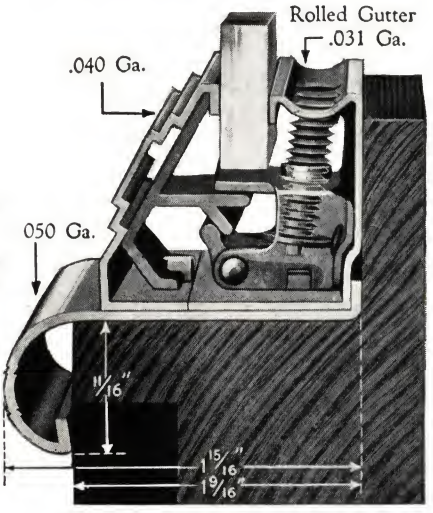
FULL SIZE SECTIONS THROUGH NO. 70. GLASS SETTING SHOWING OPERATION OF THE SETTING SCREW



CONSTRUCTION AND METHOD OF HOLDING THE GLASS AND THE SETTING SCREW



NO. 70X WITH NO. 20 SILL

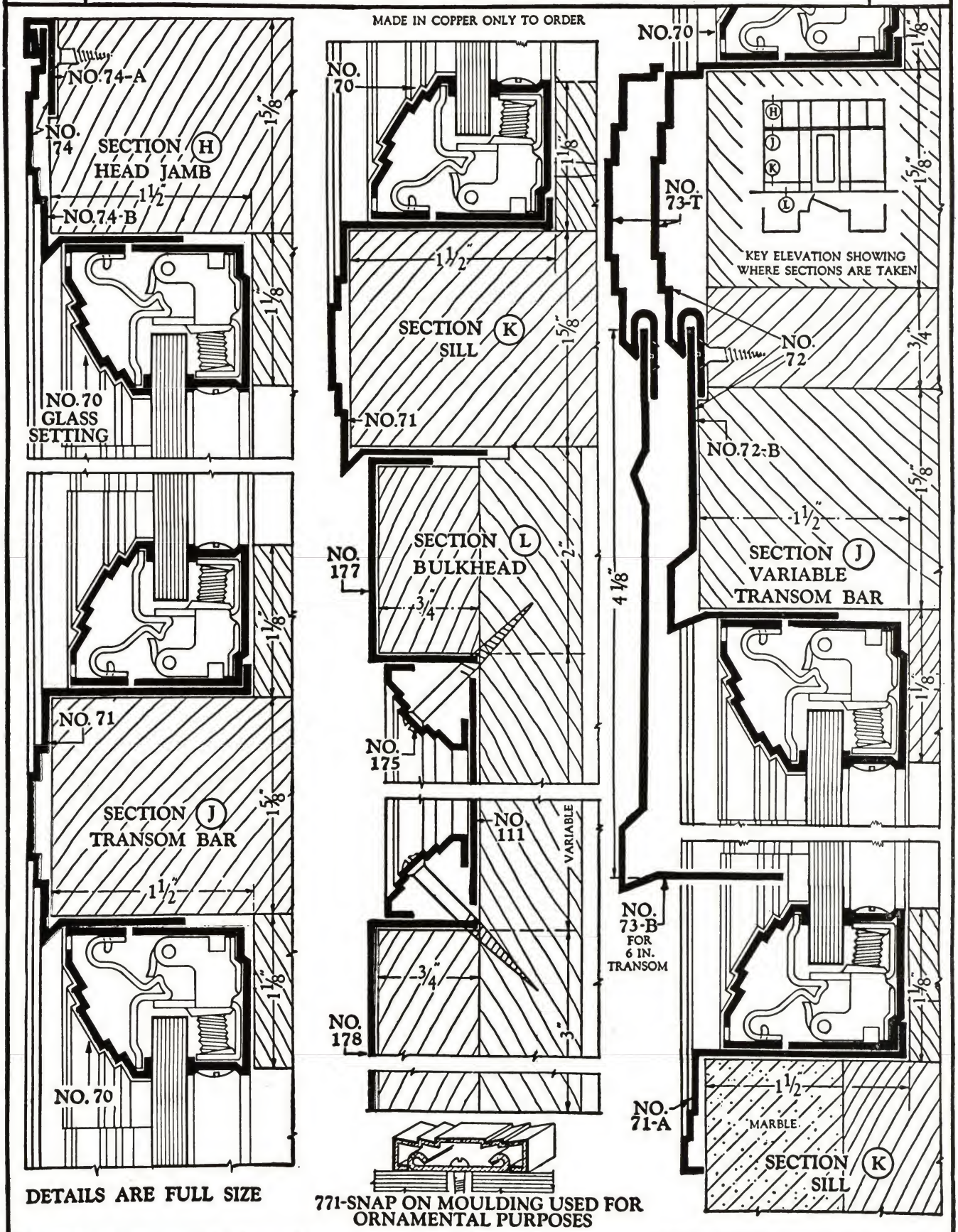


NO. 70 WITH NO. 20 SILL

"HIMCO" NO. 70 STORE FRONT CONSTRUCTION

ROLLED SOLID BRONZE, "ALUMCRO," "ALUMILITE," STAINLESS STEEL, STAINLESS LAMINATED METAL AND "ALUMCRO-X-ITE"

70/1



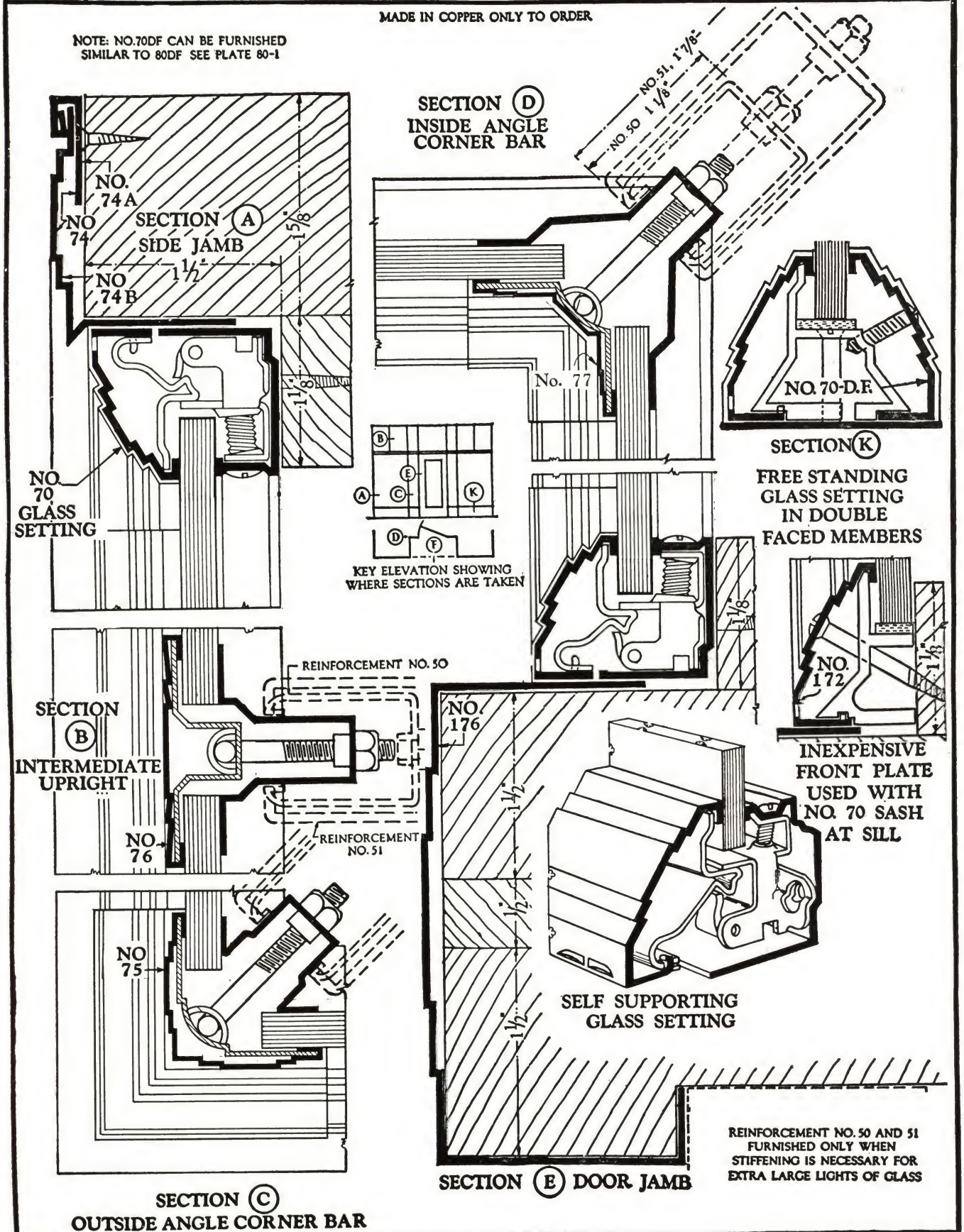
"HIMCO" NO. 70 STORE FRONT CONSTRUCTION

ROLLED SOLID BRONZE, "ALUMCRO," "ALUMILITE," STAINLESS STEEL, STAINLESS LAMINATED METAL AND "ALUMCRO-X-ITE"

70/2

MADE IN COPPER ONLY TO ORDER

NOTE: NO.70DF CAN BE FURNISHED SIMILAR TO 80DF SEE PLATE 80-1



"HIMCO" NO. 80 STORE FRONT CONSTRUCTION

(PATENTED)

MADE IN ROLLED STAINLESS LAMINATED METAL, "ALUMCRO," "ALUMILITE," BRONZE AND SOLID STAINLESS STEEL

Copper Made Only on Special Order

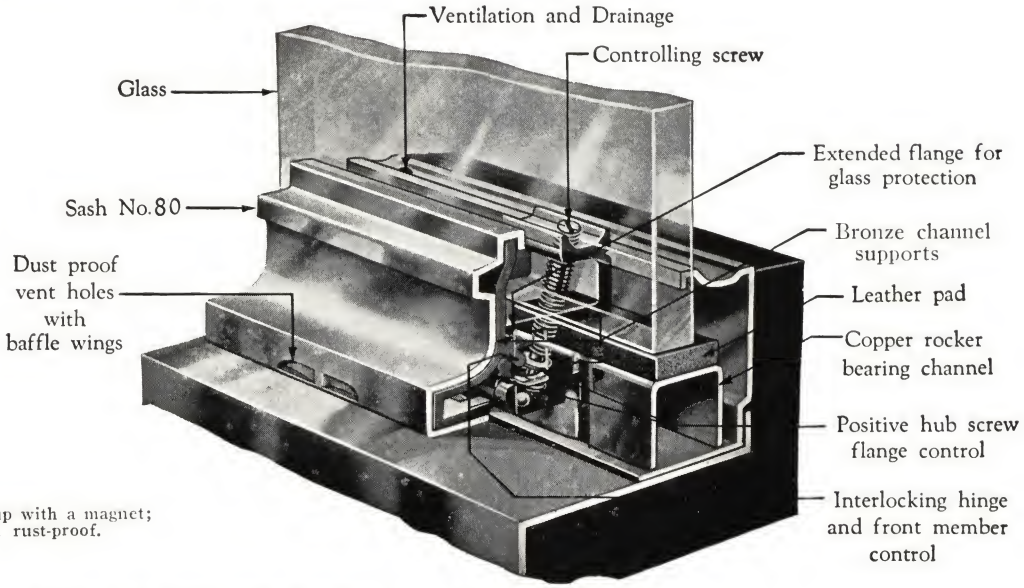
The particular advantage of this section is that it can be obtained in Rolled Solid Stainless Chrome-Nickel (chromium 18%—nickel 8%).* On account of the hardness and non-corrosive character of this metal, the slight extra cost more than offsets the reduced cost of upkeep. The metal will withstand the corrosive action of acids and smoke. Its surface is impervious to atmospheric conditions and will always retain its high polish and brilliance. This section is also produced in rolled solid "Alumcro" (aluminum alloy), and bronze.

This glass setting is similar in construction to The No. 70 setting except that the design of the profile is different. It is a vast improvement over our No. 60 setting, the details of which are also shown on page 12. The new No. 80 has no screws on the face of the setting. The setting is absolutely positive in action and screw will not work loose by vibration from street.

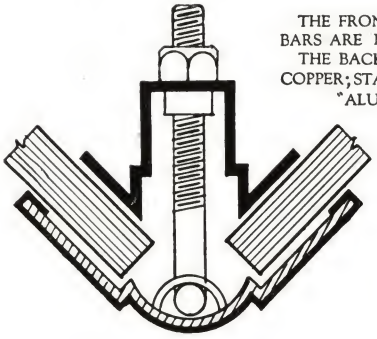
The action of the indirect draw, acting with a lever, on interlocking members of bronze is the same as that illustrated on page 6.

Ventilation and Condensation — There is a direct system of ventilation on all sides of the glass setting. The front vent holes indicated on the drawings have dust-proof baffle wings which prevent direct drafts and dust from entering show windows due to wind pressure or storms. This eliminates the use of troublesome dust slides.

*This metal cannot be picked up with a magnet; it is therefore non-magnetic and rust-proof.

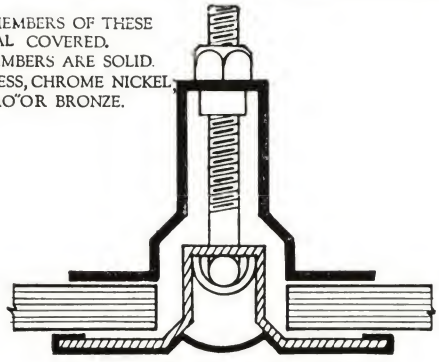


DETAIL OF CONSTRUCTION OF NO. 80 GLASS SETTING



CORNER BAR NO. 41

THE FRONT MEMBERS OF THESE BARS ARE METAL COVERED. THE BACK MEMBERS ARE SOLID COPPER; STAINLESS, CHROME NICKEL, "ALUMCRO" OR BRONZE.



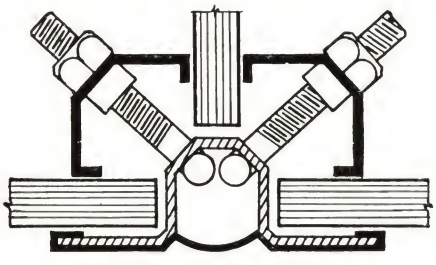
DIVISION BAR NO. 45



REVERSE BAR NO. 42

Corner Bars—These are made to fit any angle of glass setting desired. The patented method of bolting together the outer and inner sections, eliminates the use of clips, one of the commonest causes of glass breakage.

The bar constructions not only permit glass of varying thicknesses to be joined but provide equal pressure on both pieces of glass.



3-WAY BAR NO. 48

Construction of Corner—The corners are formed up of rolled steel sections to give rigidity and strength and are bronze plated. The sections exposed to the weather are covered with rolled copper, bronze, Stainless Chrome-Nickel or "Alumcro."

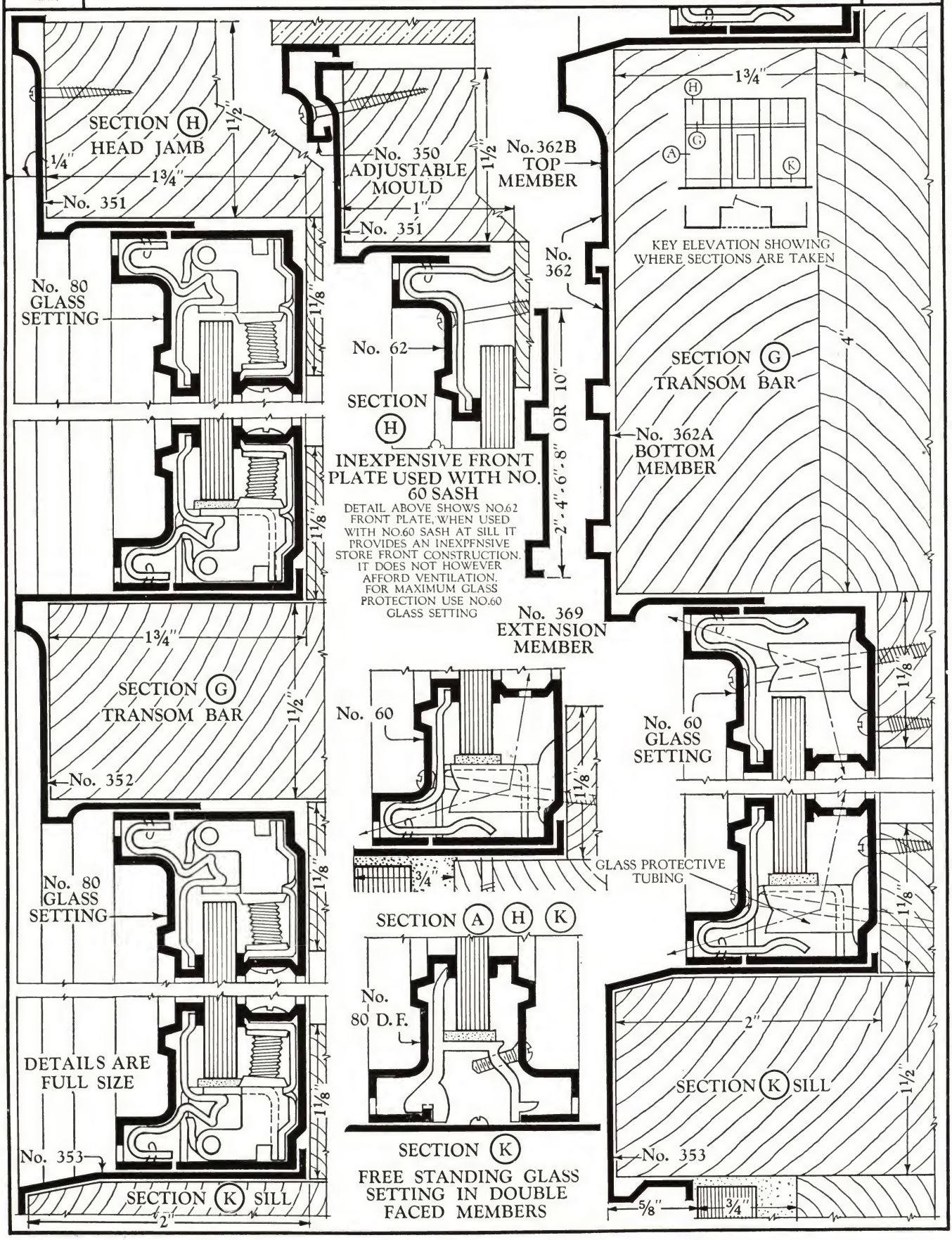
Use of Corner Bars—The rolled steel corner bars are used interchangeably with either the Nos. 22, 70 and 80, or 23 and 60 types of settings.

FULL SIZE DETAILS OF CORNER AND DIVISION BARS

"HIMCO" No. 60-80 STORE FRONT CONSTRUCTION

ROLLED SOLID BRONZE, "ALUMCRO", "ALUMILITE" STAINLESS STEEL
STAINLESS LAMINATED METAL AND "ALUMCRO-X-ITE"

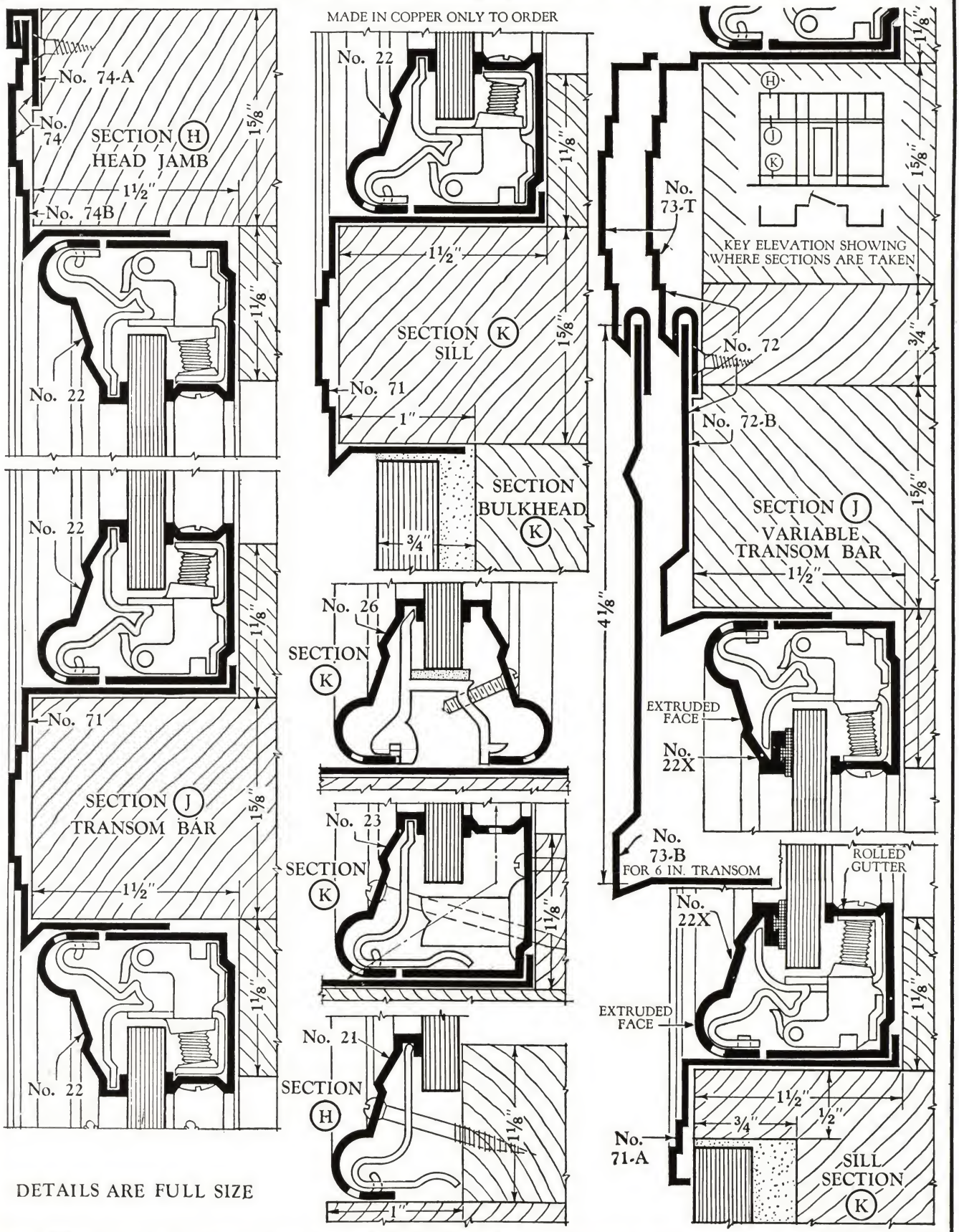
60-80
1



"HIMCO" No. 22 STORE FRONT CONSTRUCTION

ROLLED SOLID BRONZE, "ALUMCRO", "ALUMILITE" STAINLESS STEEL
STAINLESS LAMINATED METAL AND "ALUMCRO-X-ITE"

22
1

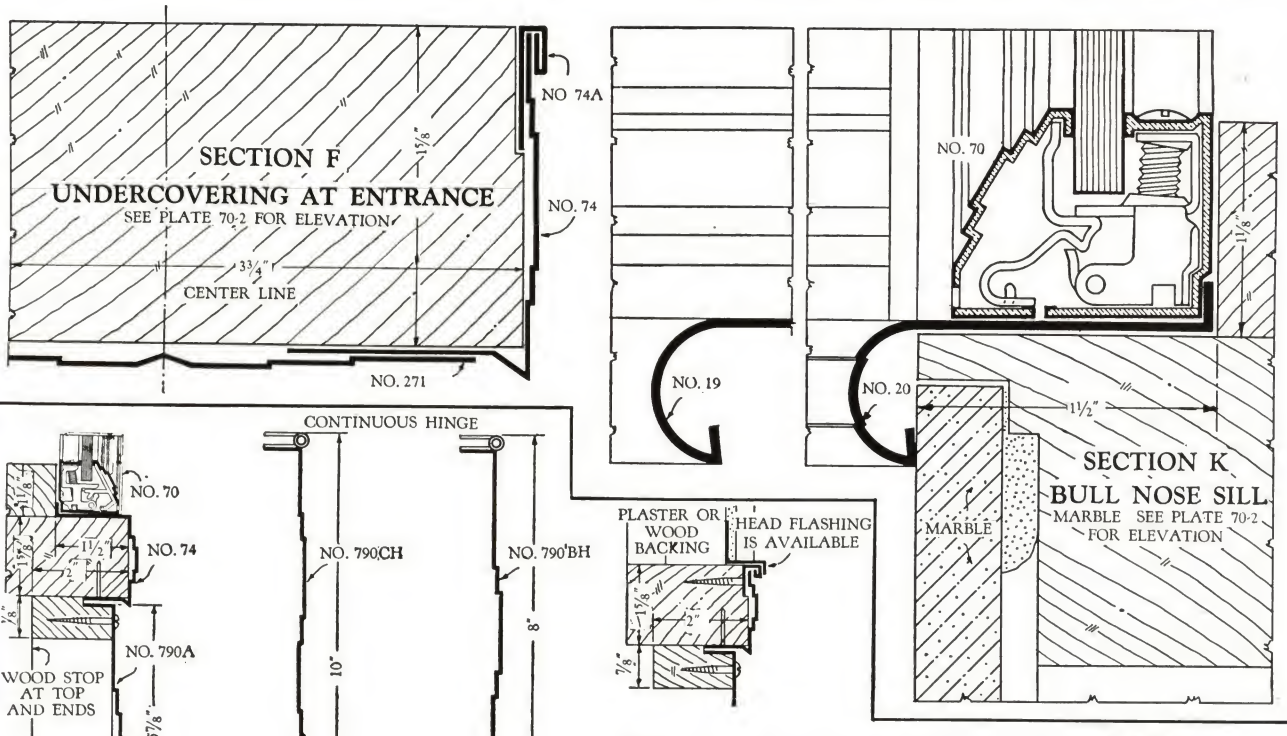


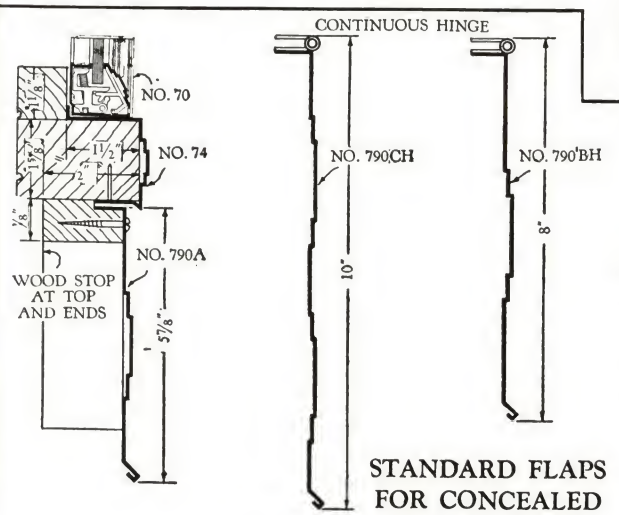
DETAILS ARE FULL SIZE

"HIMCO" NO. 70 STORE FRONT CONSTRUCTION

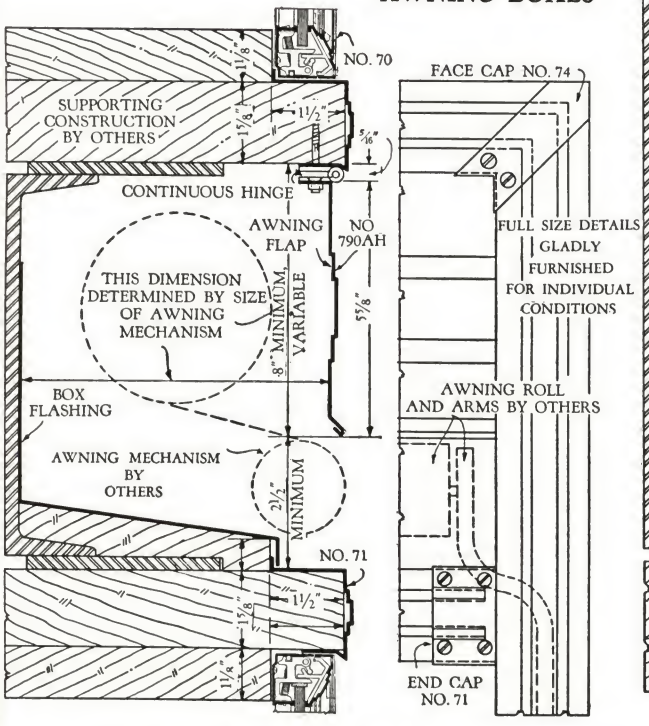
ROLLED SOLID BRONZE, "ALUMCRO," "ALUMILITE," STAINLESS STEEL AND "ALUMCRO-X-ITE"

70
3

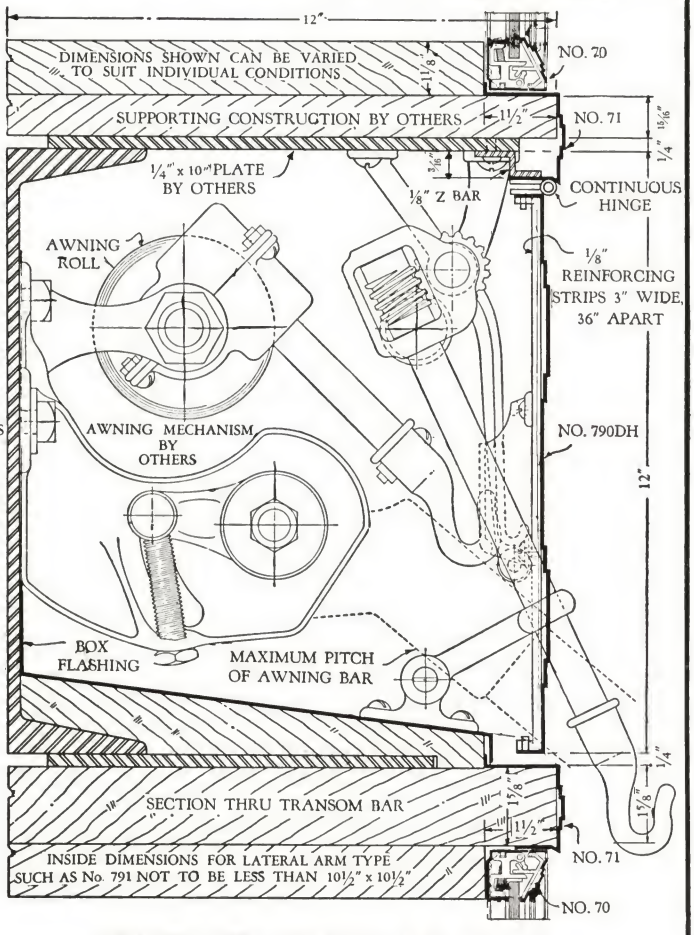




STANDARD FLAPS FOR CONCEALED AWNING BOXES



CONCEALED AWNING BAR No. 790

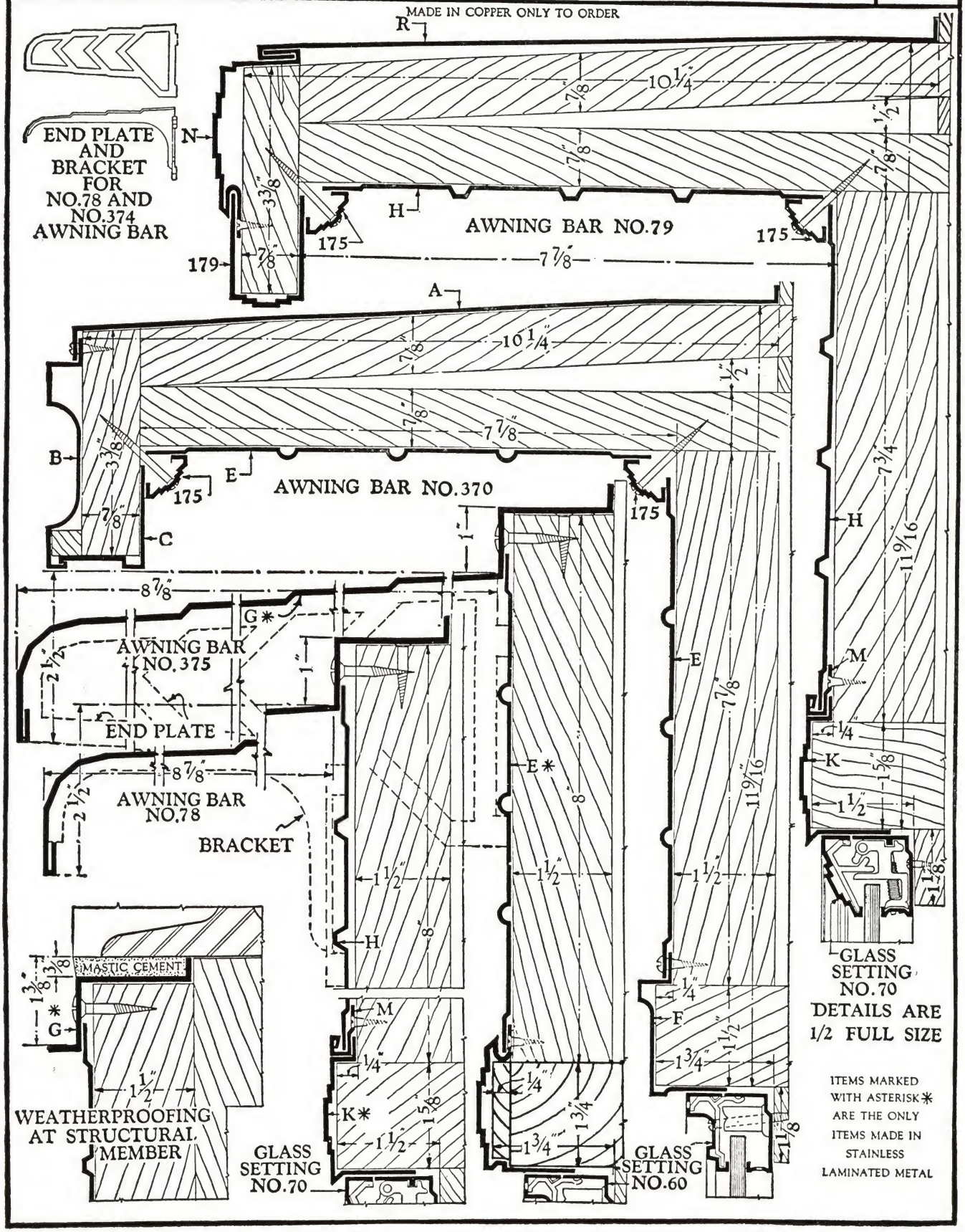


CONCEALED AWNING BAR NO. 791

"HIMCO" NO 60,70,80 STORE FRONT CONSTRUCTION

ROLLED SOLID BRONZE, "ALUMCRO," "ALUMILITE," STAINLESS STEEL, STAINLESS LAMINATED METAL AND "ALUMCRO-X-ITE"

60-70-80
3

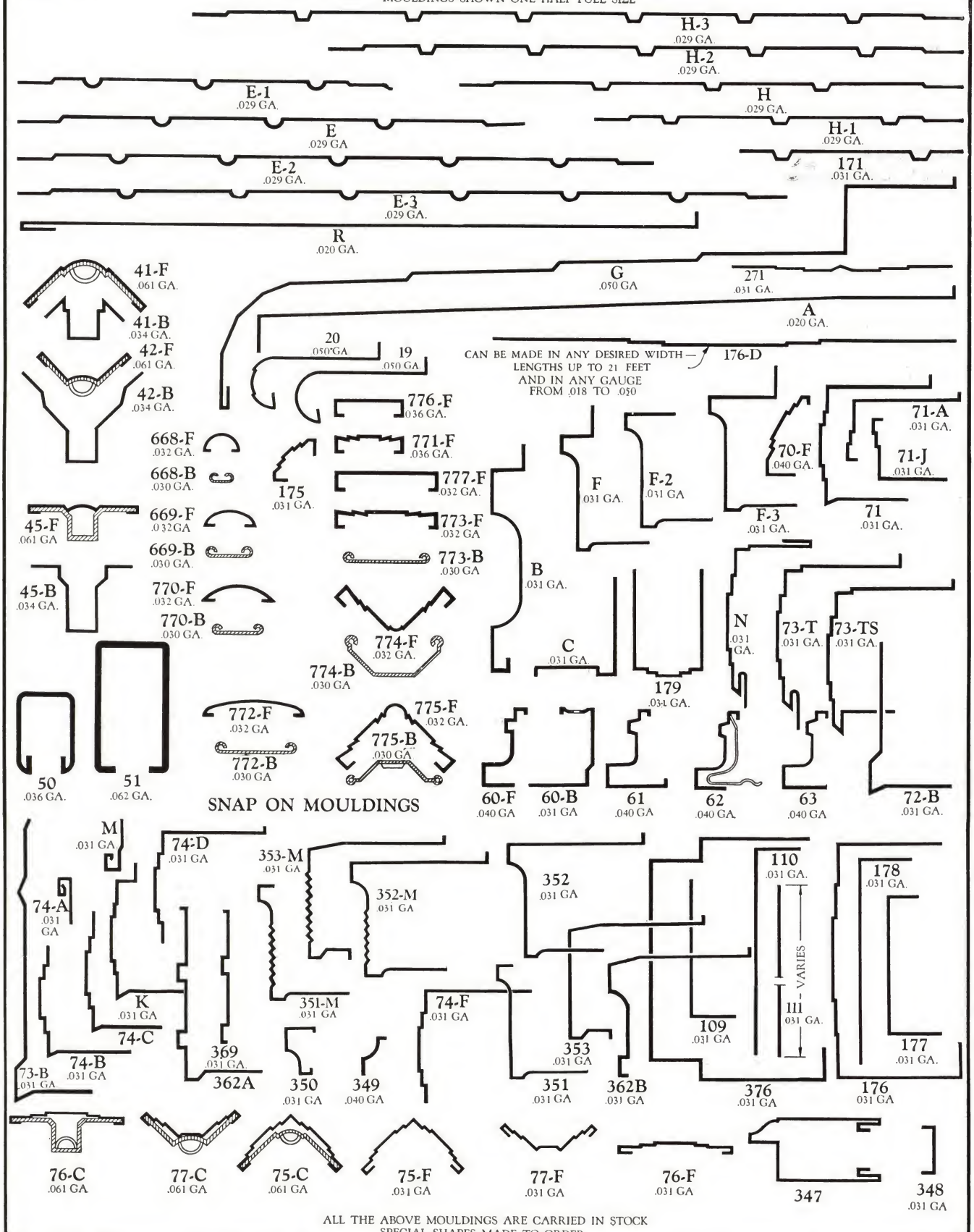


"HIMCO" STOCK MOULDINGS

ROLLED SOLID BRONZE, "ALUMCRO," "ALUMILITE,"
STAINLESS STEEL AND "ALUMCRO-X-ITE"

70
4

MOULDINGS SHOWN ONE HALF FULL SIZE



ALL THE ABOVE MOULDINGS ARE CARRIED IN STOCK
SPECIAL SHAPES MADE TO ORDER

"HIMCO"

STAINLESS METAL STORE FRONT CONSTRUCTION

"Alumcro-x-ite" and "Alumilite"

(An Alumcro Oxide Hard Surface Aluminum Finish, Not Subject to Discoloration Like Aluminum)

THE HIMMEL BROTHERS CO.

1409-15 Dixwell Avenue - - - - - HAMDEN, CONN.
(Suburb of New Haven)

Distributors in Principal Cities

ILLINOIS BRONZE & IRON WORKS

Manufacturers of Bronze, Aluminum and Other Non-Ferrous Metals;
Store Front Metal—Ornamental Iron and Bronze for Buildings

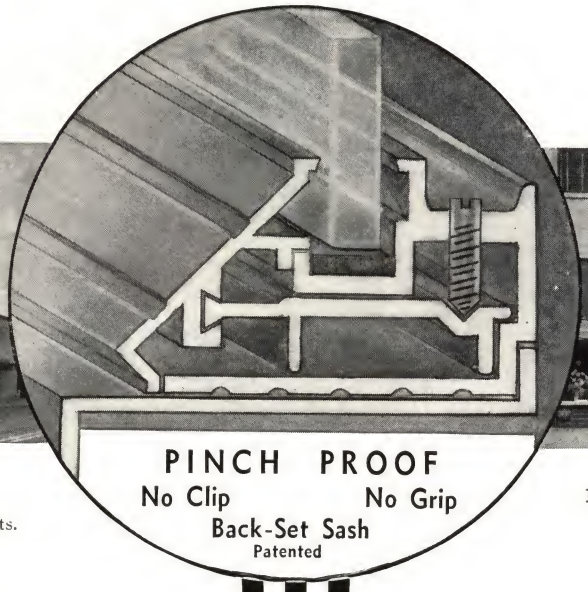
TELEPHONE
Van Buren 6040

915-923 South Kildare Avenue
CHICAGO, ILL.

Member—
Iron League of Chicago



Storch Building, River Forest, Ill.
A. S. Alschuler and Associates, Architects
Aluminum and porcelain. 17 store units. Note curved fronts





Dennison Store, Chicago, Ill.
Mundie, Jensen, Bourke & Havens, Architects

EXTRUDED ALUMINUM

ILLCO
METAL STORE FRONTS

EXTRUDED BRONZE

General Note

Above installations show the adaptability of Illco Standard Extruded Back-set Sash. These photographs indicate a few of our recent extruded metal store front installations. The diversified use of metal construction and precise workmanship is evident. We make no attempt to standardize construction and will manufacture work in accordance with any special building condition. Illco contracts work from coast to coast.

Construction Features

Patented back-set sash—glass sets in clear channel seat, glass back puttied.

Eliminates glass breakage. No pinching of glass against metal. Setting fastens to bulkhead—wood or stone.

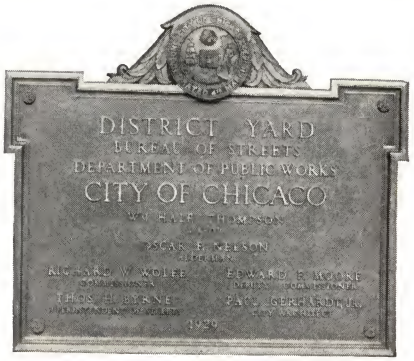
Sash can be set on bulkhead before show window floor is in place. Face stop removable. Heavy extruded sash obtainable in aluminum or bronze.



Blackstone Shop, Chicago, Ill.
Modern entrance of black and white treatment
160J

Scope of Work

Metal Doors	Cast Letters
Mausoleum Equipment	Tablets
Grilles	Railings—Brass, Iron, Etc.
Cast Iron	Display Cases
Wrought Iron	Metal Store Fronts





Mausoleum Doors
We have many different designs. Write for catalog

MEMORANDA

Kawneer

STORE FRONTS

1939

19/6

ARCHITECTURAL PORCELAIN ENAMEL



COLORFUL FACING FOR THE ENTIRE BUILDING

Kawneer Architectural Porcelain (Vitreous) Enamel Panel Construction offers a permanently attractive and colorful facing material for all types of store fronts and buildings. 27 standard colors include a variety of pastel shades, as well as the darker colors, and black and white—from which many harmonious color combinations can be selected. In addition, practically any color desired can be made to special order, and special designs, or letters reproduced.

With this modern facing material the designer is practically unlimited, since enameling steel can be fabricated in almost any shape or form desired.

STANDARD SHAPES (BELOW)

Important developments of the past few years have placed Kawneer Architectural Porcelain Enamel in the front rank of modern facing materials, for both exterior and interior use.

DESCRIPTION. Sturdy panel construction involves the fabrication of heavy 16-gauge extra flat enameling steel, with ¾" flanges on all sides and welded at corners. These panels are then completely porcelain (vitreous) enameled on both sides—with 3 coats of desired color on face, fused under terrific heat each time. (1550°F.) Backing of ½" insulation board is then applied securely with water and heat proof cement—for strength, rigidity, insulation against sound and heat, and to prevent possible sweating.

The result is a panel construction of glass-fired steel, which can be produced in any shape or color—with a tough, inorganic non-porous surface, changeless color, and comparatively light weight. Each panel is individually suspended on concealed resilient clips.

USES. For exterior wall facing on masonry, wood or steel frame construction—for interior wall finish—as finishing material for ceilings, partitions, floors, etc.

ADVANTAGES:

Attractiveness—pleasing and modern in appearance, with sales-building life and color—narrow joints—concealed fastenings.

Durability—a tough surface and a strong light base—not easily damaged by fire or extreme temperatures—will not chip, break, scratch, flake, or crack or wear under ordinary use.

Wide range and permanence of color—25 standard colors plus black and white offer many interesting combinations and over 400 special colors and shades are available, meeting all requirements.

Low maintenance cost—non-porous and glasslike, porcelain enamel is easily cleaned.

Ease of erection and replacement—panels are light and strong, easily handled.

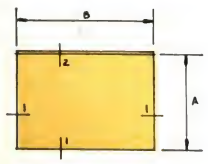
Safety. Comparatively light in weight, these panels may be installed to any height, since they are securely held by mechanical fastenings, and individually suspended.

High salvage value. Panels may easily be removed and installed in new location.

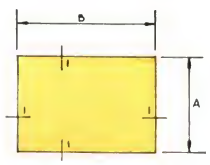
Adaptability. Unlike other facing materials, architectural porcelain enamel may be economically formed in any desired shape.

CONSTRUCTION. Heavy 16-gauge enameling steel, the best frits and oxides and advanced methods of fabrication and porcelain enameling are employed.

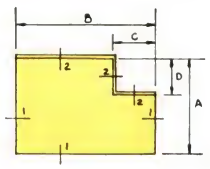
Flanges all around each panel provide greater rigidity and keylock the calking. Each panel flashes the one above to keep out water. (See details on page 3.) Individual suspension, on patented bronze spring clips, means a strong, resilient setting which is completely concealed. All flat panels are backed and strengthened by ½" insulation board securely attached with water and heat proof cement, and curved panels are also backed up by the best method under the condition applying. Narrow ⅛" space between panels.



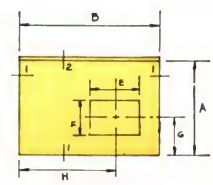
TYPE R



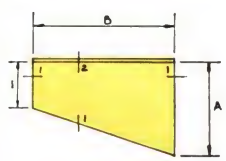
TYPE R-1



TYPE R-2
LEFT AND RIGHT RIGHT SHOWN



TYPE R-3



TYPE R-4
LEFT AND RIGHT RIGHT SHOWN

ARCHITECTURAL PORCELAIN ENAMEL

STANDARD SIZES—16″ x 16″, 16″ x 24″, 20″ x 20″, 20″ x 28″, or any special sizes desired. Max. 2′ x 3′.

STANDARD SHAPES. Shown in drawings below.

SPECIAL SHAPES. Design possibilities are practically limitless, because enameling steel can be so readily formed in shapes to meet any requirement—making this probably the most versatile facing material.

SIGN LETTERS—May be fabricated to special shapes or fired as a design on individual panels.

COLORS AND DESIGNS. Almost any color or shade can be produced by the porcelain enamel process. Combinations may be made on any panel, and designs, stripes, letters, symbols, or even pictorial treatment reproduced.

Twenty-five standard satin finish colors meet all ordinary requirements for attractive and harmonious combinations on the average job. These are in addition to black and white, in gloss finish. (Color card on request.)

FINISHES. The Kawneer Satin Finish (semi-matt, acid-resisting) is especially attractive, without excessive gloss, is acid-resisting and unaffected by atmospheric conditions. Where high lustre and reflectivity are desired, a gloss finish may be specified.

ERECTION. For best results Kawneer Architectural Porcelain Enamel Panels are installed on ¾″ x 2″ steel furring strips (wood furring strips may be used). Furring Strips are fastened to wood with wood screws or to masonry with expansion plugs, spaced to accommodate the panels as ordered, and located plumb and level. Bronze Spring Clips are applied to metal furring with self-tapping screws at top and bottom of each panel. The bottom clips are applied first; then the panel is placed in position; then the top clips applied. Joints between panels (⅛″) are then calked.

REPLACEMENT. In the event of damage to any panel it may be removed without disturbing any of the surrounding panels—thanks to Kawneer individual suspension. Bottom clips are flattened with a screw driver, panel removed, and the new panel easily replaced.

PORCELAIN ENAMEL. Porcelain enameling as a fine art has been known for thousands of years and our museums display centuries-old work which retains all of its original life and color. Recent improvements have now made it possible to use this beautiful and durable material for architectural purposes, just as it has been used so successfully for household appliances.

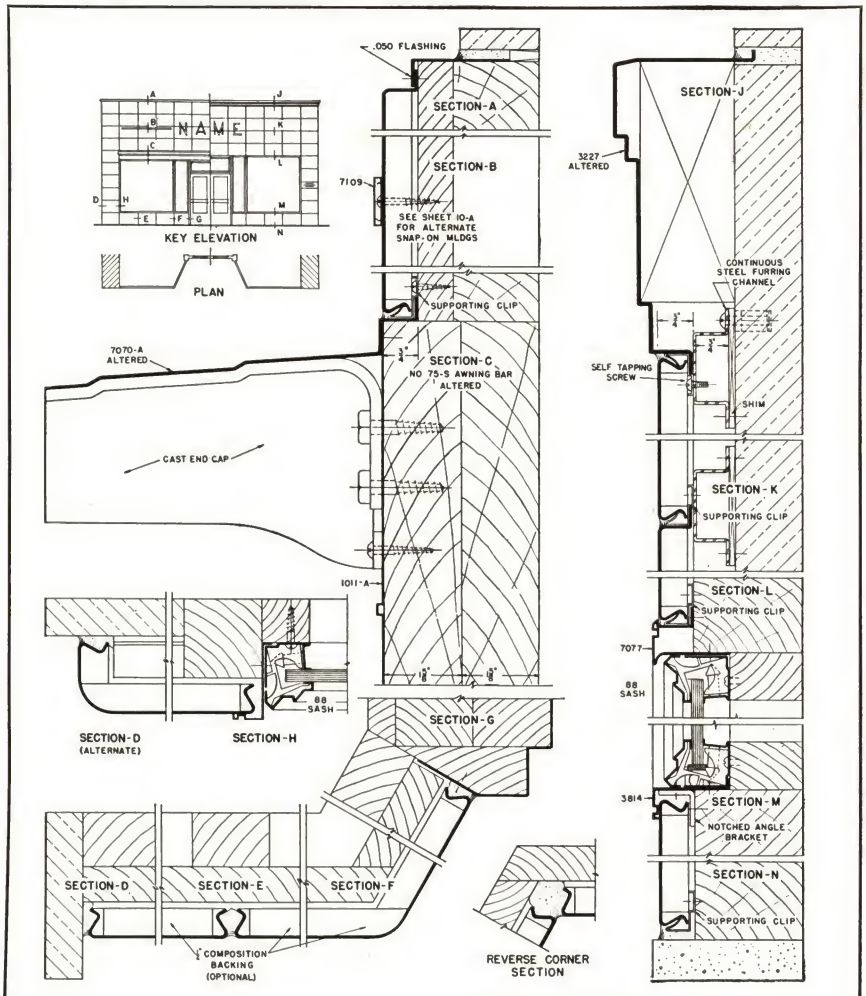
Porcelain enamel is inorganic, non-porous, changeless, all mineral; being composed entirely of silica, borax, zinc oxides and other mineral substances. The firing process completely fuses it with the metal base and the terrific heat completely destroys all organic substances.

Do not confuse porcelain enamel with baked-enamel finishes, such as those used on automobiles. It is not an enamel, not a paint, not a lacquer, all of which contain organic, chiefly vegetable, matter which is subject to change. It is in reality glass, fused and made one with the metal base which has been formed to the desired shape—combining the permanence of glass with the strength and lightness of steel.

WRITE FOR COMPLETE INFORMATION

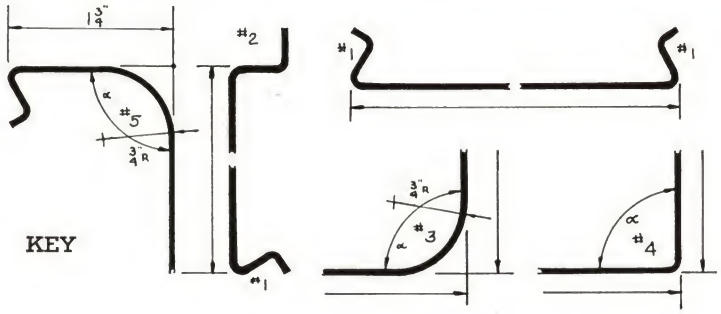
THE NILES Kawneer COMPANY MICHIGAN

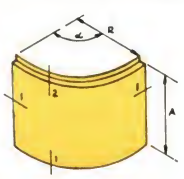
BRANCHES: New York, Chicago, Berkeley, Calif. Distributors in all principal cities.



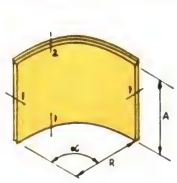
PATENTED AND PATENTS PENDING

INSTALLATION DETAILS (3″ SCALE)

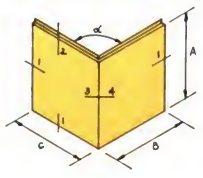




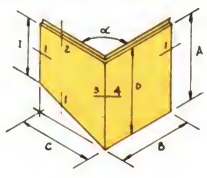
TYPE R-5



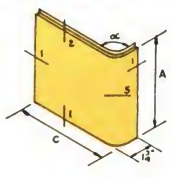
TYPE R-6



TYPE R-7



TYPE R-8

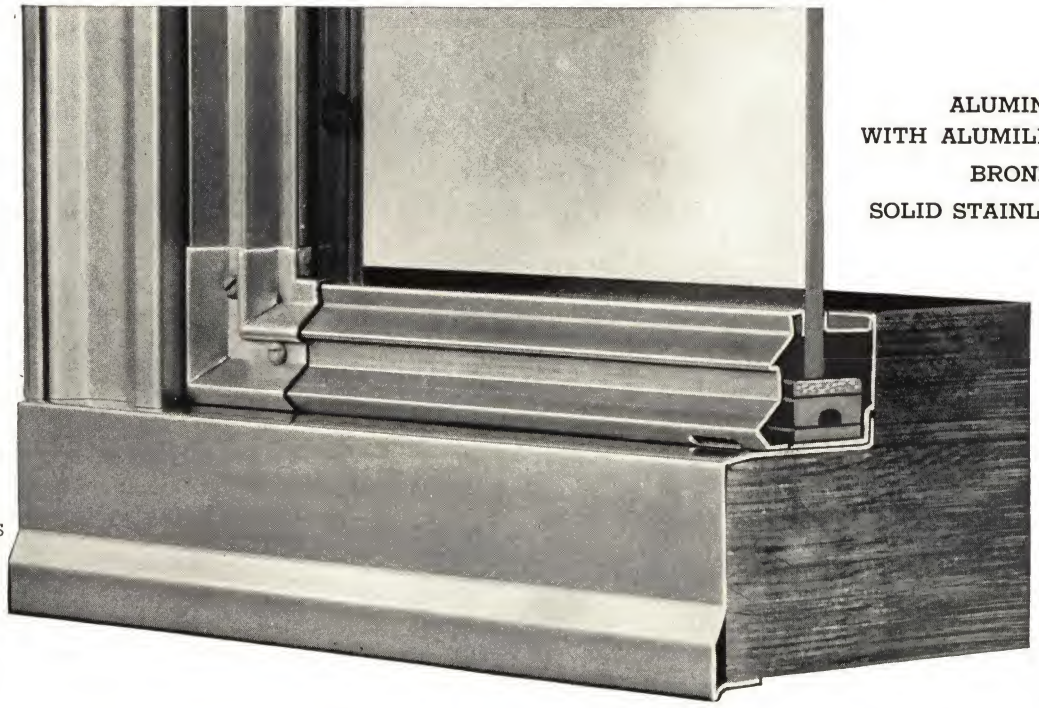


TYPE R-9

LEFT AND RIGHT RIGHT SHOWN

19/6

ROLLED STORE FRONT CONSTRUCTION



ALUMINUM
WITH ALUMILITE FINISH
BRONZE
SOLID STAINLESS STEEL

PATENTED
AND PATENTS
APPLIED FOR

COMPLETE, HARMONIOUSLY DESIGNED STORE FRONT CONSTRUCTION

Kawneer Store Fronts include all necessary metal construction (glass holding members, trim mouldings, glass-fired metal facing, doors, etc.) for the complete front. Kawneer construction is up-to-date, and efficiently designed to give lasting, trouble-free service. The superior FULLY RESILIENT construction (the basic Kawneer principle) allows for the inevitable movement of plate glass, yet holds it in a secure and powerful grip—regardless of variations in thickness of glass. Pressure is distributed evenly along the surface. Looseness and rattling are eliminated and the possibilities of glass breakage are reduced to an absolute minimum.

The simple, attractive Sash No. 88 holds glass by indirect screw pressure, applied from the back. Sash is perforated at intervals for drainage and face piece is provided with ventilation holes unless otherwise specified.



SASH No. 88

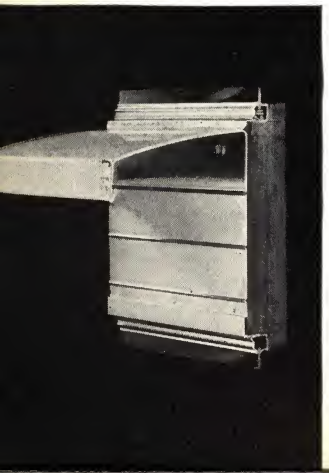
In addition to sash, the Kawneer line of rolled store front construction includes parts for every store front use—bars, awning bars, transom bars, mouldings, pilasters, sign letters, rustless metal doors, metal paneling, bulkheads, grilles, thresholds, showcase doors, ventilators, poster frames, cast ornaments and architectural metal work.

This construction is cold-rolled—straight and true—in suitable modern alloys of aluminum, bronze or solid stainless steel. The alumilite finish on aluminum hardens the surface—giving extra protection against atmosphere and abrasion, and imparting a unique and appealing gloss and color to the aluminum itself. Satin, polished, statuary or other practical finishes are also available for bronze—satin or polished for stainless steel.

COMPLETE FULL-SIZE DETAILS ARE AVAILABLE

4

HOOD AWNING BAR



CONCEALED AWNING BAR



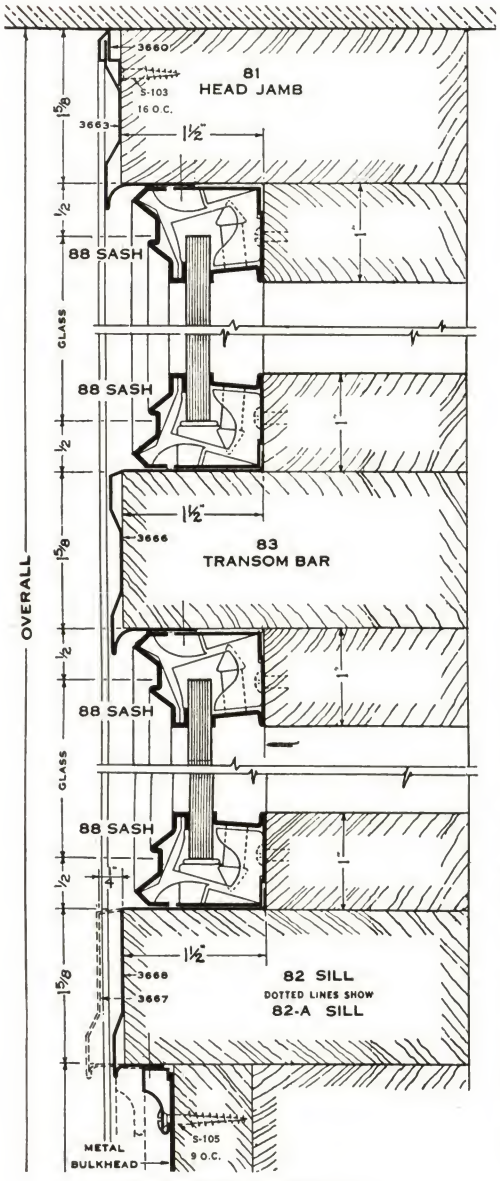
RECESSED AWNING BAR



TRANSOM BAR



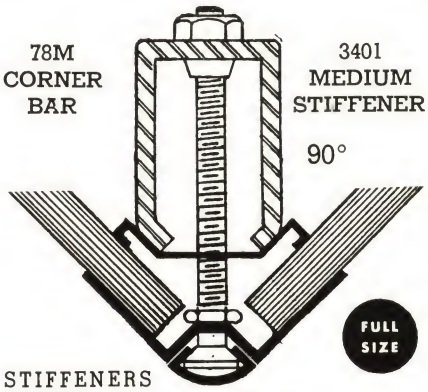
ROLLED STORE FRONT CONSTRUCTION



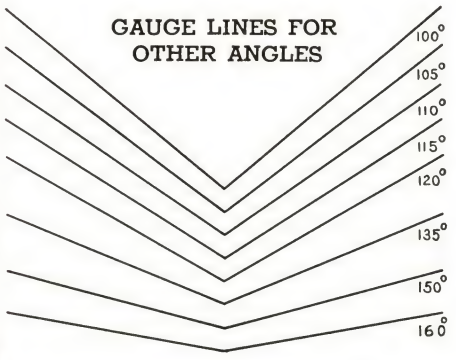
VERTICAL SECTION

BARS AND STIFFENERS

Kawneer Bars should always be used to complete the framing of the show window, to minimize chances of glass breakage by providing full resiliency all around the plate glass, and to avoid the chance of injury to the passerby. Stock angles for rolled bars are shown in the gauge lines below, but these bars may be obtained at any angle desired.



STIFFENERS should be specified according to Table of Bars below. Reinforcement for Heavy Stiffeners supplied only when specified.



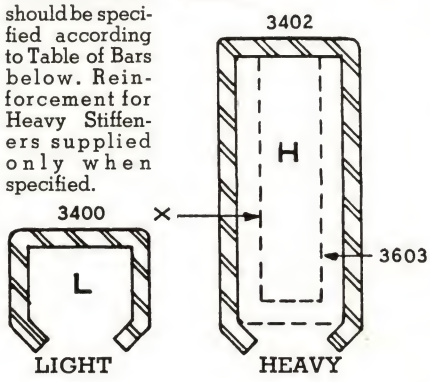
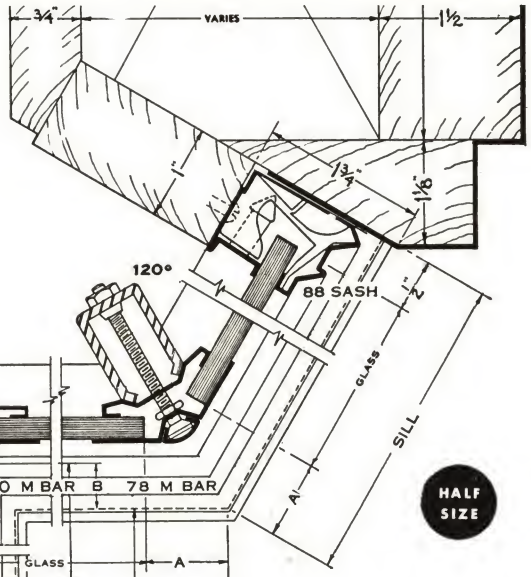


TABLE OF BARS			
IN ORDER TO FACILITATE THE SELECTION OF PROPER BARS WE SUBMIT A TABLE WHICH WE BELIEVE WILL BE OF GREAT ASSISTANCE IN ORDERING. WE ARE ALSO SUBMITTING A FORMULA AS AN EXPLANATION OF THIS TABLE.			
STIFFENER	A	B	C
LIGHT	60 In.	100 Sq. Ft.	55 Sq. Ft.
MEDIUM	78 In.	130 Sq. Ft.	70 Sq. Ft.
HEAVY	96 In.	140 Sq. Ft.	72 Sq. Ft.
HEAVY-X	108 In.	144 Sq. Ft.	80 Sq. Ft.
FORMULA—WE RECOMMEND ALL OF OUR BARS AS LISTED WHERE THE GLASS HEIGHT DOES NOT EXCEED THAT GIVEN IN COLUMN (A) AND THE COMBINED AREA OF THE 2 PLATES IS LESS THAN THE SQUARE FOOTAGE LISTED IN COLUMN (B). THE AREA OF 1 PLATE MUST NOT EXCEED THAT LISTED IN COLUMN (C).			



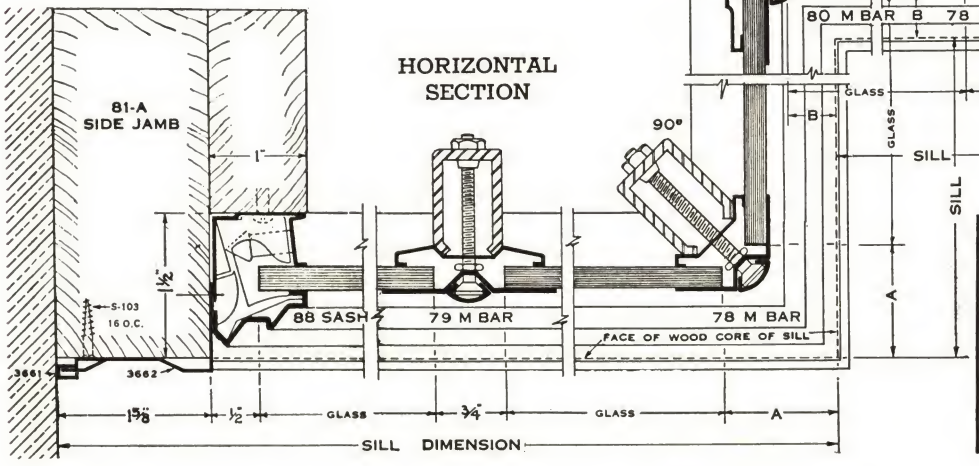
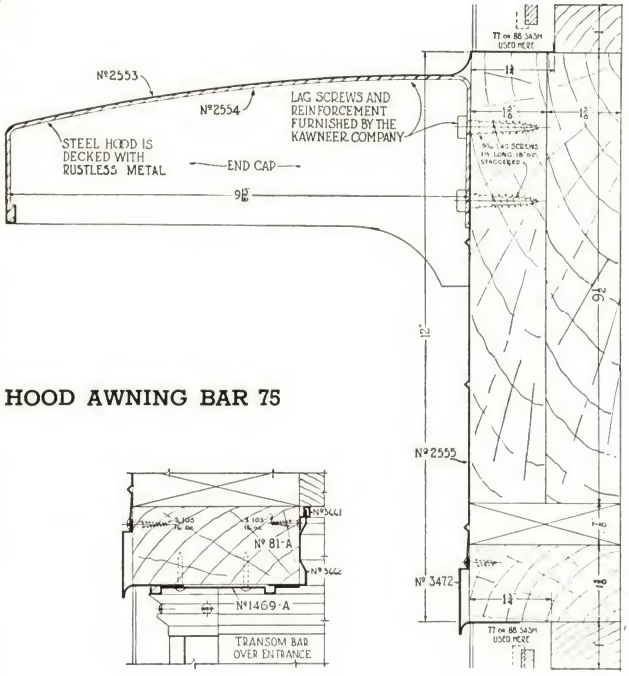


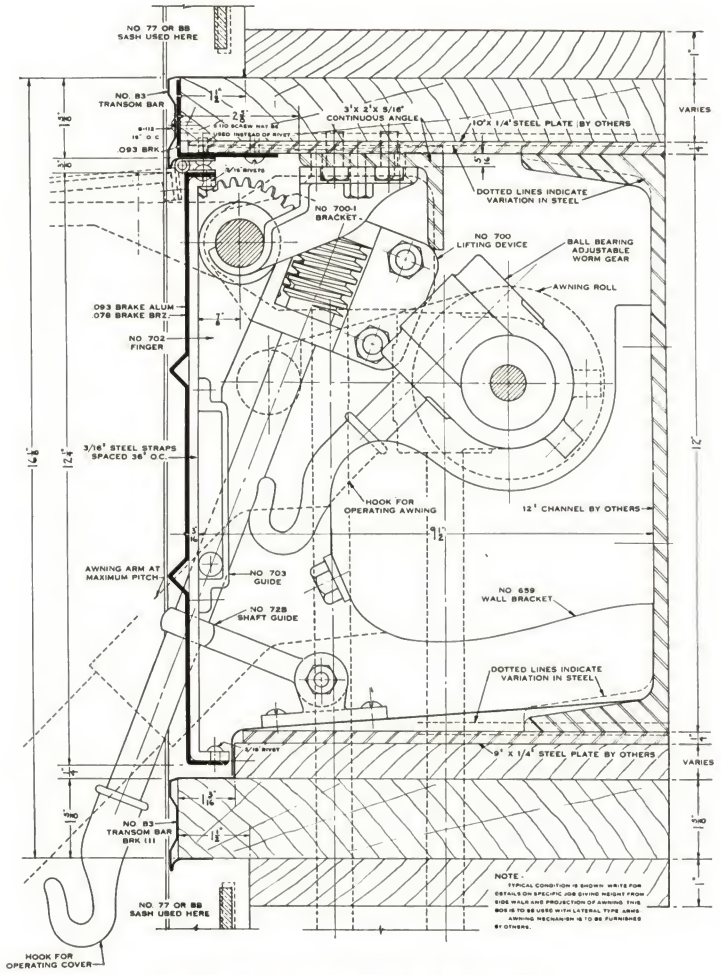
Table Showing Dimension A		Table Showing Dimension B	
90°	1⅛" +	90°	7/16" −
100°	1" +	100°	5/16" −
105°	15/16" +	105°	¼" −
110°	⅞" +	110°	3/16" −
120°	13/16" +	120°	1/16" −
130°	11/16" +	130°	0"
135°	⅝" +	135°	1/16" +
150°	9/16" +	150°	3/16" +

19
6

ROLLED STORE FRONT CONSTRUCTION

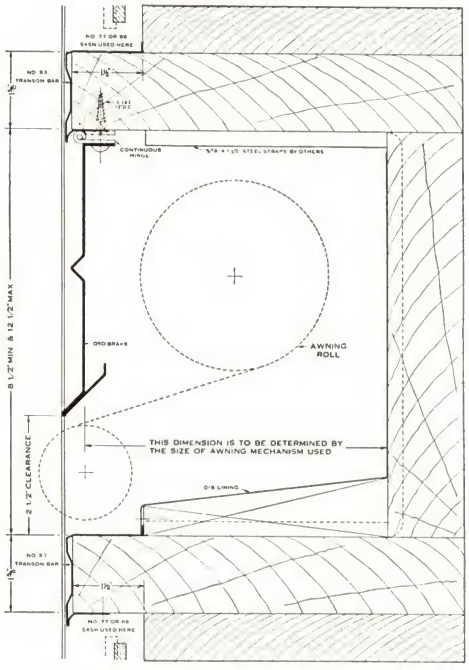


HOOD AWNING BAR 75



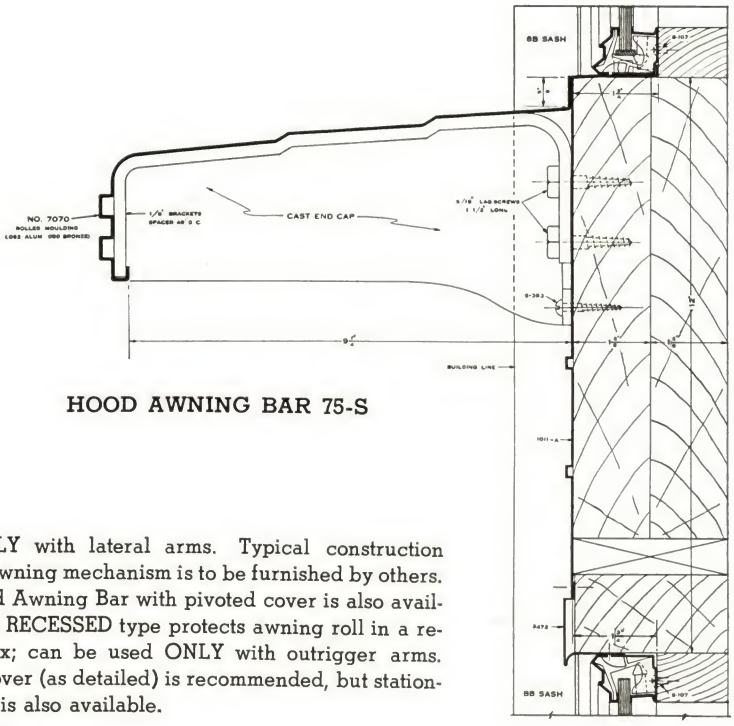
CONCEALED AWNING BAR 32-H

QUARTER SIZE



PATENTED AND PATENTS PENDING

RECESSED AWNING BAR 35



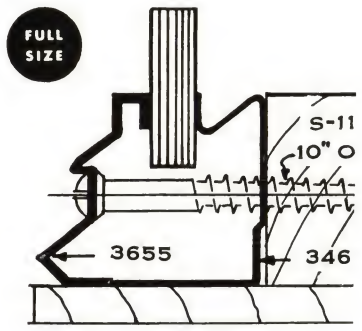
HOOD AWNING BAR 75-S

AWNING BARS

The four types of Kawneer Awning Bars detailed on this page are very attractive and practical for any style of store front.

The HOOD types are simple in design, easily installed, and give dependable protection — may be used with lateral or outrigger arms. The CONCEALED type hides and protects the awning roll when not in use; can be used ONLY with lateral arms. Typical construction shown. Awning mechanism is to be furnished by others. Concealed Awning Bar with pivoted cover is also available. The RECESSED type protects awning roll in a recessed box; can be used ONLY with outrigger arms. Hinged cover (as detailed) is recommended, but stationary cover is also available.

ROLLED STORE FRONT CONSTRUCTION



SASH
87

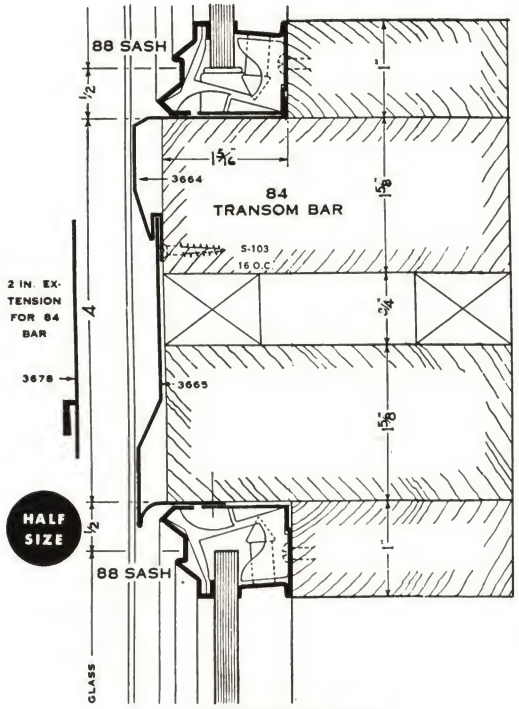
PATENTED AND
PATENTS PENDING

The Kawneer Sash No. 87 presents a very neat appearance for the average store front. It is a simple, screw-pressure type of cold-rolled sash—the principle of which has been proved by 34 years of general use. Fully RESILIENT members are fabricated from proper alloys of aluminum, bronze or stainless steel in any practical finish. Very similar in appearance to the No. 88 Sash.



SIGNS · SPECIAL METAL WORK

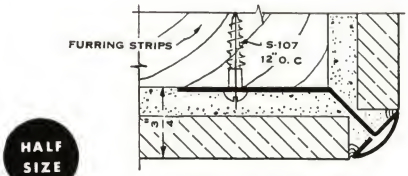
Several types of metal signs are available—fabricated to the architect's specifications. Illustrated above is the ribbon type, mounted on black porcelain enamel. In addition to the material detailed in this catalog, Kawneer furnishes many other mouldings and shapes, and fabricates all types of special metal work to order.



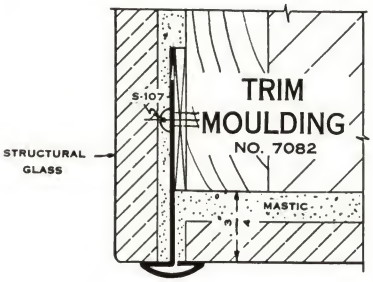
TRANSOM BAR

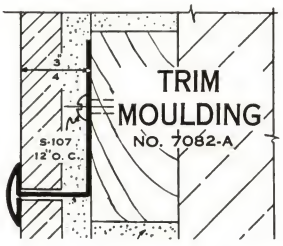
Note Extension Moulding No. 3678 for wider bars.

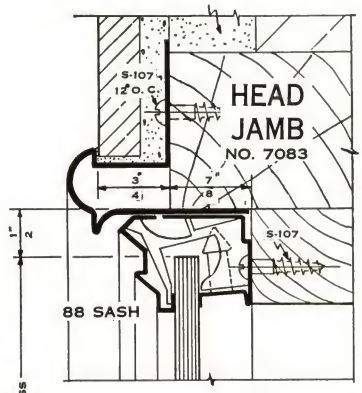
TRIM MOULDINGS

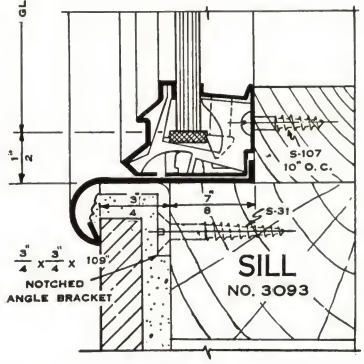


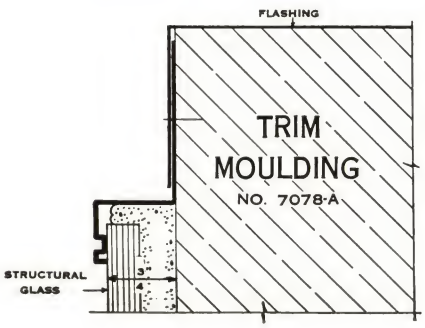
CORNER TRIM
NO. 7082-B



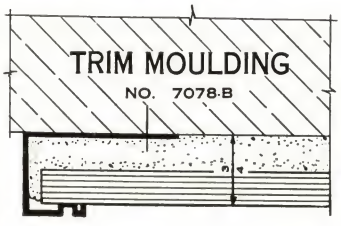


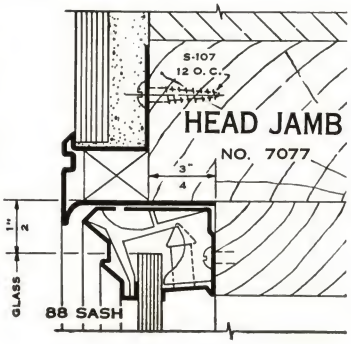


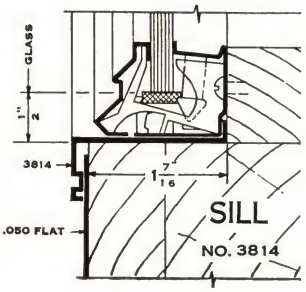




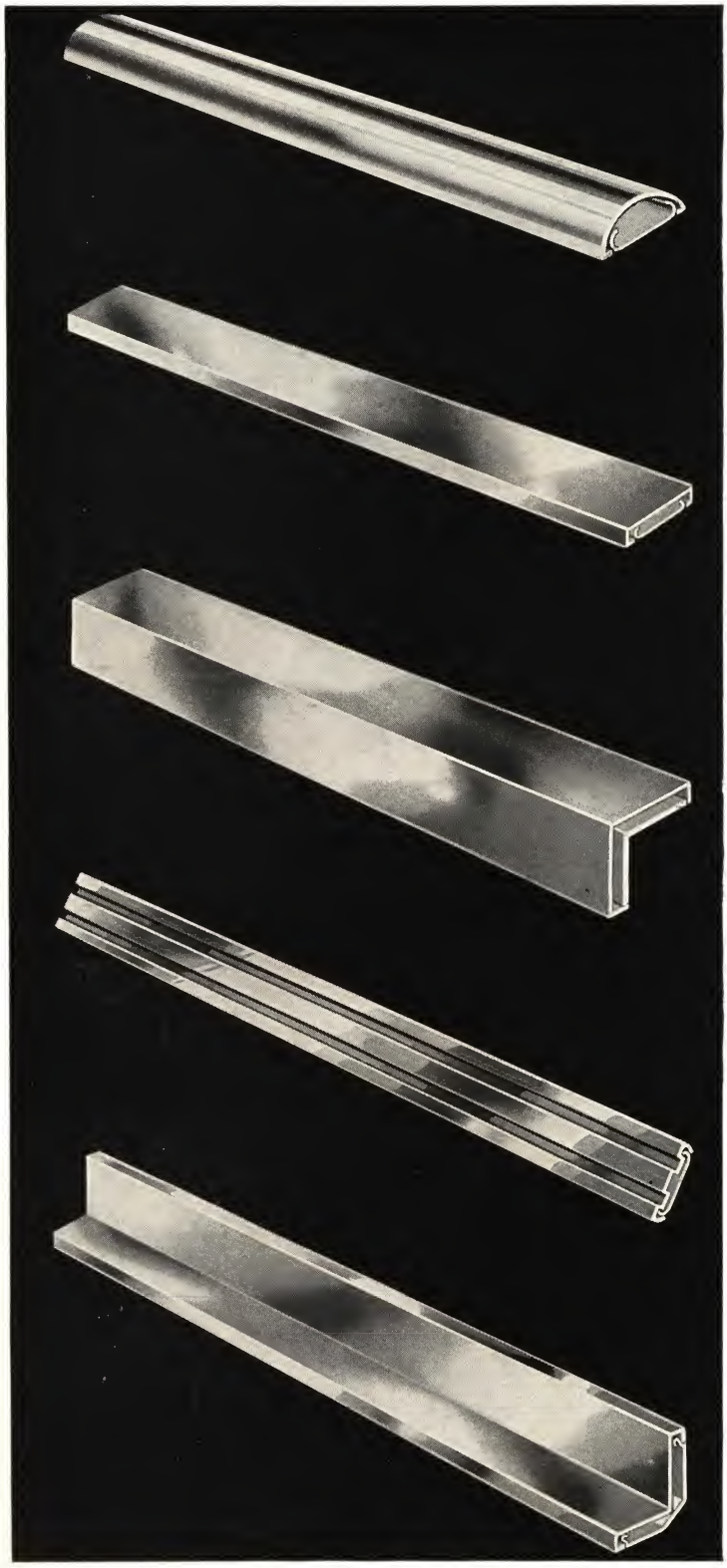
Furnished in aluminum with Alumilite Finish, Satin Finish Bronze or Stainless Steel.







19/6



SNAP-ON MOULDINGS

In tune with the trend of modern design, Kawneer Snap-On Mouldings offer unusual possibilities for distinctive and practical trim. The attractive appearance of these Mouldings is further improved by the Snap-On feature which conceals all nails or screws and presents straight, unbroken lines that are so effective in modern decoration. Kawneer Snap-On Mouldings are available in either aluminum, bronze or stainless steel—with galvanized steel core. The illustrations shown at the left are only a few of the most popular. Full size details shown below.



No. 7125



No. 7022



No. 7063



No. 7107



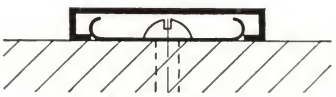
No. 7093



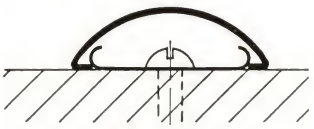
No. 7108



No. 7095



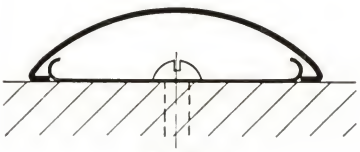
No. 7109



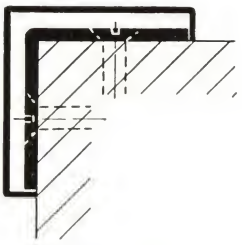
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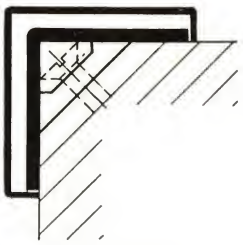
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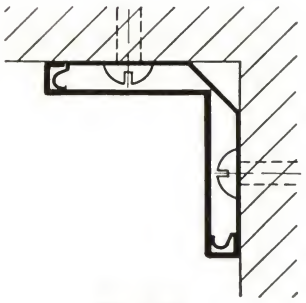
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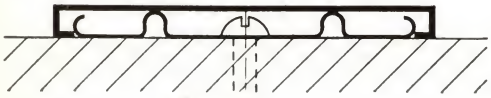
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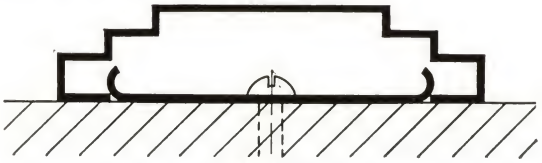
No. 7105-A



No. 7103



No. 7101



No. 3710

RESILIENT EXTRUDED STORE FRONT CONSTRUCTION

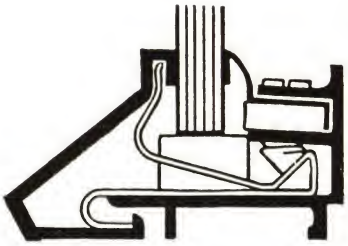
ALUMINUM WITH ALUMILITE FINISH

BRONZE WITH POLISHED, SATIN OR STATUARY FINISH



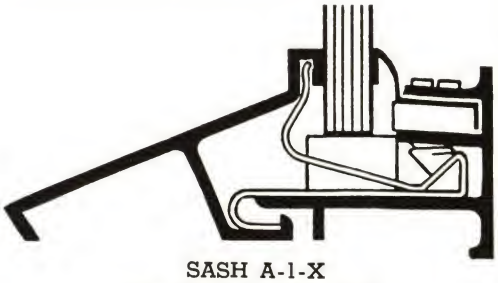
SASH A-1-K
Use Sills A-5-Z, A-5, A-50

FULL SIZE



SASH A-1-Y
Use Sills A-5-Z, A-5, A-50

PATENTED AND PATENTS PENDING



SASH A-1-X
Use Sills A-5-Z, A-5, A-50

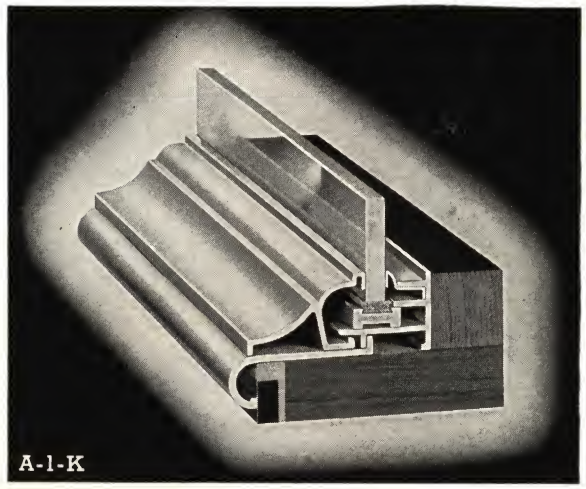
The famous Kawneer RESILIENT Extruded Store Front Construction is now available in either aluminum with the Alumilite Finish or architectural Bronze—with a choice of attractive face pieces. Note that variety and richness are achieved with sash that are simple and unobtrusive—honestly designed to hold and protect the plate glass and to frame the display window.

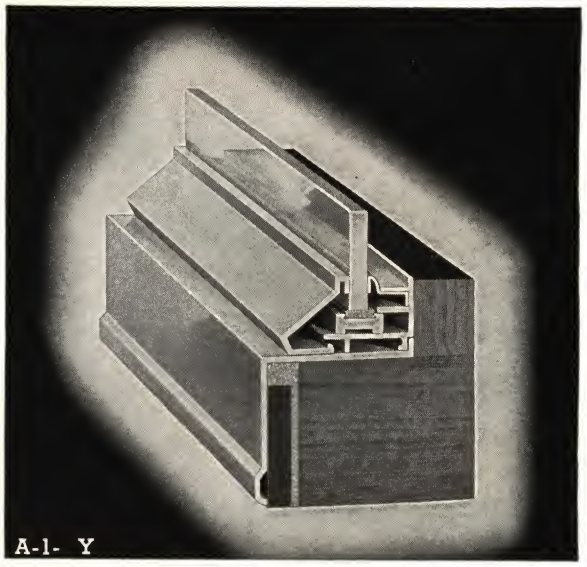
For those who prefer the heavy extruded construction, these RESILIENT Extruded Sash provide truly safe and dependable glass setting. Although extruded shapes are, by their very nature, rigid and unyielding, the introduction of fully resilient Spring Mechanism at front and continuous Spring at back, creates an element of flexibility which prevents glass breakage.

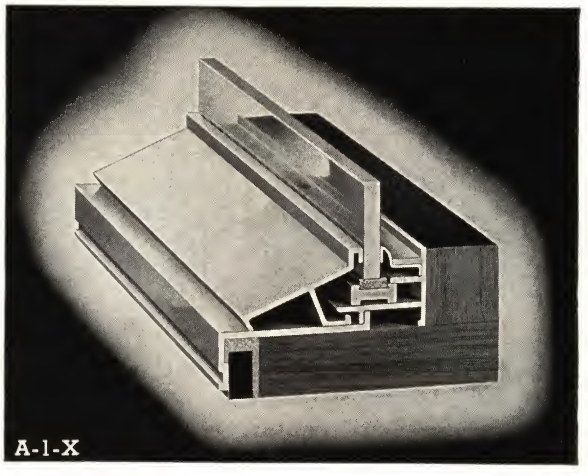
This resiliency allows for the inevitable movement of plate glass and framing, yet maintains a firm, secure grip at all times — equally distributed along the surface and equally effective on glass varying in thickness from 3/16" to 5/16". No looseness. No binding. No rigidity.

Sash can be mitered perfectly, but corner caps are furnished. Drainage and ventilation holes are made in sash only when specified. Sash is self-supporting.

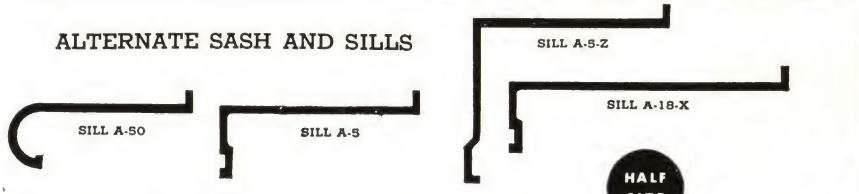
The complete line of Kawneer Extruded Store Front Construction is harmoniously designed in simple, striking lines, and includes attractive shapes for every store front purpose. An ideal construction to use where richness, lasting beauty and dependable glass protection are desired.







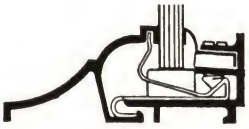
ALTERNATE SASH AND SILLS



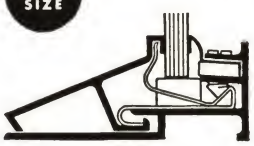
HALF SIZE



SASH A-1-BK



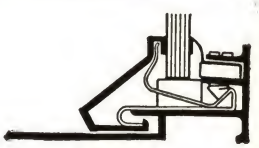
SASH A-1-AK
USE SILLS
A-18-X



SASH A-1-BX



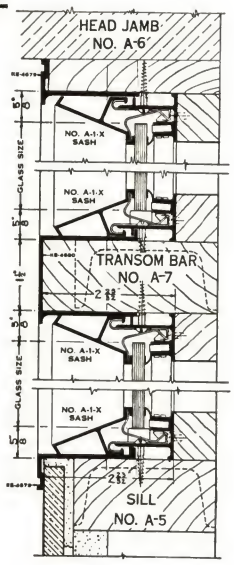
SASH A-1-AX
USE SILLS
A-18-X

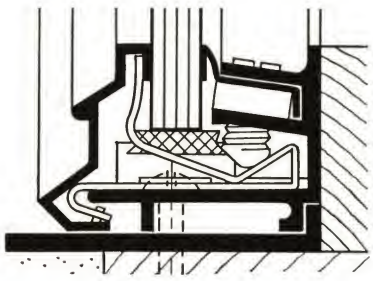


SASH A-1-BY

19
6

RESILIENT EXTRUDED STORE FRONT CONSTRUCTION

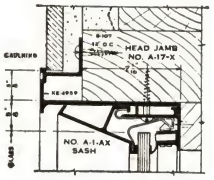




SASH No. A-1-8
Use Sills A-5, A-5-Z, and A-50

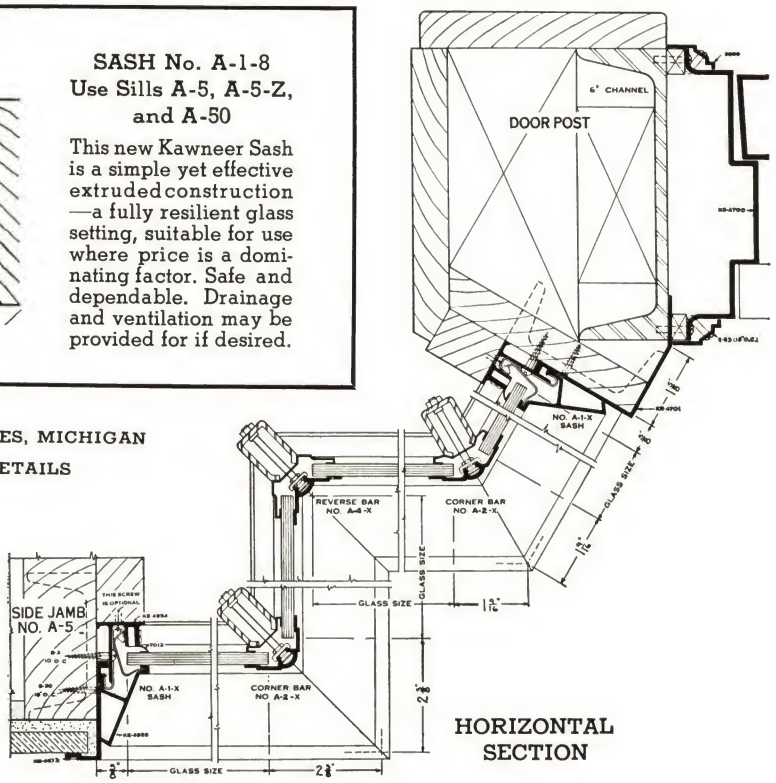
This new Kawneer Sash is a simple yet effective extruded construction—a fully resilient glass setting, suitable for use where price is a dominating factor. Safe and dependable. Drainage and ventilation may be provided for if desired.

WRITE THE KAWNEER COMPANY, NILES, MICHIGAN FOR FURTHER DATA AND FULL SIZE DETAILS



QUARTER SIZE

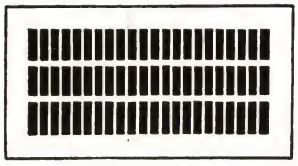
VERTICAL SECTION



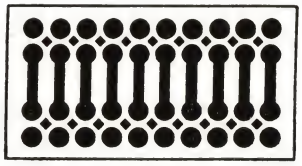
HORIZONTAL SECTION

GRILLES

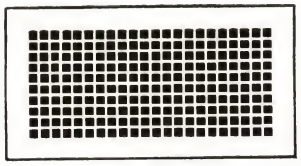
Kawneer Grilles are furnished in .050 and .109 gauge metal, sharply cut from bronze and aluminum; also in stainless steel—.050 gauge only. Maximum size, 114 x 24 inches.



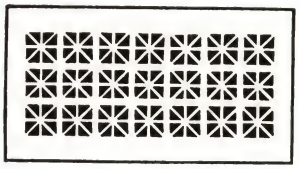
TYPE 1-G
Rectangular Interstices. Stock sizes—11″ x 5″, 18″ x 9″, 24″ x 10″



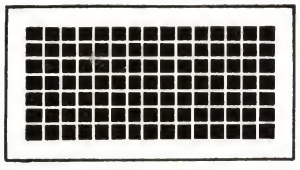
TYPE 4-G
Ball and Slot Interstices. Stock sizes—11″ x 5″, 18″ x 9″, 24″ x 10″



TYPE 2-G
Small Square Interstices. Stock sizes—11″ x 5″, 18″ x 9″, 24″ x 10″



TYPE 5-G
Clustered Union Jack. Stock sizes—11″ x 5″, 18″ x 9″, 24″ x 10″



TYPE 3-G
Large Square Interstices. Stock sizes—11″ x 5″, 18″ x 9″, 24″ x 10″



SPECIAL
Special designs cut to fit architect's requirements

THRESHOLDS



No. B COLD ROLLED. Bronze. 4″ x ½″



No. 4. EXTRUDED. Bronze. 2¼″ x ¼″

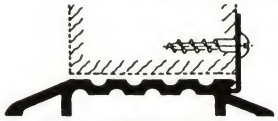
No. 5 EXTRUDED. Bronze. 3″ x 5/16″



No. 6 EXTRUDED. Bronze. 4″ x 5/16″



No. 7 EXTRUDED. Bronze. 5″ x 7/16″



No. 8 EXTRUDED. Bronze. Furnished with weathering angle. 1¾″ x ⅜″



No. 9 EXTRUDED. Bronze. Furnished with weathering angle. 2¼″ x ⅜″



No. 10 EXTRUDED. Aluminum only. 4″ x 5/16″



No. 11 EXTRUDED. Aluminum only. 5″ x 7/16″

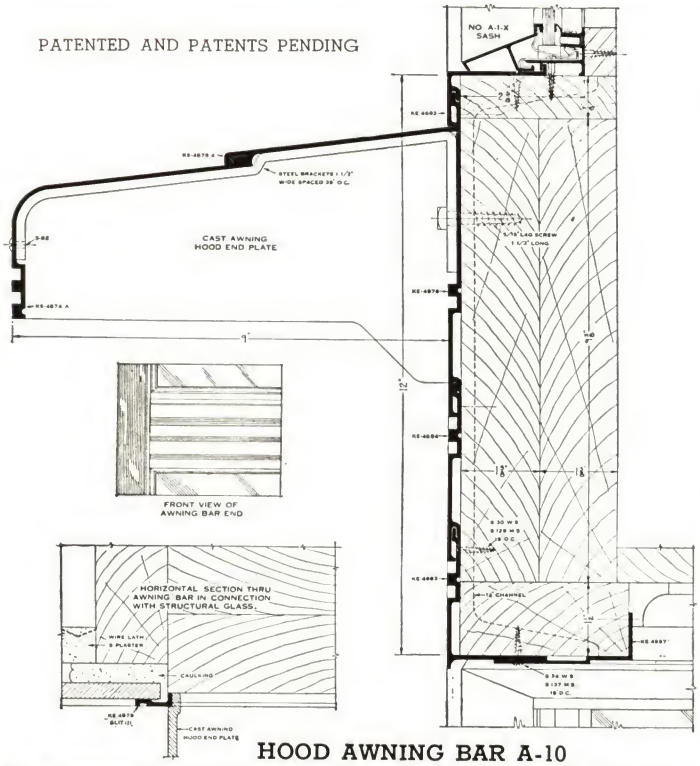


HALF SIZE

No. 12 EXTRUDED. Aluminum only. 4 5/32″ x 5/8″

EXTRUDED STORE FRONT CONSTRUCTION

PATENTED AND PATENTS PENDING

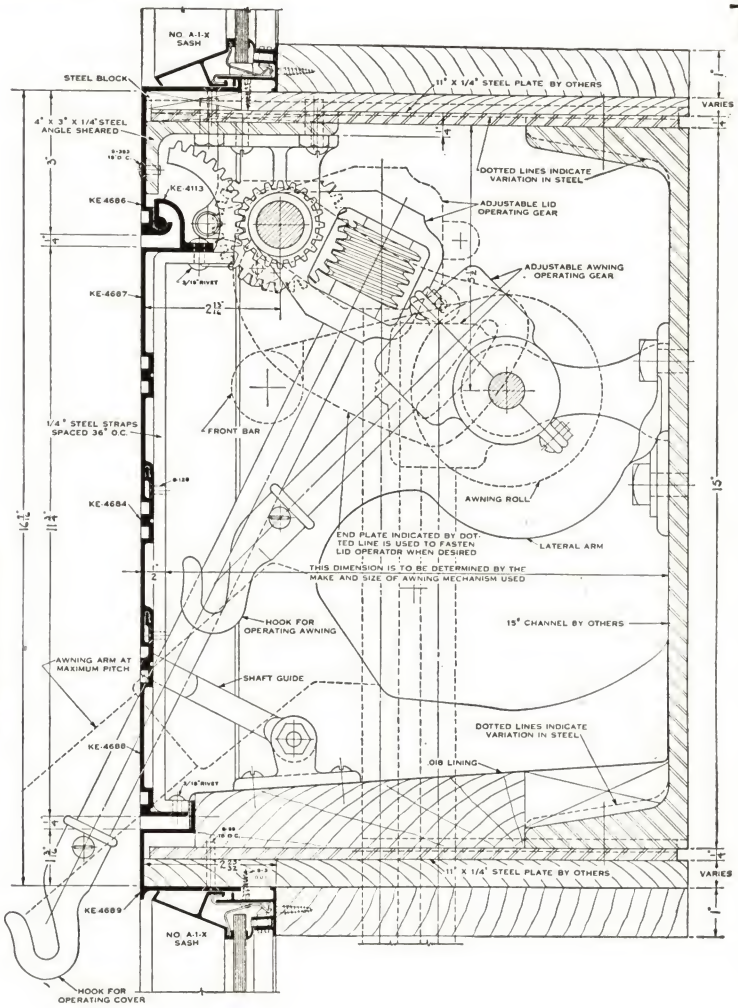


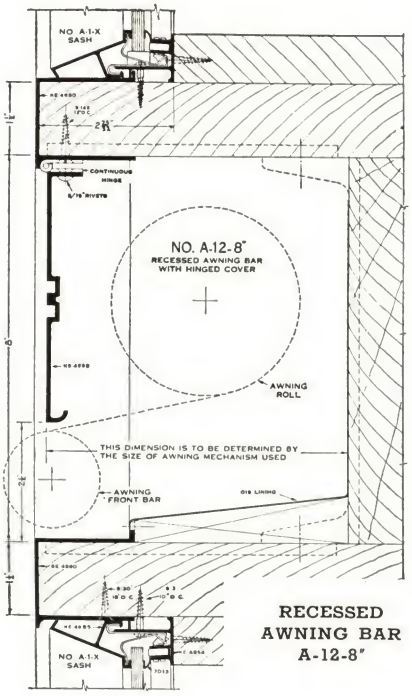
HOOD AWNING BAR A-10

An exceptionally graceful awning bar, which may be used with either lateral or outrigger arms. Steel channel shown by dotted lines is optional. (Furnished by others.)

CONCEALED AWNING BAR A-11-H

Awning roll is protected and completely hidden when not in use — a very desirable condition. For use with lateral arms ONLY. Awning mechanism by others. Pivoted type also available.





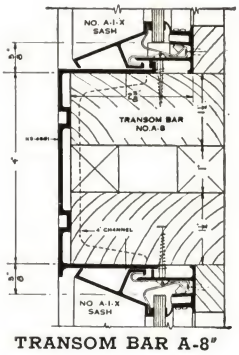
RECESSED AWNING BAR A-12-8"

AWNING BARS

These very attractive awning bars become a valuable decorative feature of the store front design. In addition to contributing interesting highlights and shadow lines, they completely or partially hide unsightly awning rolls when not in use.

RECESSED AWNING BAR A-12-8"

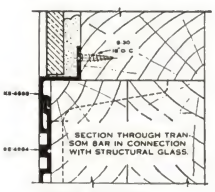
Shown at the left, protects awning roll in recessed box. For outrigger arms only. Available also with stationary cover and in 12" size.



TRANSOM BAR A-8"

TRANSOM BARS

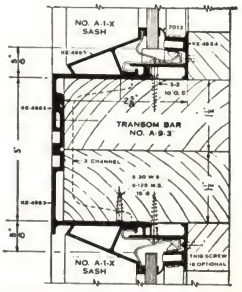
Transom Bar No. A-9-3", detailed at right, can be extended to 6", 9", and 12" by use of Extension Moulding KE-4684, shown below. 1½" Bar A-7 is shown with Vertical Section on Page 10. 4" Bar No. A-8, shown at right above, is similar in appearance to the A-9 series, but one shape only is used.



USE WITH STRUCTURAL GLASS



EXTENSION MOULDING KE-4684

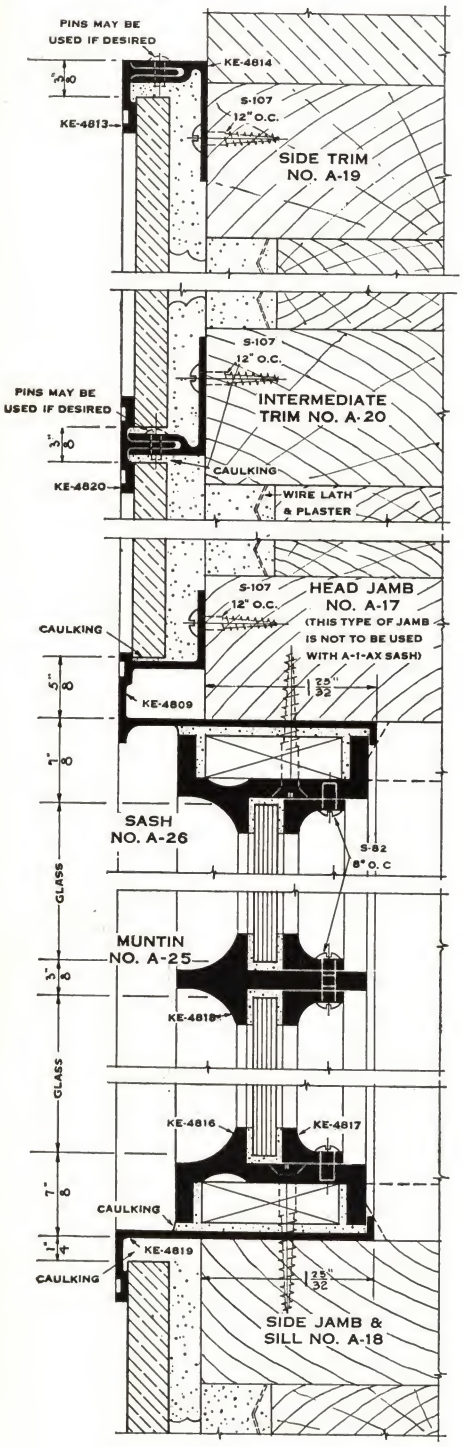


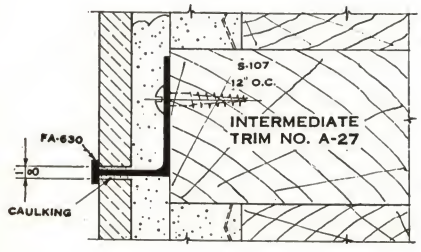
TRANSOM BAR A-9-3"

19/6

EXTRUDED STORE FRONT CONSTRUCTION

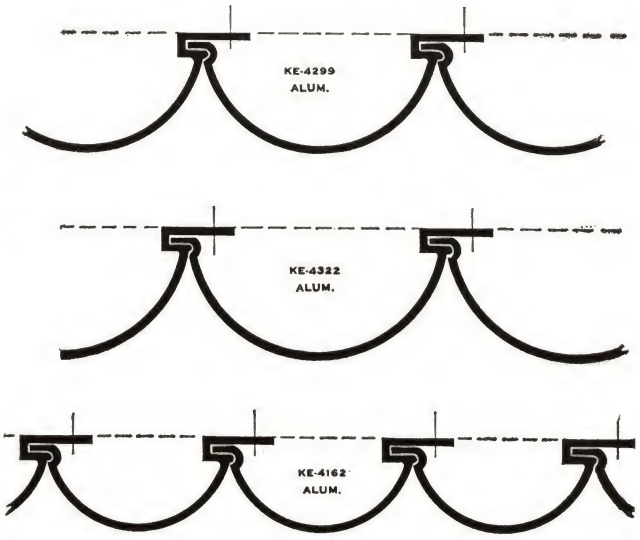
TRIM MOULDINGS

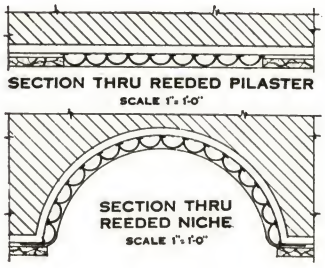




REED MOULDINGS

HALF SIZE



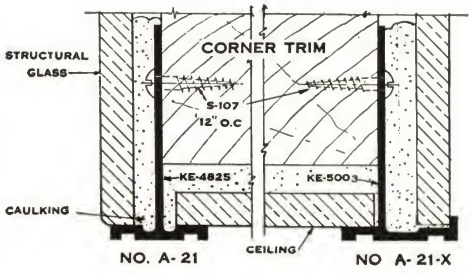




OTHER PRODUCTS

★ Kawneer manufactures other store front members including HINGED and PIVOTED VENTILATORS, CAST ENRICHMENTS, METAL PANELING, SHOW CASE DOORS, ADDITIONAL SILL, JAMB AND TRIM MOULDINGS for use with Porcelain Enamel Panels, Glass Block, Structural Glass, etc. Write for f. s. details.

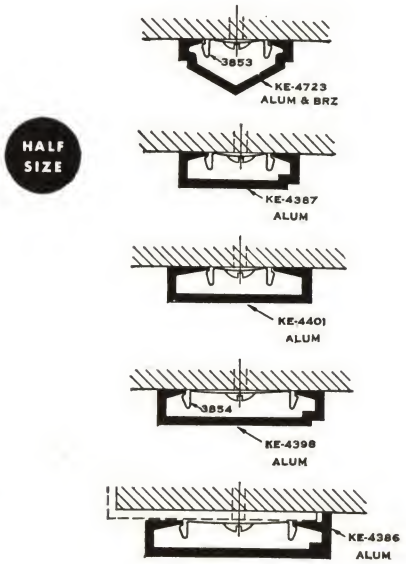
See separate catalog in Sweet's for complete information on SEALAIR (All-aluminum) WINDOWS, aluminum and bronze DOORS AND ENTRANCES, and ARCHITECTURAL METAL WORK.



SNAP-ON MOULDINGS

Kawneer Snap-On Mouldings are very valuable for a wide variety of uses—both interior and exterior. Extruded Snap-On Mouldings in aluminum only. (See also Page 8.)

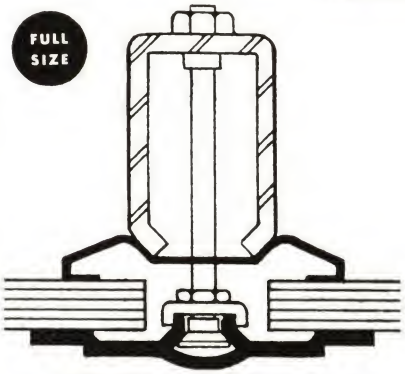
HALF SIZE



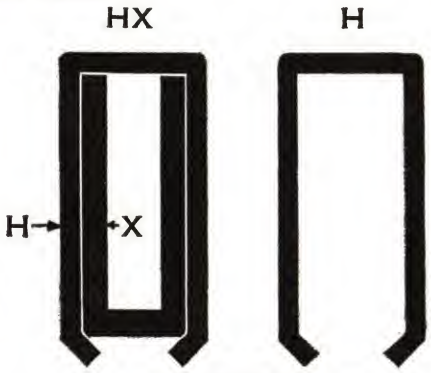
EXTRUDED STORE FRONT CONSTRUCTION

19/6

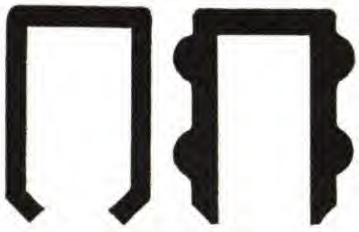
EXTRUDED BARS



DIVISION BAR No. A-3-X



STIFFENERS



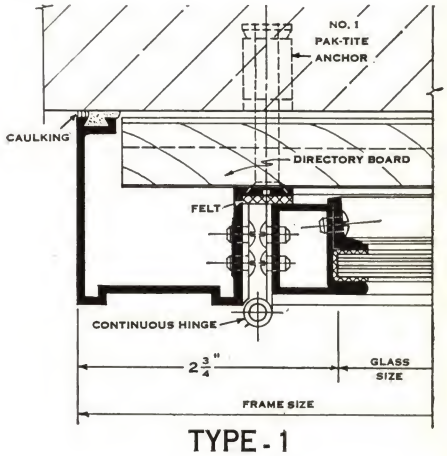
STIFFENERS

TABLE OF BARS							
IN ORDER TO FACILITATE THE SELECTION OF PROPER BARS, WE SUBMIT A TABLE WHICH WE BELEIVE WILL BE OF GREAT ASSISTANCE IN ORDERING. WE ARE ALSO SUBMITTING A FORMULA AS AN EXPLANATION OF THIS TABLE.							
STEEL				ALUMINUM AND BRONZE			
BAR	A	B	C	BAR	A	B	C
LIGHT	60	100	55	M	60	100	55
MEDIUM	78	130	70	H	72	130	70
HEAVY	96	140	72	EX	78	135	75
HEAVY-X	108	144	80	HX	84	140	80
FORMULA: WE RECOMMEND ALL OF OUR BARS AS LISTED. WHERE THE GLASS HEIGHT DOES NOT EXCEED THAT GIVEN IN COLUMN (A), AND THE COMBINED AREA OF THE 2 PLATES IS LESS THAN THE SQUARE FOOTAGE LISTED IN COLUMN (B), THE AREA OF 1 PLATE MUST NOT EXCEED THAT LISTED IN COLUMN (C).							

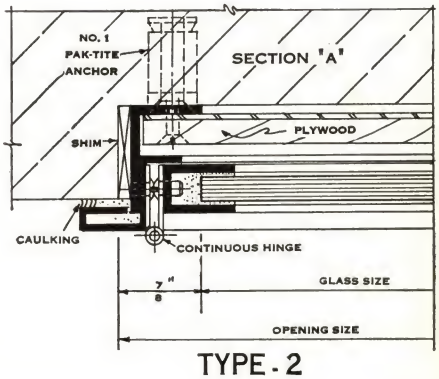
Extruded Bars are carried in all these angles: 90°, 110°, 120°, 135°, and 160°—both Corner and Reverse. However, they may be obtained to order at any angle. Details above show HX, Heavy Stiffener (H) with reinforcement (X)—included only when specified; H, Heavy Stiffener alone; M, Medium Stiffener; EX, Extra Heavy Stiffener.

POSTER FRAMES

Poster and Bulletin Board Frames are produced in aluminum or bronze, for use in theatre lobbies, and in connection with store fronts as unit display cases. Four types are made, two of which are shown here.



TYPE - 1



TYPE - 2



At left is a very attractive example of a Kawneer Door installation in a Kawneer Porcelain Enamel Store Front at Fort Dodge, Iowa.

RUSTLESS METAL DOORS

One of the most significant of recent store developments is the rapidly increasing use of Kawneer Rustless Metal Doors and Entrances as an integral part of the store front design. These doors are precisely and sturdily built—easy to maintain—will not rust, swell, shrink, warp, rot out or sag—and never need painting. They also add much to the appearance of the building. Refer to catalog on Kawneer Windows, Doors and Metal Work, also in SWEET'S—or write for complete new booklet.

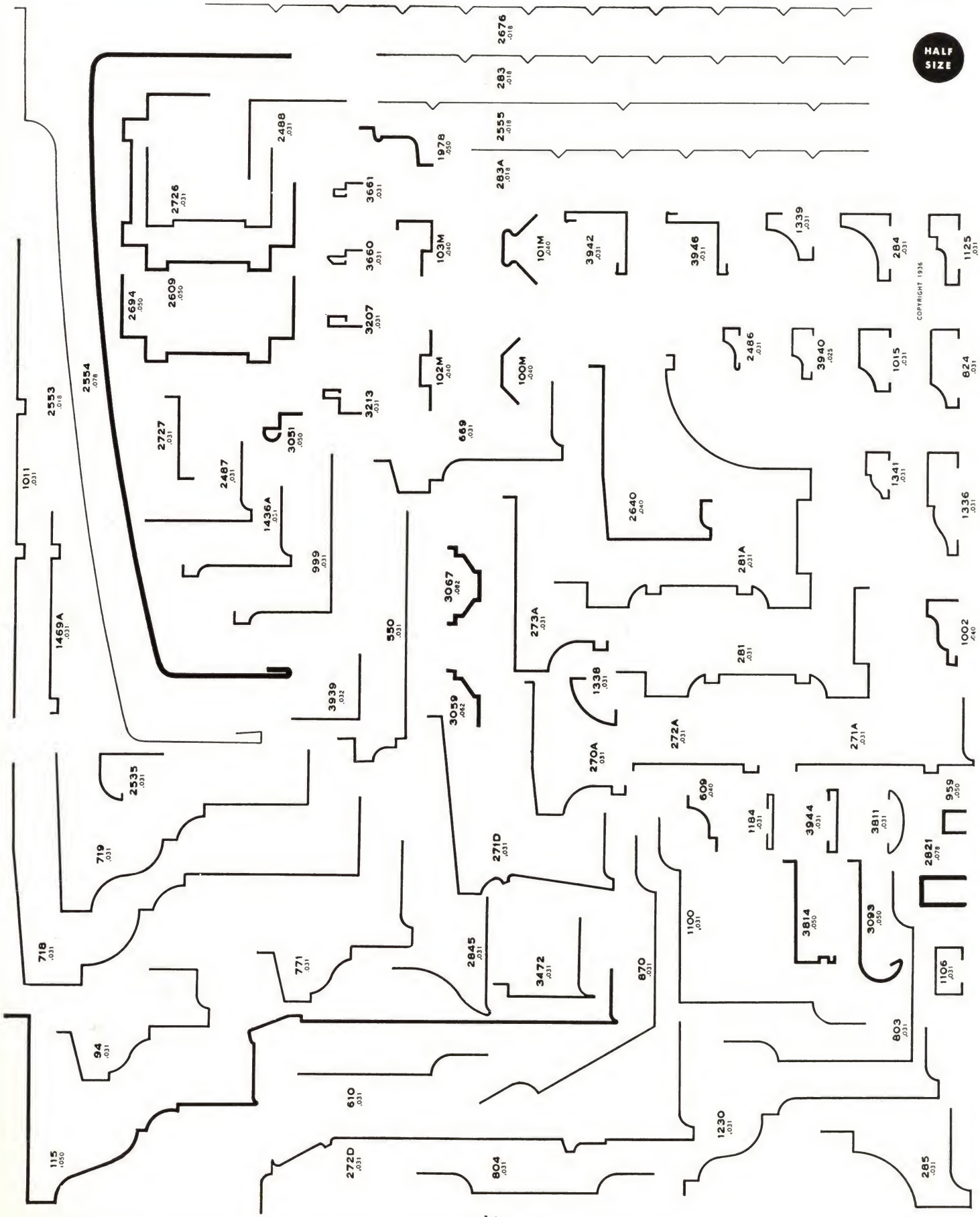


Illustration at right shows a smart, modern bronze door for a New York store. Ben Schlanger, Architect.

COLD ROLLED ALUMINUM

STOCK MOULDINGS

BRONZE, OR STAINLESS STEEL



SPECIAL SET-UP

NON-STOCK MOULDINGS

REQUIRED

HALF SIZE

COPYRIGHT 1936

Kawneer

STORE FRONTS

1939

LIBBEY·OWENS·FORD GLASS COMPANY

TOLEDO, OHIO

FOR COMPLETE DESCRIPTION AND DETAILS SEE FILE INDEX



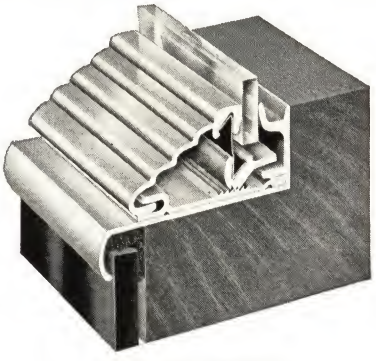
EXTRUDALITE

METAL STOREFRONT CONSTRUCTION

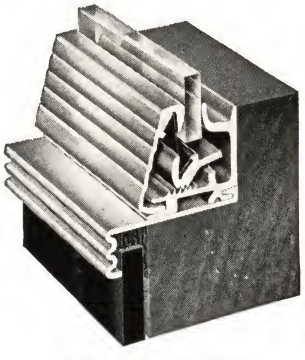
Featuring the new patented pressure-controlled, shock-absorbing Extrudalite Sash.

A complete new system of extruded metal members combining advantages hitherto unobtainable. From them may be constructed an entirely new type of show windows, doors, marquees and sign framing. Used for building facings from sidewalk to coping and for interior trim.

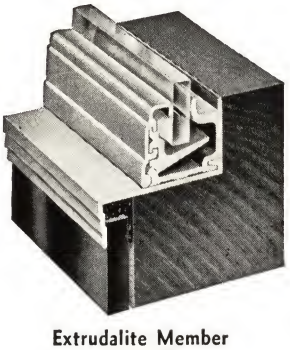
All pressure contacts between metal and glass are automatically controlled to a predetermined degree and constant pressure is maintained through spring cushioning.



Extrudalite Member
No. 500



Extrudalite Member
No. 300



Extrudalite Member
No. 150

Complete Storefront Ensemble—L·O·F Extrudalite, Vitrolite, Vitrolux and Plate Glass

NATIONAL STORE FRONTS

Manufacturers of Metal Store Front Construction and Metal Covered Doors

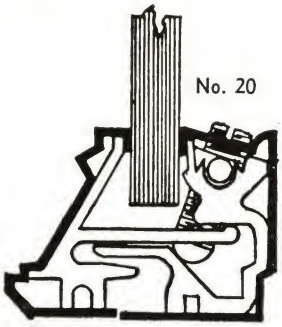
BOSTON, MASS. (Roxbury District)

The NATIONAL Store Front line, complete in every phase of store front construction and available in every practical metal in all finishes, offers architect and owner a most efficient combination in beauty of design, ease of installation, and versatile adaptability to every type of store front.

NATIONAL sash and bar sections for securing the plate glass have met with instant approval over the entire country for their marked improvement in being a fully resilient construction, entirely avoiding costly breakage of glass and eliminating use of non-metallic substances, such as rubber or felt, for making a construction resilient. Users of NATIONAL are assured of having a safe, economical, and beautiful store front for many years.

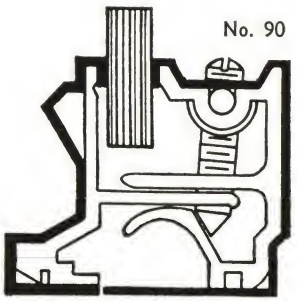
We are fully equipped to furnish all types of special curved and straight brake mouldings, fluted or reeded pilasters, ornamental bulkheads, valances, push bars, stainless steel doors and adjoining trim. Upon detailed specifications, we can furnish cast grilles in bronze and aluminum, crestings, and all similar ornamental work.





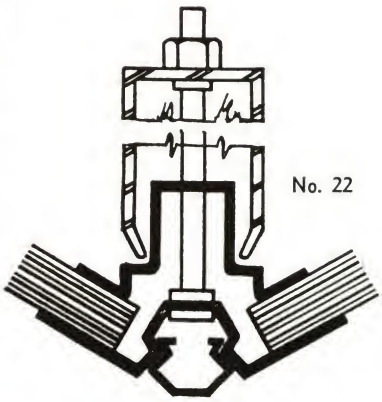
No. 20 Sash and No. 90 Sash

The remarkable clamping arrangement in our No. 20 Sash and No. 90 Sash is featured only in the NATIONAL line. Action is positive and its adjustment micrometic, by means of the unique swivel nut and inclined pressure plane. Also notice the distinctive profiles of the face mouldings with their simple lines and planes designed to absorb and reflect light refractions that make outstanding any store front on which NATIONAL is used.



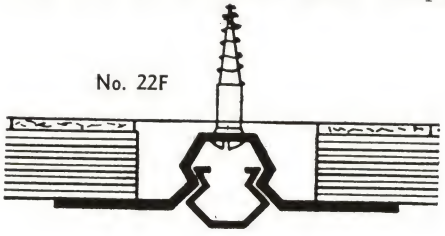
No. 22 Corner Bar

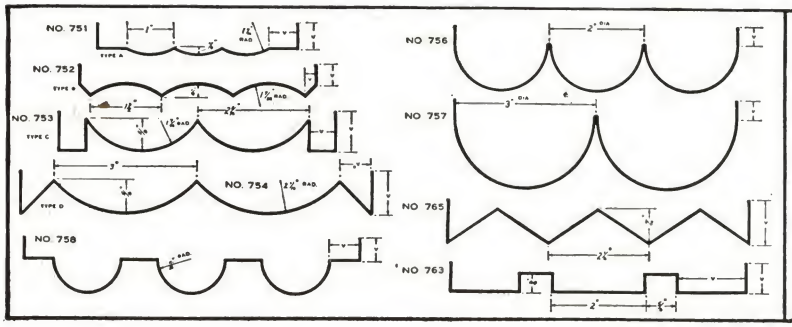
Our newly developed line of corner, division and reverse bars, available in all standard angles again shows versatility of NATIONAL products. The center filler piece snaps into place firmly and securely, and combinations of any two contrasting metals may be used to give the bar unique distinction, adding to beauty of the job.



No. 22F Joint Moulding

Using only the face of the bar (corner, reverse, or division) as a snap-on moulding, offers amazing possibilities in designing wall surfaces, both exterior and interior with any of the popular wall coverings, such as structural glass, composition board, etc. Moreover, the bar may be applied at the joints in a combination of two contrasting metals with no visible fastening.

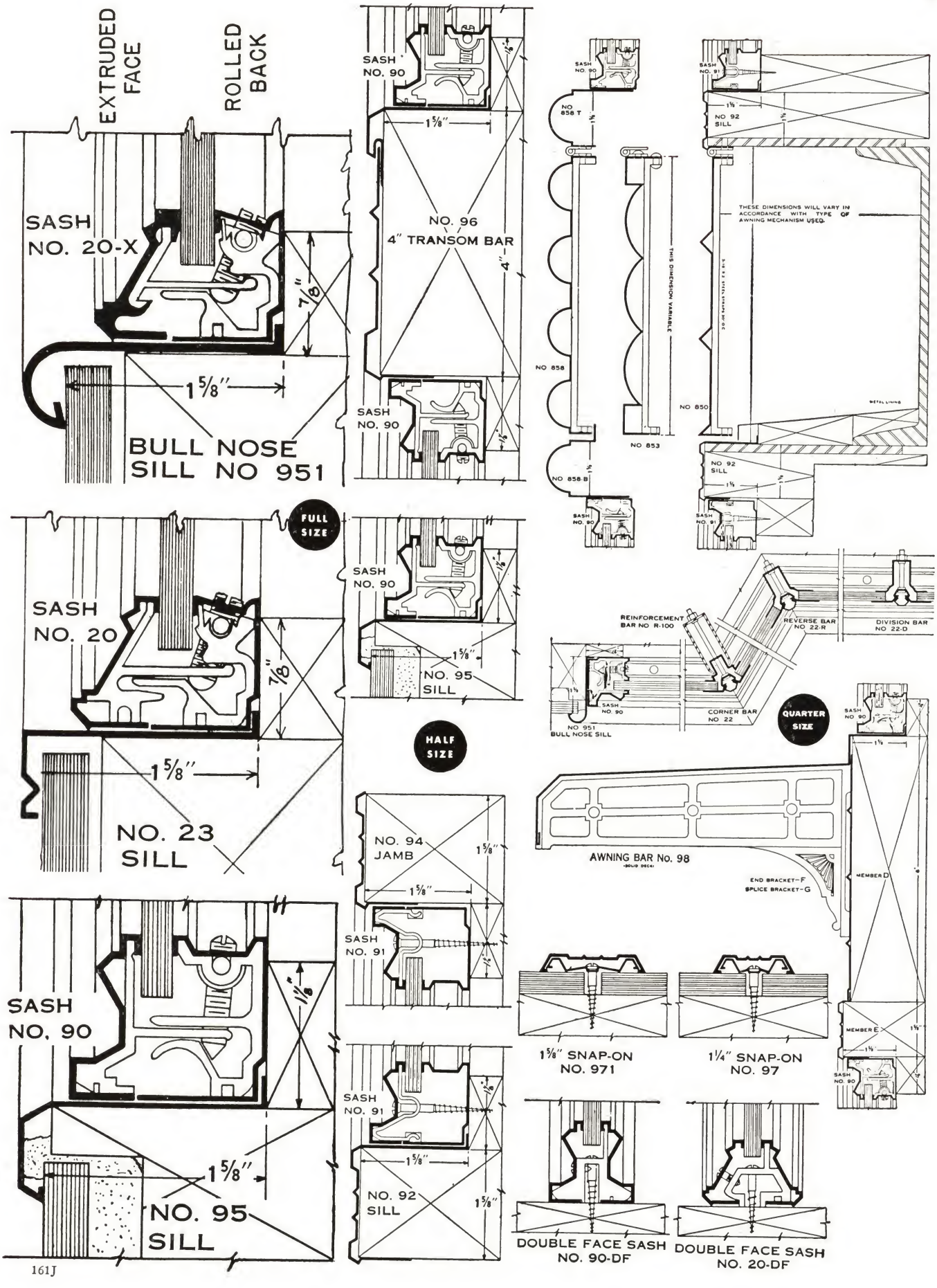




SPECIAL
BRAKE MOULDINGS
Quarter Size

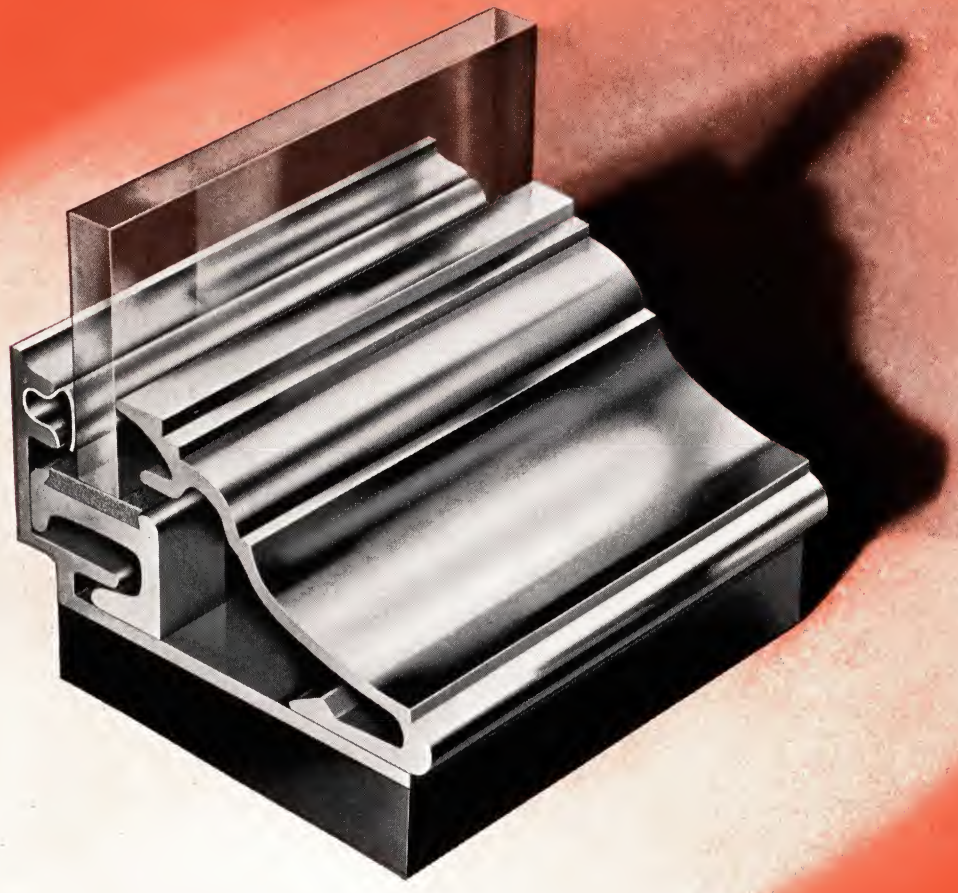
Write for Complete Information and Full Size Detail Sheets

NATIONAL
STORE FRONTS


EXTRUDED FACE
ROLLED BACK
SASH NO. 20-X
7/8"
1 5/8"
BULL NOSE SILL NO 951
SASH NO. 90
1 5/8"
NO. 96
4" TRANSOM BAR
4"
SASH NO. 90
SASH NO. 90
NO 858 T
NO 858
NO 858-B
THIS DIMENSION VARIABLE
NO 853
SASH NO. 90
SASH NO. 91
1 1/8
NO 92 SILL
THESE DIMENSIONS WILL VARY IN ACCORDANCE WITH TYPE OF AWNING MECHANISM USED.
NO 850
METAL LINING
NO 92 SILL
1 1/4
SASH NO. 91
FULL SIZE
SASH NO. 20
7/8"
1 5/8"
NO. 23 SILL
SASH NO. 90
1 5/8"
NO. 95 SILL
HALF SIZE
REINFORCEMENT BAR NO R-100
REVERSE BAR NO 22-R
DIVISION BAR NO 22-D
SASH NO. 90
CORNER BAR NO 22
NO 951 BULL NOSE SILL
QUARTER SIZE
SASH NO. 90
1 1/4
AWNING BAR No. 98
END BRACKET-F
SPLICE BRACKET-G
MEMBER D
MEMBER E
1 1/4
SASH NO. 90
NO. 94 JAMB
1 5/8"
1 5/8"
SASH NO. 91
1 1/4
1 5/8" SNAP-ON NO. 971
1 1/4" SNAP-ON NO. 97
SASH NO. 90
1 1/8
1 5/8"
NO. 95 SILL
SASH NO. 91
1 5/8"
NO. 92 SILL
1 5/8"
DOUBLE FACE SASH NO. 90-DF
DOUBLE FACE SASH NO. 20-DF

MEMORANDA

PITTCO
STORE FRONT METAL



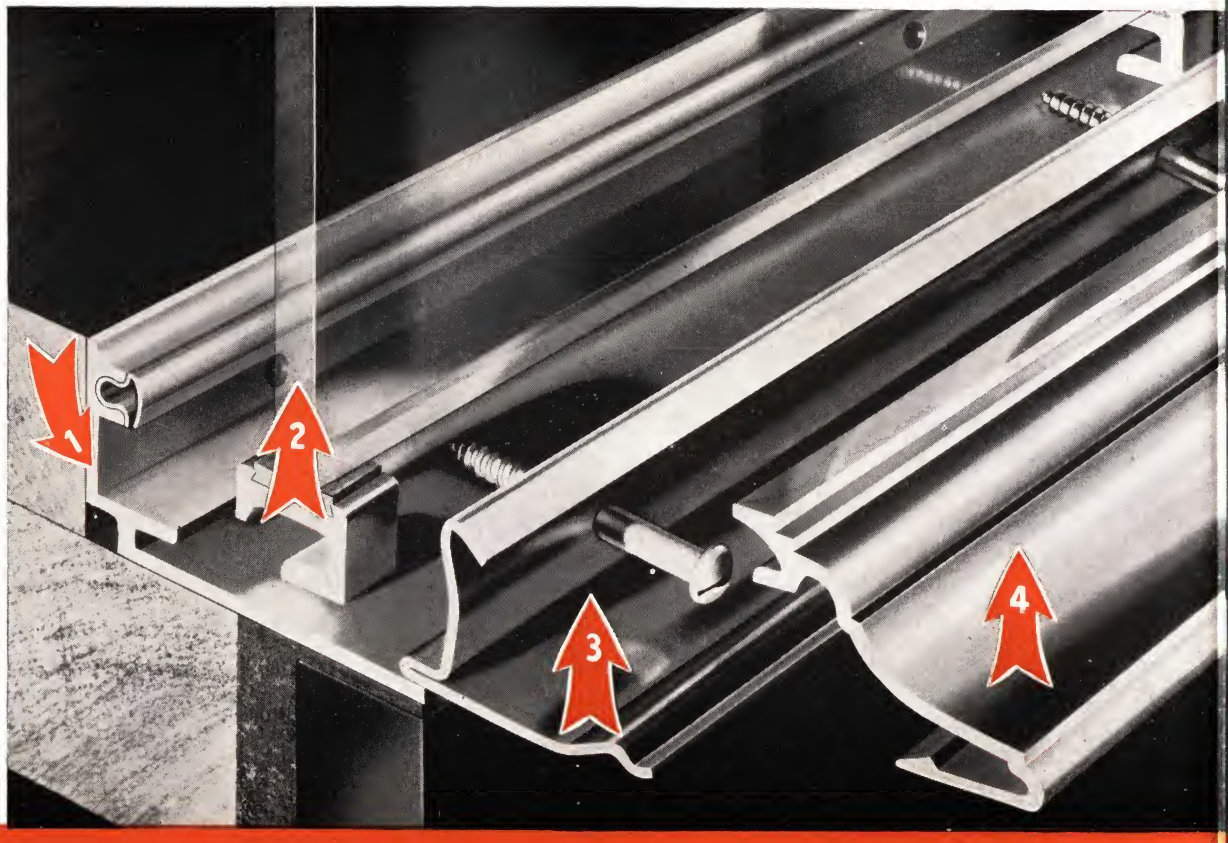
Paint • PITTSBURGH • Glass
PLATE GLASS COMPANY

PITTCO STORE FRONT METAL

Modern merchandising methods have made the effective display of goods in the retail store window a veritable science . . . with its object the injection of maximum invitation and sales appeal into the modern store front. Of prime importance in designing store fronts of real personality is the metal store front construction. And therefore, as merchandising methods have become more and more aggressive, store front metal construction has grown in importance accordingly. No longer are architects, contractors, merchants satisfied with a metal construction which merely holds the glass . . . their need is for a metal construction which will be beautiful, practical and versatile enough to help them solve their display problems in a modern manner. It was to meet this definite need that PITTSBURGH PLATE GLASS COMPANY, after long research and experimentation, developed Pittco Store Front Metal. It was designed deliberately and all at one time, as a complete line of units to meet every demand which today's store front would make upon a metal construction. It has gained a wide use among leading architects, builders and property owners . . . and has proved eminently satisfactory from every standpoint in all its installations. Here, at last, is store front metal construction truly worthy of use in modern store fronts.

For information on other Pittco Store Front Products, see Pittsburgh Corning Corporation's sections in Sweet's on Carrara Structural Glass, PC Glass Blocks, and PC Architectural Glass; see also Pittsburgh Plate Glass Company's General Glass and Pittsburgh Paint catalogs in Sweet's.

SASH SET FROM OUTSIDE



1

First the Inner Member is set; then the setting block (which is actually 2½" long) is pressed into its groove and . . .

2

The glass is lifted into place.

3

Then the glass holding member is installed, and finally . . .

4

The face member snaps on to finish the assembly.

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PLATE GLASS COMPANY



TRANSOM BAR No. 56

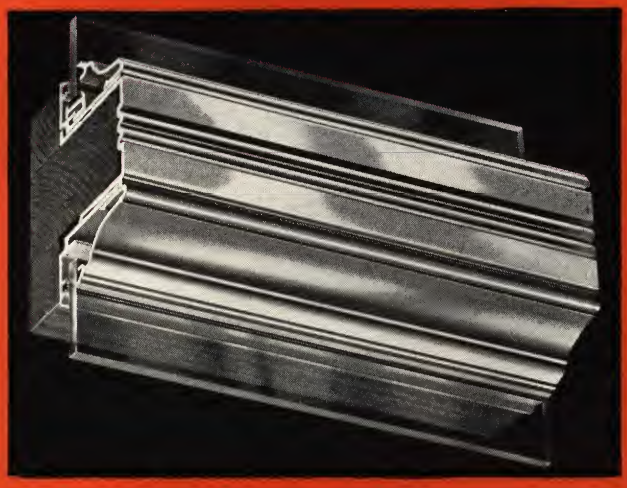


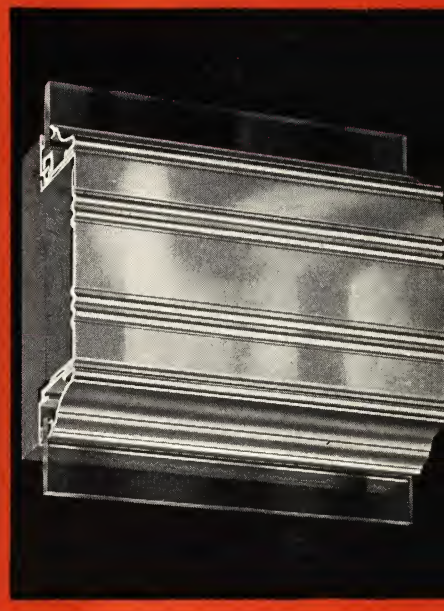
MOULDINGS



AWNING BAR No. 60







ABOVE: TRANSOM BAR No. PX117
AT LEFT: VERTICAL BARS
AT RIGHT: TRANSOM BAR No. 44

ARCHITECTURAL ADVANTAGES OF PITTCO
STORE FRONT METAL

BEAUTY . . . Pittco Store Front Metal was designed as a complete line of metal members . . . all at one time. As a result, it has a pleasing unity of design . . . a harmonious relationship between members. It has a style all its own, different, distinctive and refreshing. It is primarily a quality construction, being fabricated from only the choicest materials and finishes.

MODERN FINISHES . . . Pittco Metal is furnished in clear, lustrous Alumilite . . . and in Architectural Bronze, Satin or Polished finish. *Caution*: The "Alumilite" finish will be attacked when subjected for any length of time to wet mortar, plaster, whiting, cleaning acids or similar materials. If these materials are immediately removed with a wet sponge or cloth, no attack may occur. It is recommended, however, that the finish be protected during building operations by the use of masking tape or suitable wax to avoid any possibility of disfiguring stains.

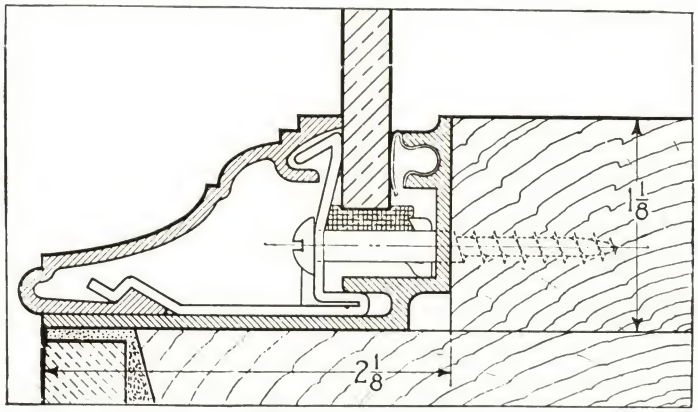
ACCURACY and STRENGTH . . . To insure clear-cut moldings of ample strength and a high standard of workmanship, the extruded process is used in forming exposed Pittco members.

PRACTICAL ADVANTAGES . . . Pittco is as practical as it is beautiful. It is easy to install, all setting operations being carried on outside the window. Its special Cushion-Grip on glass gives the glass it holds greater protection against strains and jars. Rear members of sash and plate glass may be set, the window made ready for display and the face of the building washed down, before outer members of sash are applied. Pittco Sash may be provided with means for drainage when specified. Pittco bars, comprised of only a few mouldings, are readily adjustable to all angles.

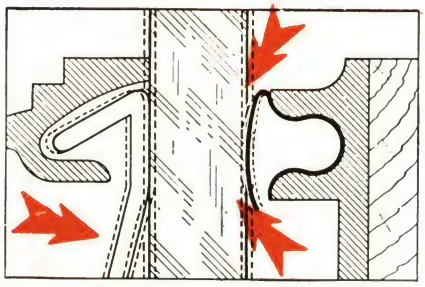
Paint. PITTSBURGH PLATE GLASS COMPANY Glass

EIGHT

DISTINCTIVE FEATURES OF PITTCO STORE FRONT SASH

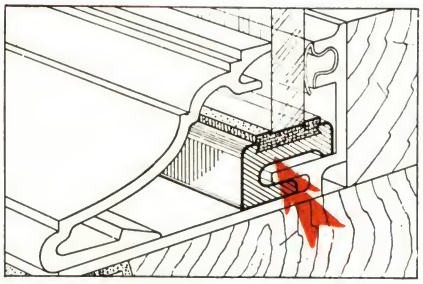


Full size cross-section



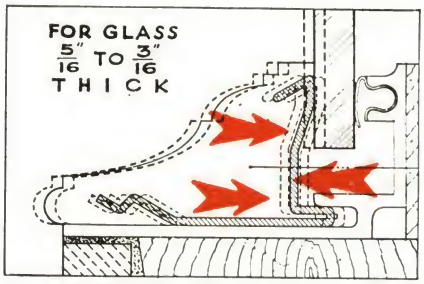
1. CUSHION GRIP ON GLASS

The metal surfaces which contact the sides of glass act as a yielding cushion, absorbing dangerous shocks and jars.



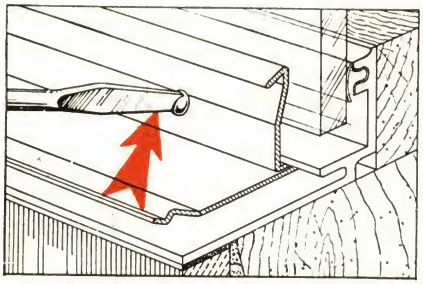
2. FIXED SUPPORTING BLOCK

Non-ferrous metal supporting blocks are firmly wedged in groove, thus preventing tipping, rocking or sliding out of line during setting of glass.



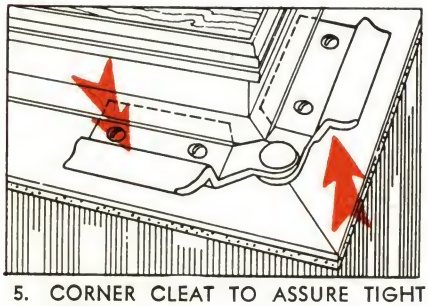
3. ADJUSTABLE TO VARIOUS GLASS THICKNESSES

Glass-holding units and face members are self-adjusting to various glass thicknesses without tilting inward or outward.



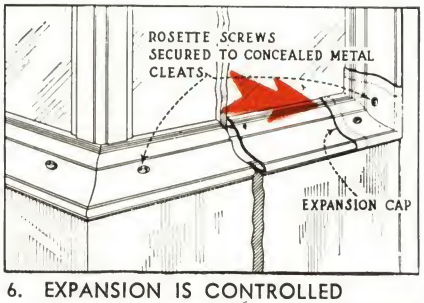
4. INSTALLATION OPERATIONS ALL FROM OUTSIDE

Both glass and sash are set from outside by standard wood or machine screws. No special keys or tools required.



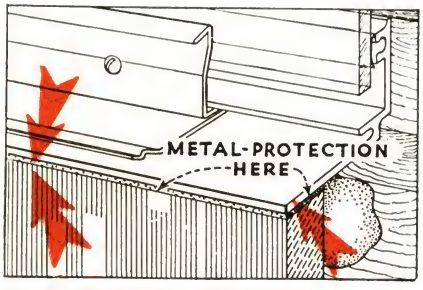
5. CORNER CLEAT TO ASSURE TIGHT MITRE

Heavy Metal Cleats are used at the corners to secure mitres against spreading due to expansion or contraction.



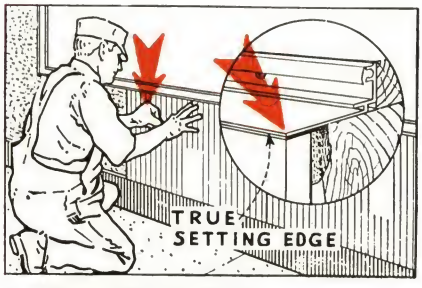
6. EXPANSION IS CONTROLLED

Expansion in long lengths of aluminum is controlled by combining expansion cap, cleats and rosette screws. See also 5.



7. PROTECTION FOR CARRARA

A sturdy, square-cut, continuous metal flange projects over edge of Carrara, shielding the area which is most vulnerable.



8. TRUE SETTING EDGE

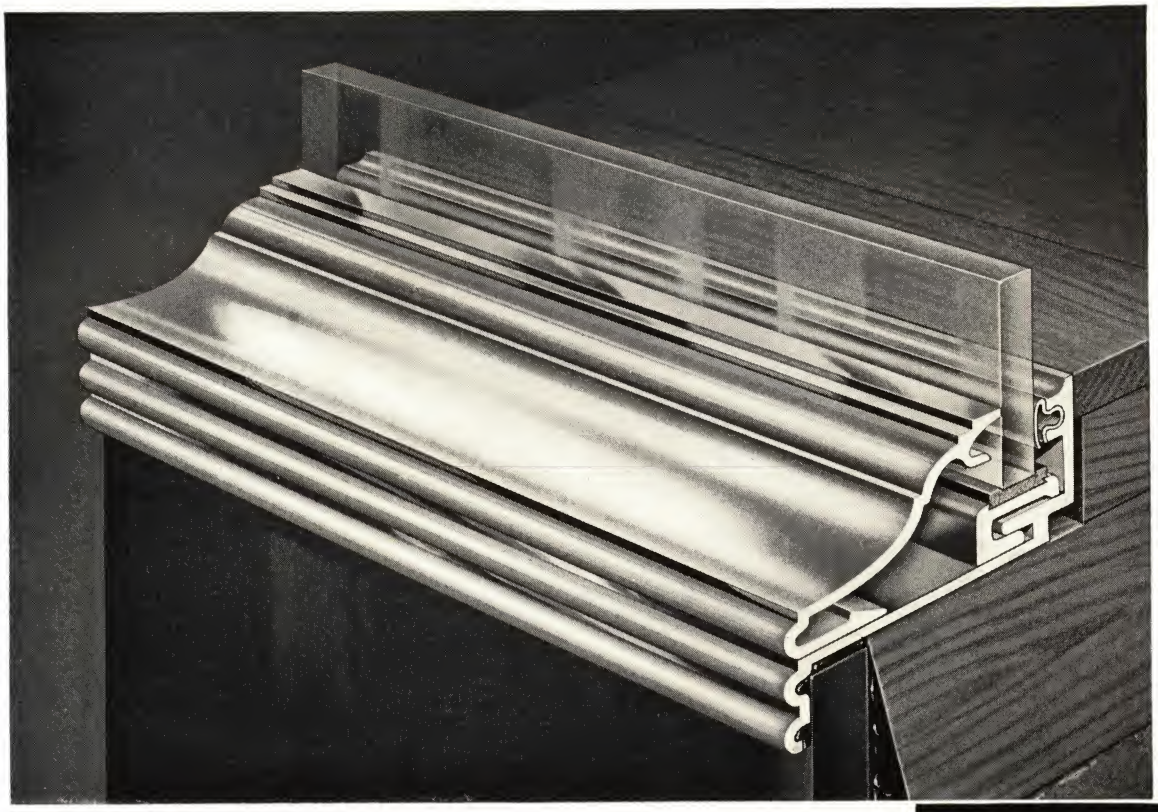
The outer edge of inner member serves as a true, unvarying line to which face of Carrara or similar materials are set.

PITTCO
STORE FRONT METAL

STANDARD PITTCO SHAPES

There is a Pittco shape for practically every architectural or decorative need which might arise in connection with store front work. The warehouses of the Pittsburgh Plate Glass Company carry complete stocks of many of these mouldings for prompt shipment, no matter where your job may be located. See back cover for list of branches and map.

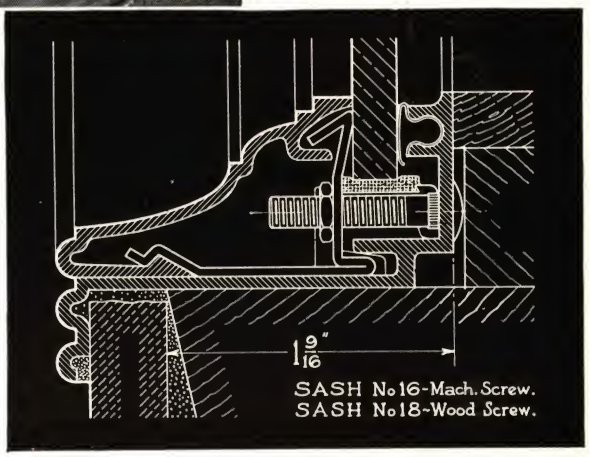
Paint. PITTSBURGH PLATE GLASS COMPANY Glass



At left and below are shown the new Pittco Sash No. 16 and 18. This new Sash is a valuable addition to the Pittco Metal line for two reasons: first, because the double bead on the face member, combined with the bead on the sash itself, forms a striking and effective frame for the display window. And second, because the manner in which the sash overlaps the Carrara insures even greater protection for the edges of the facing material.

PITTCO-CARRARA GLASS STORE FRONTS

Pittco Store Front Metal was designed for use with Carrara Structural Glass. (See features 7 and 8, page 4). When so employed, Pittco Metal enhances the richness and distinction of a store front's appearance, harmonizes in perfect fashion with the lustrous, polished surface of the glass facia, bulkheads, etc. The details on pages 7 to 10 of this catalog show various applications of Pittco Metal in connection with Carrara Structural Glass.



SERVICE STATION, PITTSBURGH, PA.



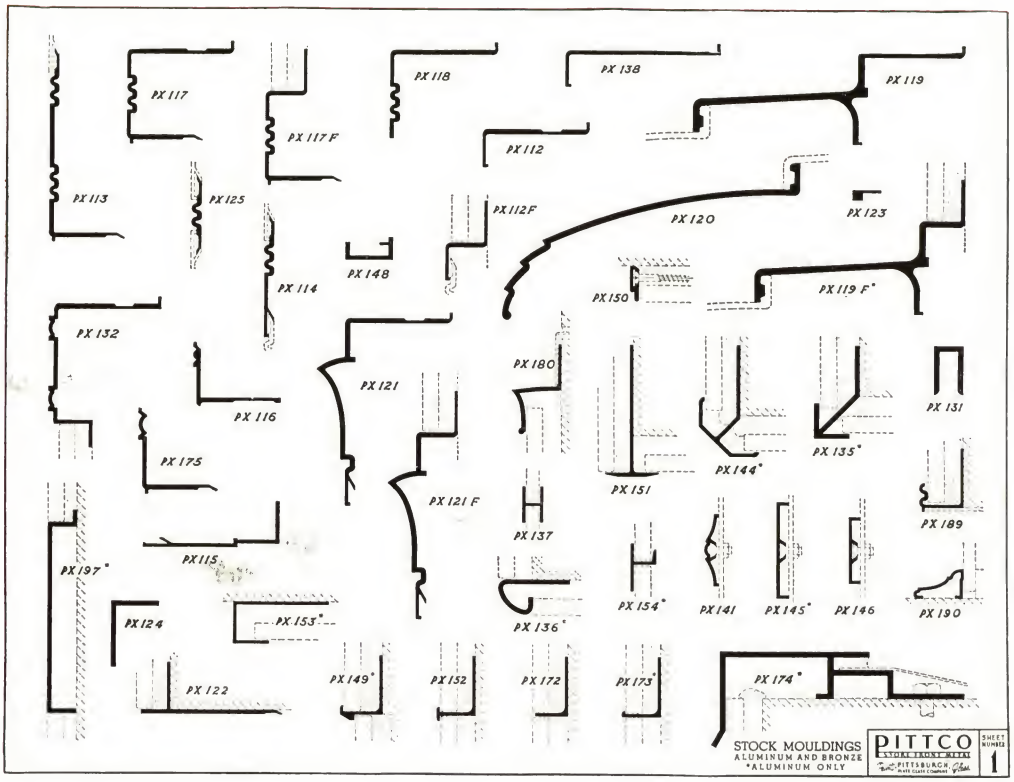
BAKERY, NEWARK, N. J.

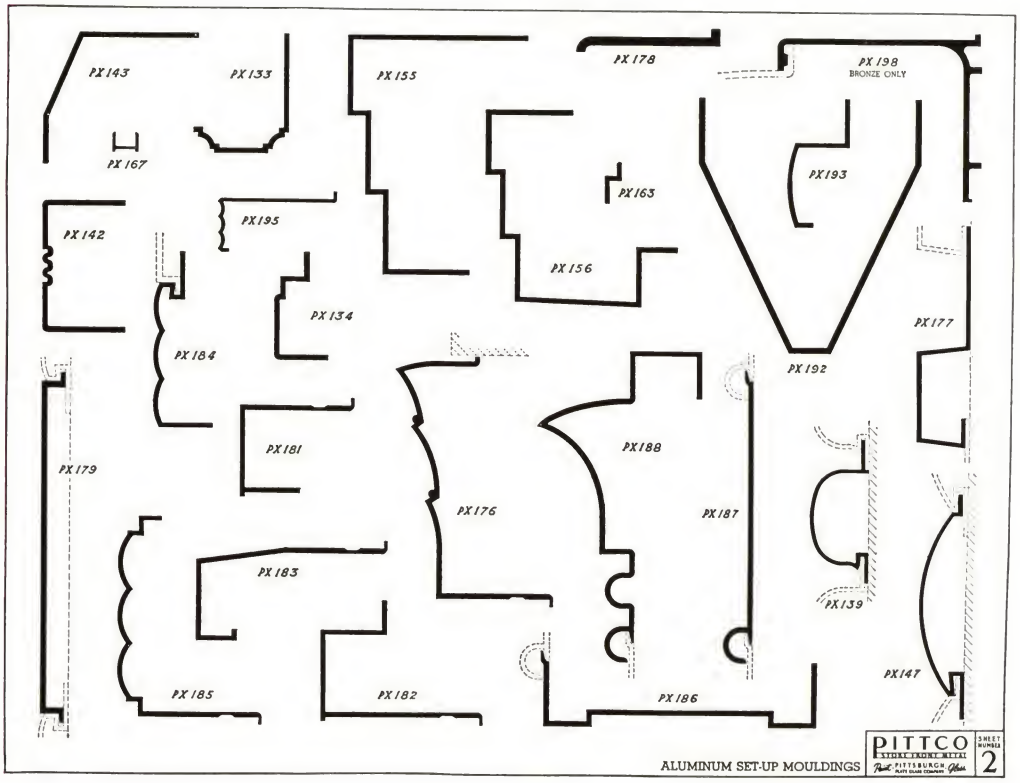


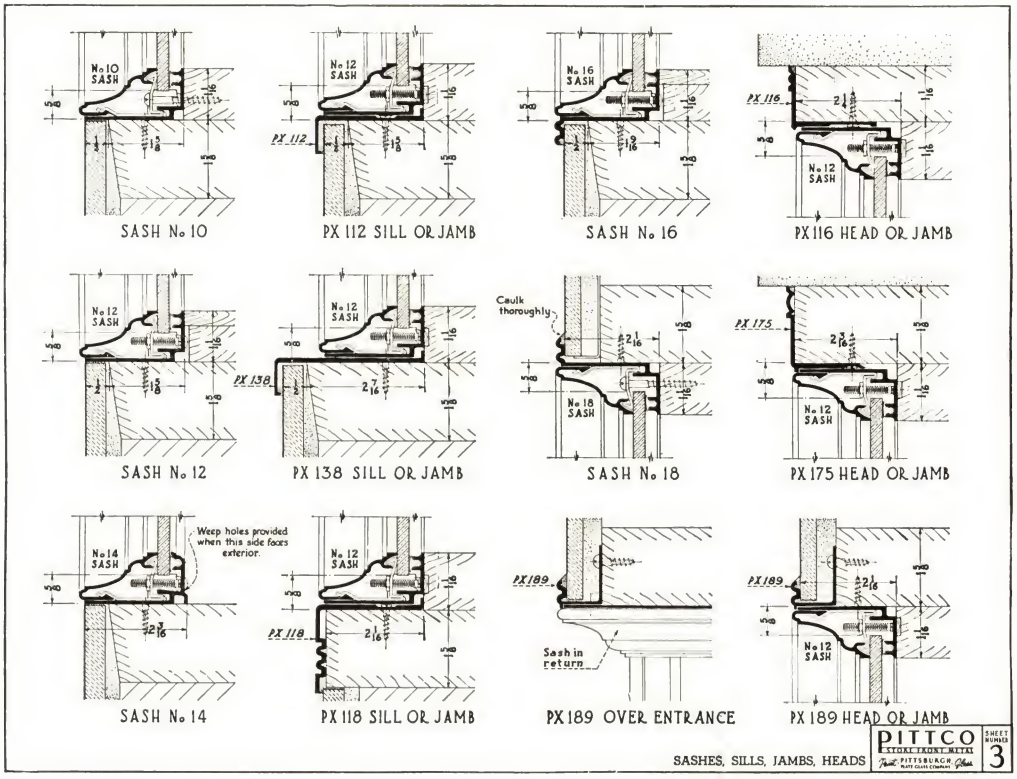
QUARTER SIZE DETAILS OF PITTCO STORE FRONT METAL MOULDINGS

PITTCO
STORE FRONT METAL

There is a Pittco shape for practically every architectural or decorative need which might arise in connection with store front work. The warehouses of the Pittsburgh Plate Glass Company carry complete stocks of many of these mouldings for prompt shipment, no matter where your job may be located. See back cover for list of warehouses and map.





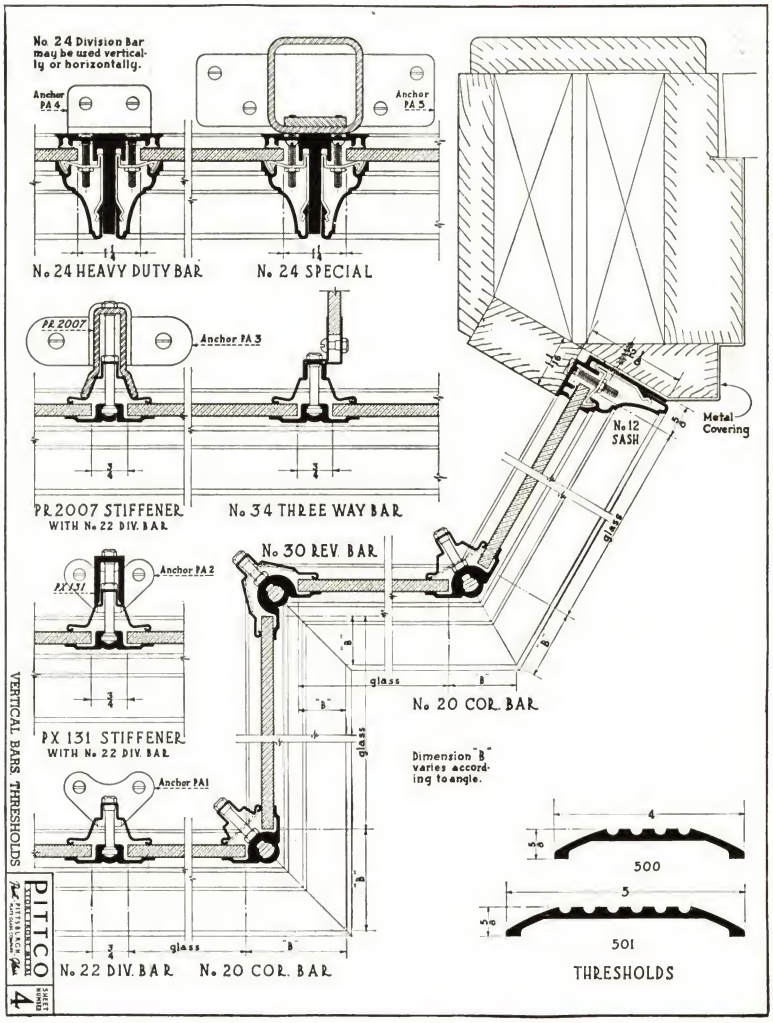


Typical cross-sections showing Sash, Sills, Jambs and Heads in connection with Carrara Structural Glass.

QUARTER SIZE DETAILS

PITTCO STORE FRONT METAL

QUARTER SIZE DETAILS OF PITTCO STORE FRONTS

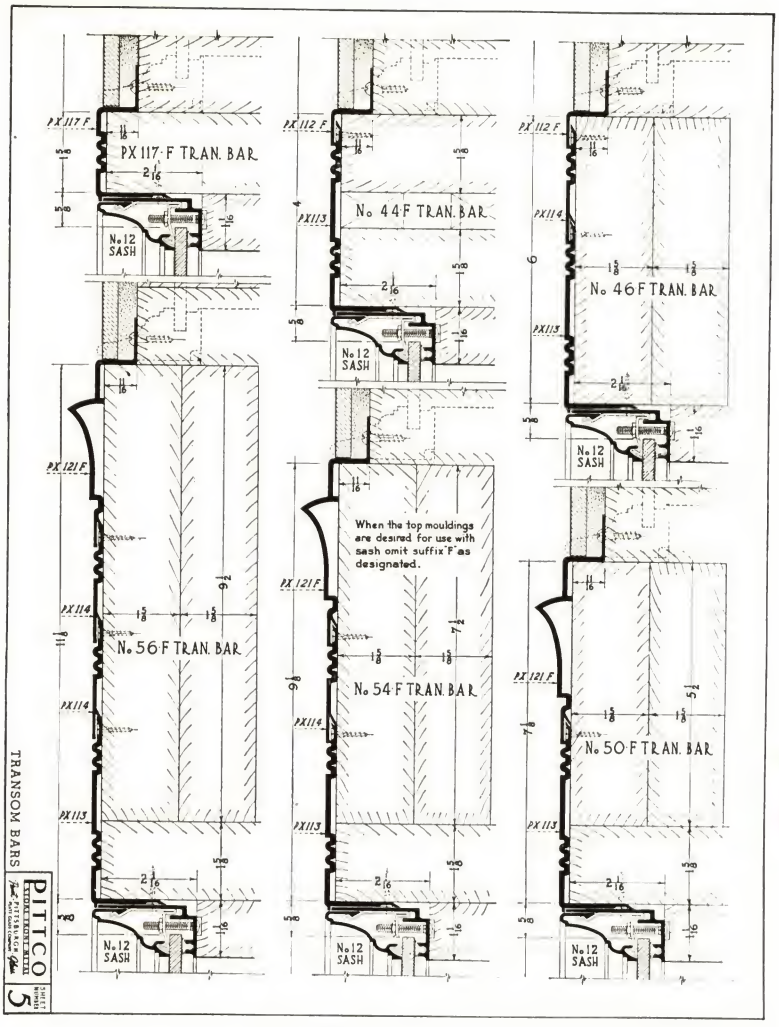


Detail of Pittco Vertical Bars.

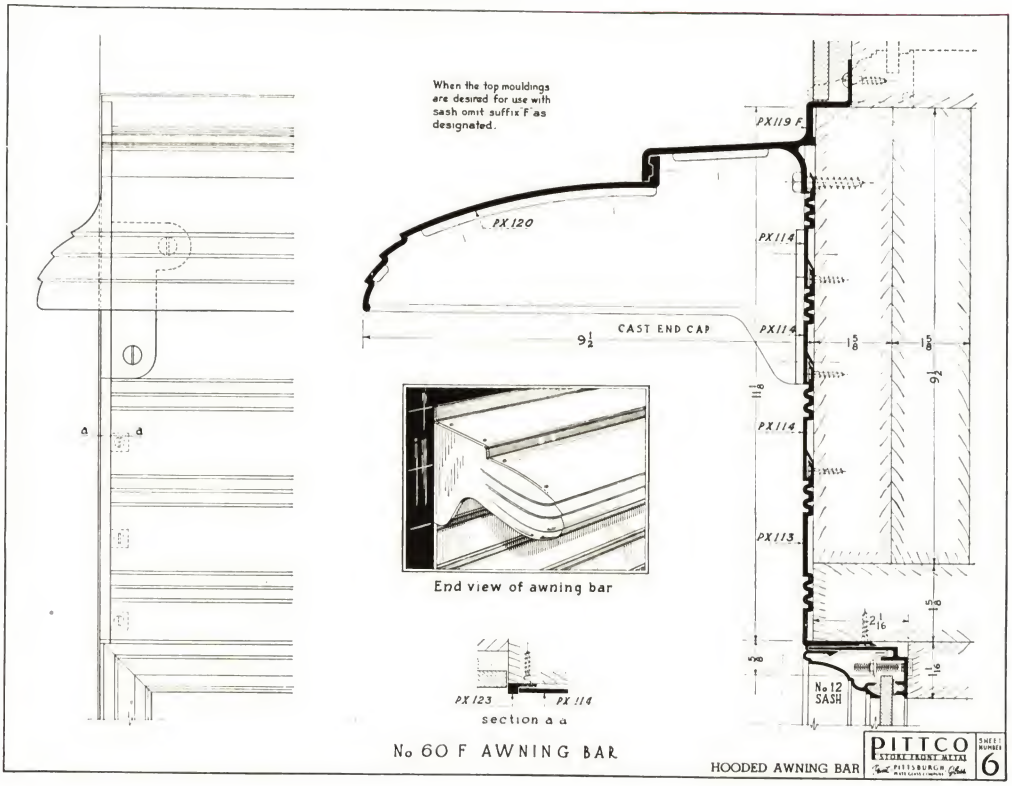
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PLATE GLASS COMPANY

QUARTER SIZE DETAILS

TRANSOM BARS

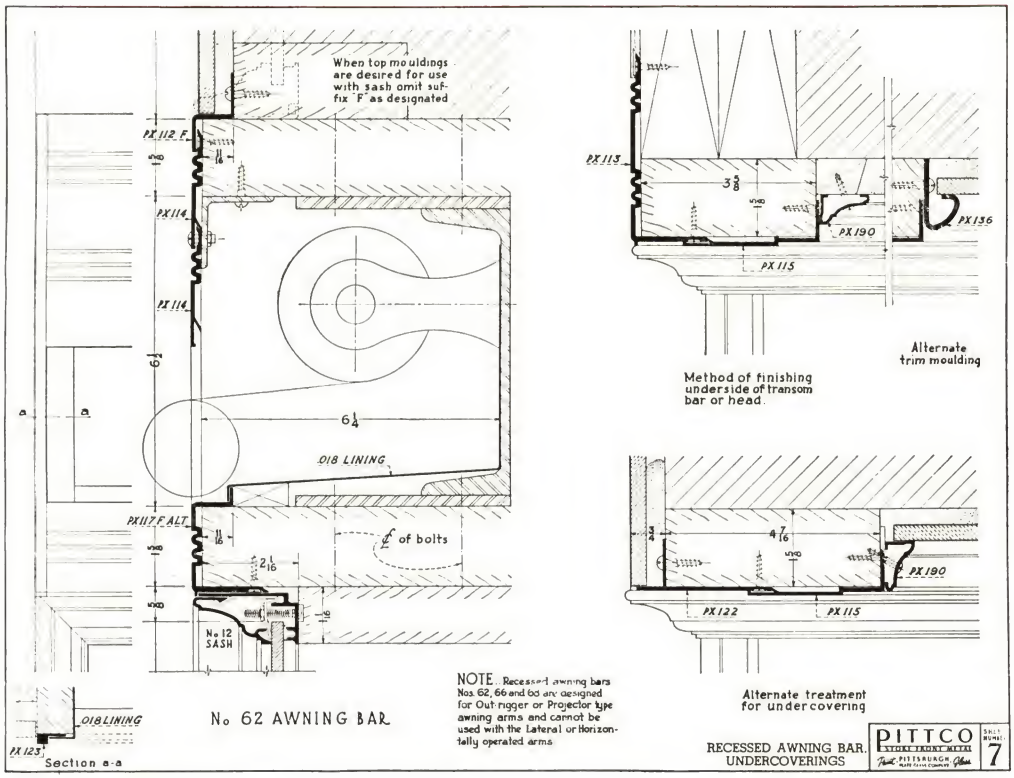


AWNING BARS

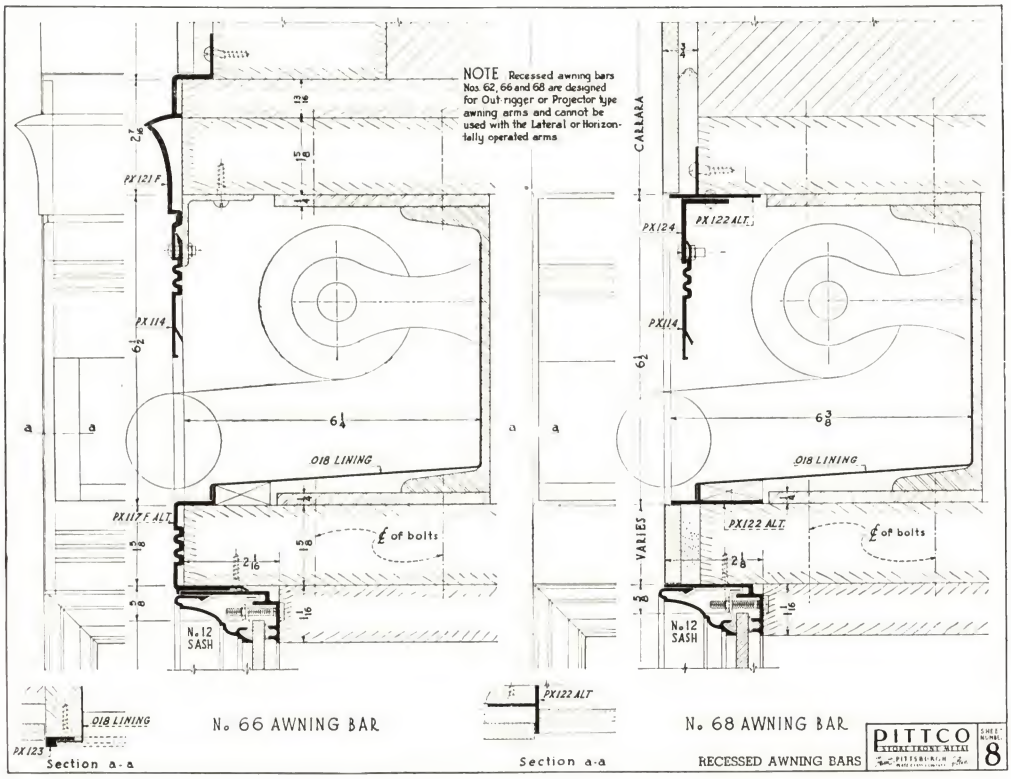


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PLATE GLASS COMPANY

QUARTER SIZE DETAILS OF PITTCO METAL STORE FRONT INSTALLATIONS



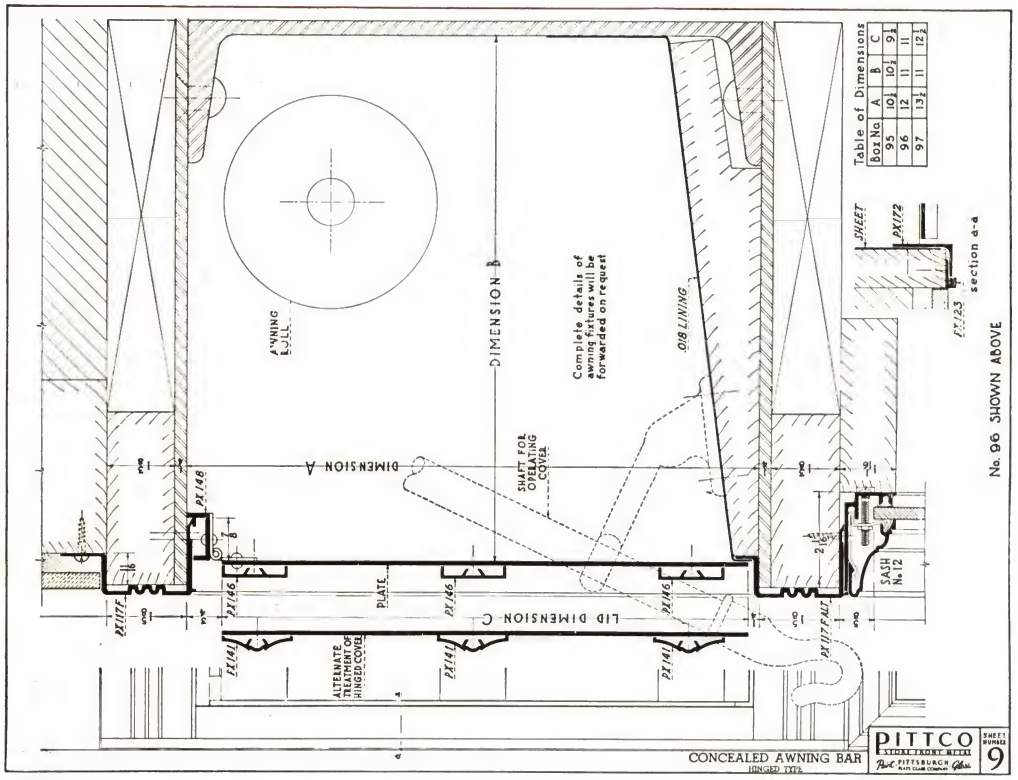
RECESSED AWNING BARS AND UNDER COVERINGS



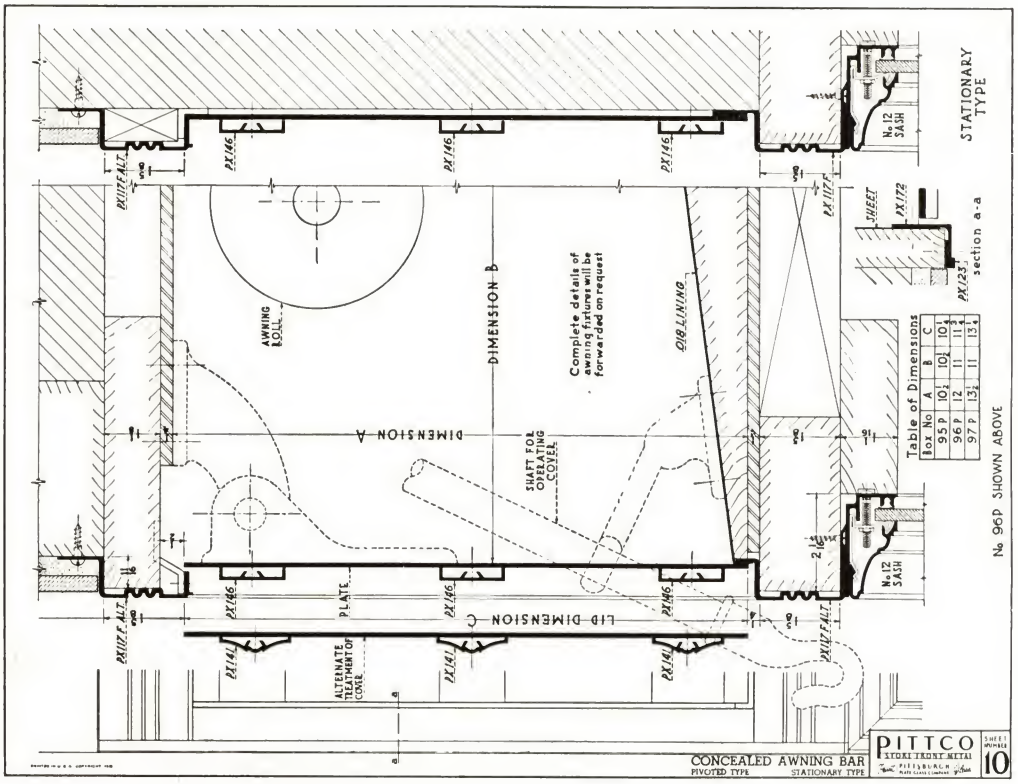
RECESSED AWNING BARS

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QUARTER SIZE DETAILS OF PITTCO METAL STORE FRONT INSTALLATIONS



CONCEALED AWNING BAR



CONCEALED AWNING BAR

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PLATE GLASS COMPANY

EASYSET STORE FRONT CONSTRUCTION



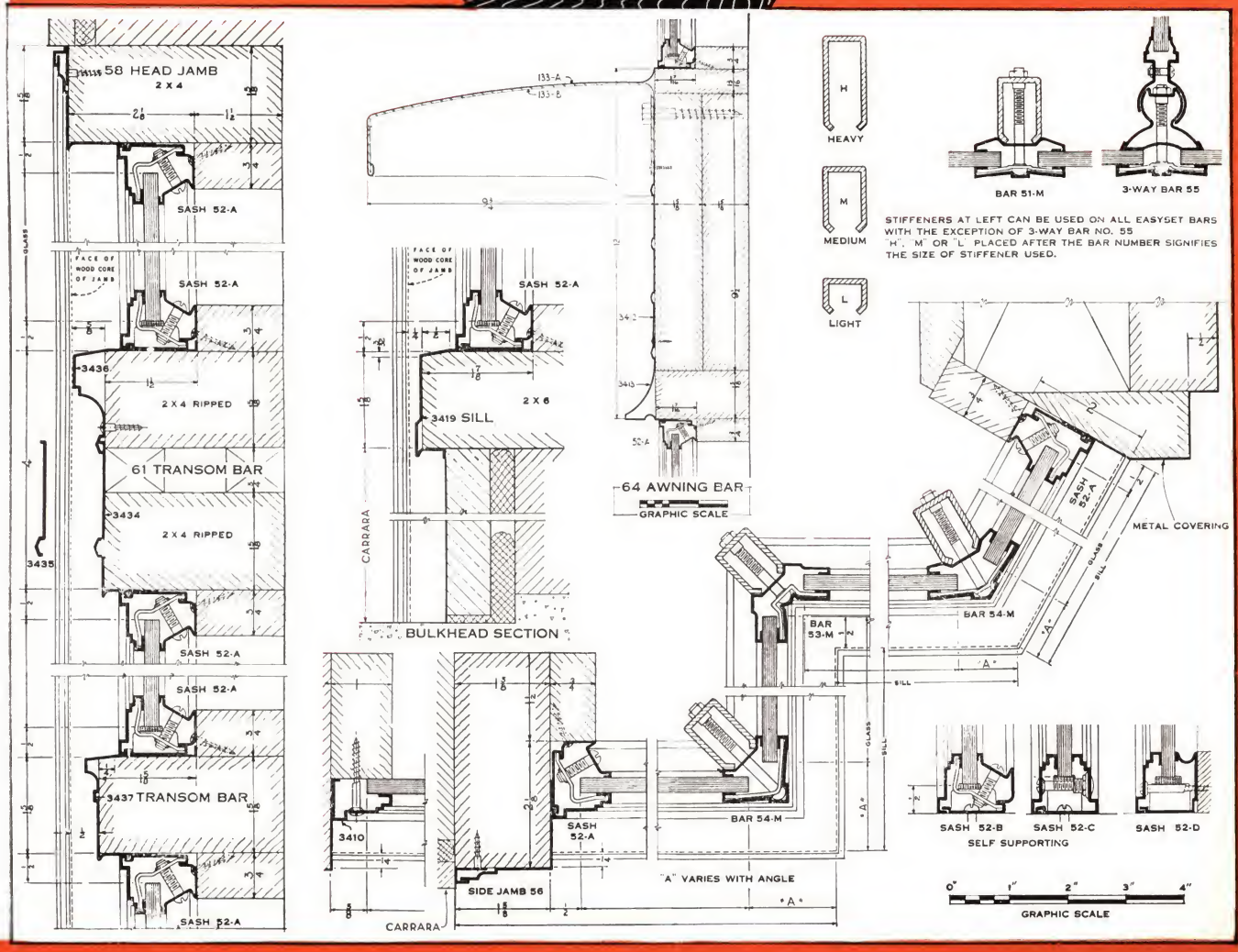
Above: View of 52-A EasySet Sash and accompanying members.

At right: Full size cross section through 52-A EasySet Sash.

Below: Reduced details of 52-A EasySet Sash and other important units such as jambs, transom bars, corner bars, division bars and sill.



Besides Pittco, we can also supply EasySet, an interesting line of cold rolled construction, in polished aluminum, satin aluminum, alumilite, polished bronze, satin bronze, statuary bronze (light or dark), stainless steel (polished or unpolished).



Paint. PITTSBURGH PLATE GLASS COMPANY Glass

Distributing and Manufacturing Facilities of the

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PLATE GLASS COMPANY



★ WAREHOUSES ● FACTORIES

AKRON, Ohio
674 Carroll St.
ALBANY, N. Y.
47 N. Ferry St.
ALLENTOWN, Pa.
827 N. 12th St.
AMARILLO, Texas
720 E. 13th St.
ATLANTA, Ga.
172 Marietta St., N. W.
BALTIMORE, Md.
8 S. Paca St.
BIRMINGHAM, Ala.
912 N. 20th St.
BOSTON, Mass.
300 Babcock St.
BRONX, N. Y.
441 Exterior St.
BROOKLYN, N. Y.
Jay, Water & Plymouth Sts.
BUFFALO, N. Y
101 Seneca St.
BUTTE, Mont.
840 Utah Ave.
CHARLOTTE, N. C.
201 E. Sixth St.
CHICAGO, Ill.
451 St. Clair St.
CINCINNATI, Ohio
Broadway, Court &
Eggleston Aves.
CLEVELAND, Ohio
3849 Hamilton Ave.
COLUMBUS, Ohio
324 E. Second Ave.
DALLAS, Texas
Santa Fe Terminal Bldg.
DAVENPORT, Iowa
414 Scott St.

DENVER, Colo.
2519 Walnut St.
DES MOINES, Iowa
108 E. Fourth St.
DETROIT, Mich.
6045 Hamilton Ave.
EL PASO, Texas
1106 E. Overland St.
FORT WORTH, Texas
1825 Main St.
GRAND RAPIDS, Mich.
21 Ionia Ave., S. W.
HARRISBURG, Pa.
611 S. 17th St.
HARTFORD, Conn.
40 Chapel St.
HIGH POINT, N. C.
1 S. Hamilton St.
HOUSTON, Texas
101 Crawford St.
INDIANAPOLIS, Ind.
59 S. State Ave.
JACKSONVILLE, Fla.
601 N. Myrtle Ave.
KANSAS CITY, Mo.
125 W. Fifth St.
KNOXVILLE, Tenn.
207 Humes St.
LITTLE ROCK, Ark.
112 N. Scott St.
*LOS ANGELES, Calif.
Box S, Florence Branch
LOUISVILLE, Ky.
1601 W. Main St.
MEMPHIS, Tenn.
435 Madison Ave.
MIAMI, Fla.
1200 Biscayne Blvd.

MILWAUKEE, Wis.
820 N. Market St.
MINEOLA, N. Y.
49 Windsor Ave.
MINNEAPOLIS, Minn.
616 South Third St.
MT. VERNON, N. Y.
556 S. Fulton Ave.
NASHVILLE, Tenn.
1102 Grundy St.
NEWARK, N. J.
290 Elizabeth Ave.
NEW HAVEN, Conn.
26 Mill St.
NEW ORLEANS, La.
1500 Poydras St.
*OAKLAND, Calif.
1125 Castro St.
OKLAHOMA CITY, Okla.
101 E. California Ave.
OMAHA, Neb.
1402 Jones St.
PEORIA, Ill.
915 S. Washington St.
PHILADELPHIA, Pa.
30-40 N. 16th St.
PITTSBURGH, Pa.
632 Duquesne Way
RICHMOND, Va.
302 Seventh St., S.
*PORTLAND, Ore.
1235 N. W. 15th Ave.
PROVIDENCE, R. I.
333 Harris Ave.
ROANOKE, Va.
14 Pleasant Ave., S. E.
ROCHESTER, N. Y.
362 Exchange St.

ROCKFORD, Ill.
123 South Third Street
SAGINAW, Mich.
103 Fitzhugh St.
ST. LOUIS, Mo.
3900 Chouteau Ave.
ST. PAUL, Minn.
459 Jackson St.
SAN ANTONIO, Texas
1420 S. Alamo St.
*SAN FRANCISCO, Calif.
1230 Market St.
SAVANNAH, Ga.
Central of Georgia Terminals
SCRANTON, Pa.
823 Wyoming Ave.
*SEATTLE, Wash.
316 Westlake Ave., N.
SHREVEPORT, La.
90 Fannin St.
SOUTH BEND, Ind.
1138 S. Lafayette St.
SPRINGFIELD, Mass.
40 Albany St.
SYRACUSE, N. Y.
838 Erie Blvd., W.
TAMPA, Fla.
102 Madison St.
TOLEDO, Ohio
2410 Albion St.
TULSA, Okla.
301 E. Archer St.
UTICA, N. Y.
615 Eagle St.
WASHINGTON, D. C.
4th & Channing Sts., N. E.
WILKES-BARRE, Pa.
54 Scott St.
YOUNGSTOWN, Ohio
25 N. Watt St.

*Carrying Pittsburgh Paint Products only

W. P. Fuller & Co., Distributors of glass products of the Pittsburgh Plate Glass Co., have convenient warehouses located in the following cities, with additional store and dealer accounts throughout the Northwest.

Phoenix, Arizona
Tucson, Arizona
Salt Lake City, Utah
Oakland, Calif.

Seattle, Washington
Tacoma, Washington
Spokane, Washington
Sacramento, Calif.
Walla Walla, Washington

Missoula, Montana
Butte, Montana
Portland, Oregon
Fresno, Calif.
Yakima, Washington

Los Angeles, Calif.
Santa Barbara, Calif.
San Diego, Calif.
San Francisco, Calif.

SECTION 19

CONTINUED ⟶

SIOUX METAL PRODUCTS COMPANY

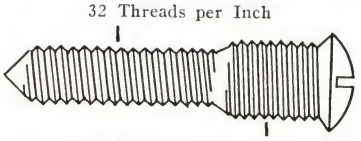
SIOUX CITY, IOWA

We offer to architects a complete construction for *modern store fronts.* The principal factor of Nulock is given below. By becoming fully informed of the many **"NULOCK"** Patented merits and the superior quality of Nulock, many architects are specifying same. Mouldings are formed to fit standard sizes of lumber. *Safe and easy to install.*

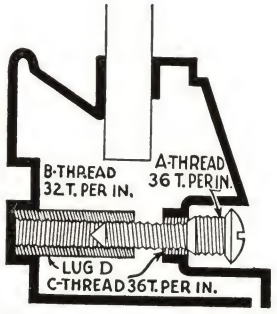
AUTOMATIC SCREW CONTROL SASH AND BARS

This Automatic Screw Control is one of the salient features of Nulock Store Front Construction. It is simple yet absolutely automatic in action.

The shank of the screw is slightly less diameter than the shoulder, and is threaded 32, while the shoulder or thicker portion is threaded 36. A lug threaded 32 is provided in the back member to receive the shank of the screw while the face member is threaded 36 to receive the shoulder portion. This thread differential automatically applies a pre-determined pressure. It is simply necessary to hold the outer member lightly against the glass, and then drive the screw completely home. When the head of the screw comes closely in contact with the outside member the operation is complete,



The Differential Screw

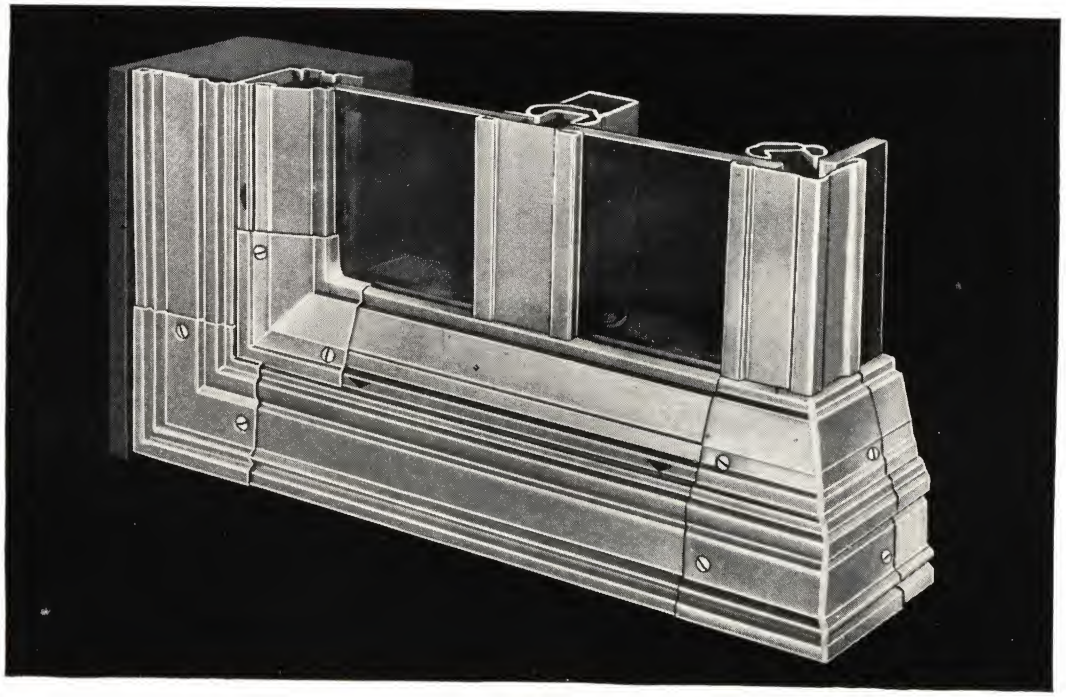


No. 405 Sash with Members in Place Ready for Screw Adjustments

and the mould has automatically been drawn into position and locked. It always does just that, no more, no less. It is impossible to draw the screw too tight. That is why we call it—*automatic screw control.*

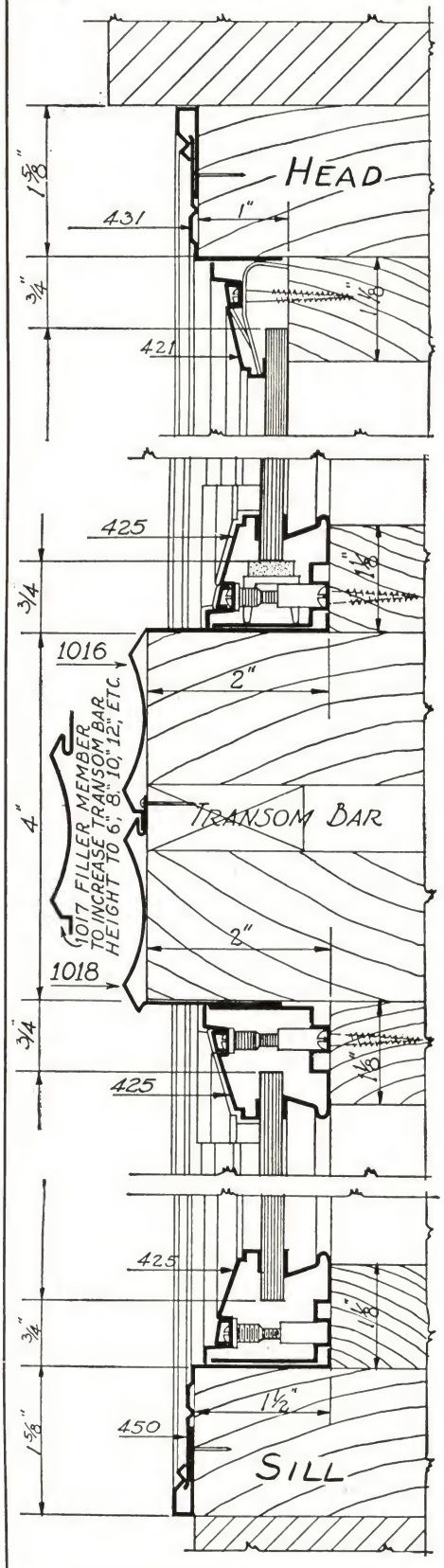
The contact of the metal mould is absolutely uniform throughout its entire length. There is no uneven pressure, no distortion of glass to cause breakage. The pressure provided, together with the spring of the metal, is just enough to allow for all expansion and contraction. It constantly holds the glass in a firm yet gentle clasp. Gentle enough to care for all vibration, yet firm enough to assure rigidity. *It is automatically adjustable to uneven glass, regardless of thickness.*

Breakage for Reason of Strain Is Practically Impossible

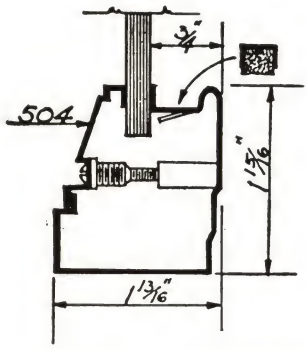


NULOCK-SYSTEM STORE FRONTS

AUTOMATIC SCREW CONTROL STORE FRONTS —SASH AND BARS



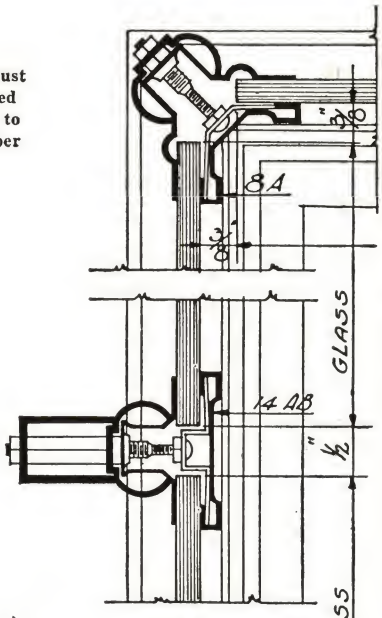
HALF FULL SIZE DETAIL

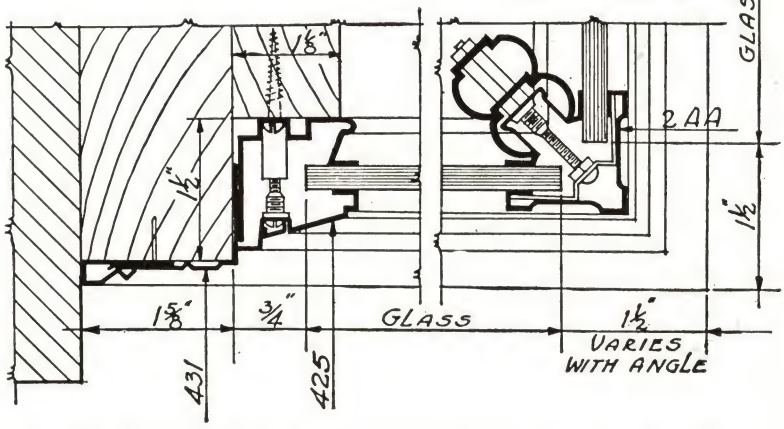


Felt Insert Dust Check Applied with Screws to Gutter Member

No. 504 Super-Ventilated Sash
Half Full Size

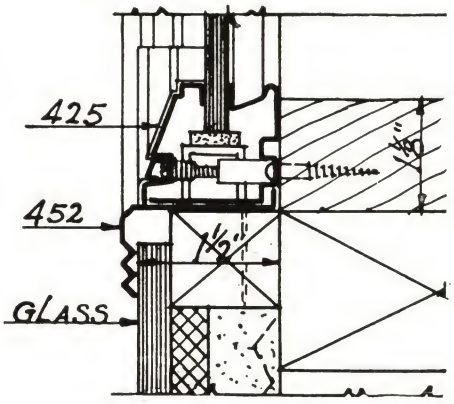
Where conditions require extreme ventilation No. 504 Super-Ventilated Sash is available. This sash cares for maximum conditions, and eliminates frosted windows in the coldest climate.



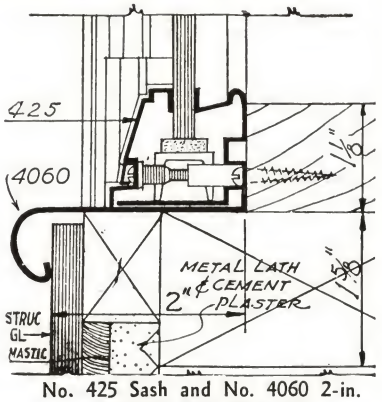


No. 405 Universal Sash can be supplied with a member No. 957 to conceal face screws as shown in above detail drawing, and is then designated as No. 425 Sash. When No. 6 reinforcing lug is added designation is No. 407 Self-Supporting Sash. With both screw cover and No. 6 Lug, designation is No. 427.

Extruded sash face can be furnished in either aluminum or bronze.

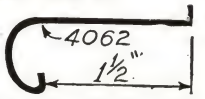


No. 425 Sash and No. 452 Sill



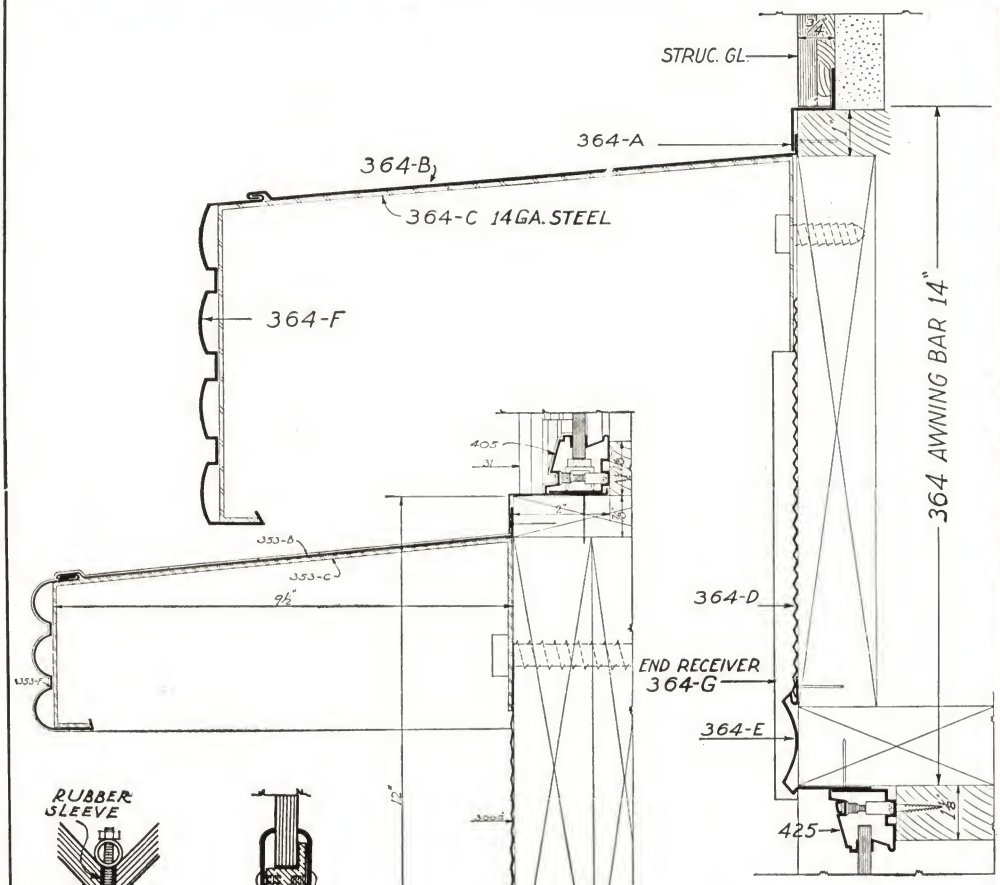
No. 425 Sash and No. 4060 2-in. Extruded Bull Nose Sill

No. 4062 1½-in. Extruded Bull Nose Sill



NULOCK-SYSTEM STORE FRONTS

STORE FRONT CONSTRUCTION
ROLLED—STAINLESS STEEL—ALUMILITE—BRONZE—COPPER



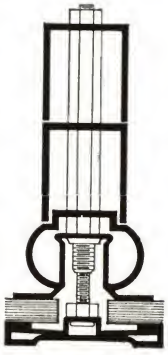
Awning Bar No. 353



No. 3 Protection Bar for Mitred Glass Joints

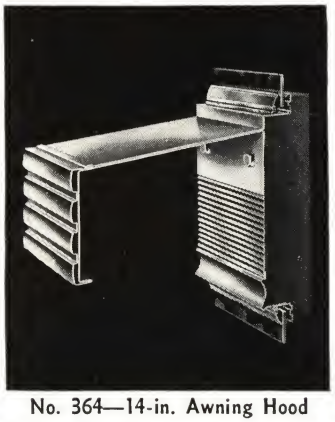


No. 16 Division Bar

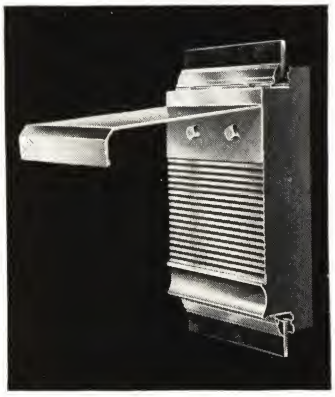


No. 14ABB Division Bar Additional Reinforcing for Large Plates

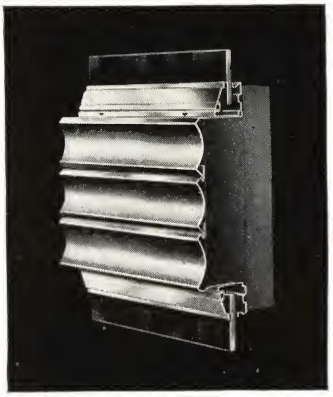
The awning hoods detailed on this page are typical construction, attractive and practical for any type of front. See our full size details for standard stock mouldings which can be substituted for facia members shown.



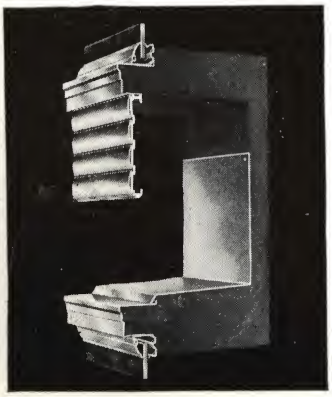
No. 364—14-in. Awning Hood



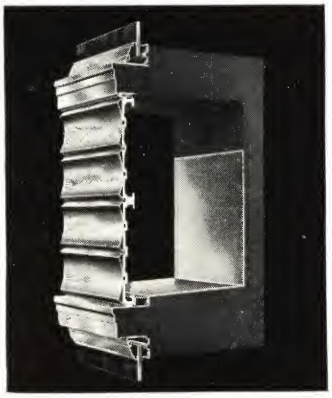
No. 350—12-in. Awning Hood



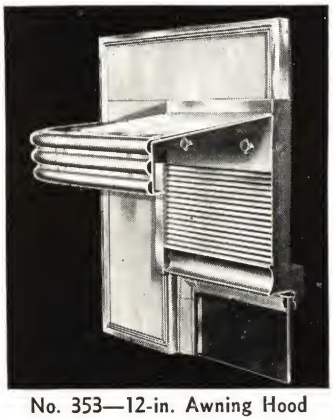
No. 416—6-in. Transom Bar



Left: No. 360-6 Recessed Awning Head



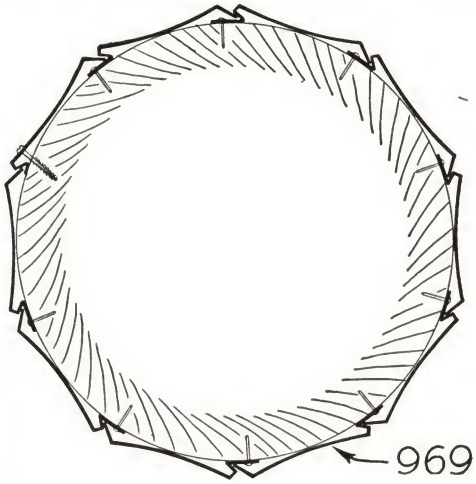
Left: No. 360-12 Concealed Awning Hood

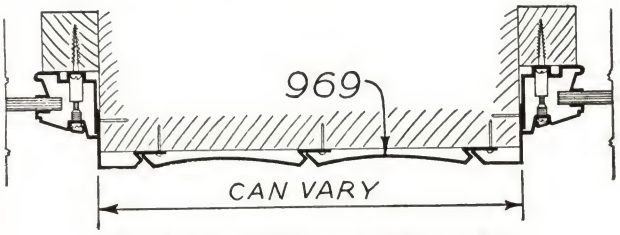


No. 353—12-in. Awning Hood

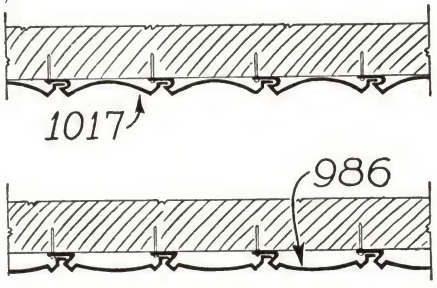
NULOCK-SYSTEM STORE FRONTS

STORE FRONT CONSTRUCTION
METAL COVERED DOORS—CANOPIES—METAL LETTERS





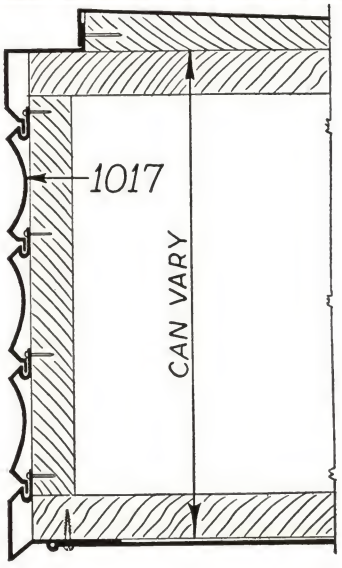
PLAN OF METAL COV'D. PIER



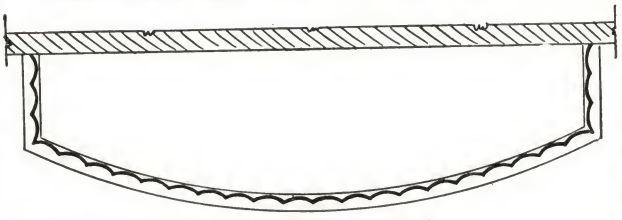
ALTERNATE PIER FACINGS

Above Pier and Column Facings Demonstrate the Flexibility of Interlocking Stock Mouldings





SECTION OF CANOPY FACIA



PLAN OF CANOPY WITH 924 USED AS FACIA PLACED VERTICALLY



Our Architectural Department

Is at your disposal in submitting special designs of Canopies assembled from our standard stock mouldings. For complete line of mouldings see Nulock full size construction details.

STANDARD STORE FRONTS

Rustless Metal Store Front Construction and Porcelain Enamel Panels

NILES, MICHIGAN

STANDARD fabricates a complete line of up-to-date rustless metal store front construction, in both rolled and extruded types. Items furnished include: SASH, BARS, AWNING BARS, TRANSOM BARS, TRIM MOULDINGS, GRILLES, THRESHOLDS, DOOR JAMBS, HINGED AND PIVOTED VENTILATORS, POSTER FRAMES, SHOWCASE DOORS, PORCELAIN ENAMEL PANELS, RUSTLESS METAL DOORS, CAST ORNAMENTS, and SPECIAL METAL WORK.

True, straight lines, graceful curves, interesting shadow lines, appealing lustre and modern simplicity make Standard construction very useful and valuable to today's store front designer. Standard construction is complete—planned as a harmonious line—to be used for the entire front. Sizes conform to standard lumber sizes, for easy installation.

All Standard glass-holding members—whether rolled or extruded—are *fully resilient*. No looseness. No rigidity. This is a very important feature for it means maximum protection against plate glass breakage at all times.

METALS AND FINISHES

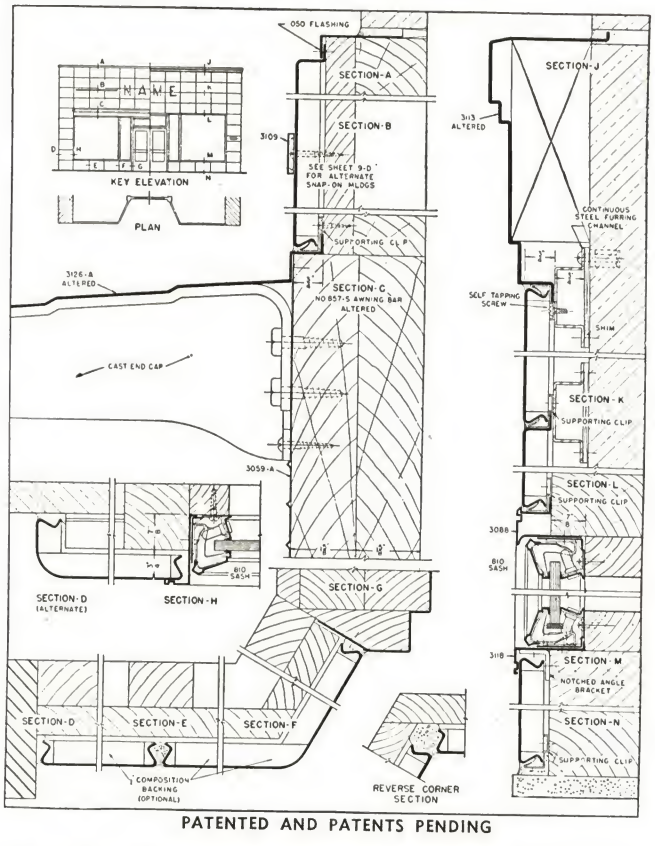
Cold-rolled metal is available in aluminum (with Alumilite Finish), bronze (polished, satin, or statuary) or stainless steel, (polished or satin). Extruded metal in aluminum with the Alumilite Finish, or bronze, satin polished or statuary.

FURTHER DATA ON REQUEST

Complete full size details, an illustrated catalog and further information will be sent on request. Write STANDARD STORE FRONTS, Niles, Michigan.

INTRODUCING STANDARD PORCELAIN ENAMEL





PATENTED AND PATENTS PENDING

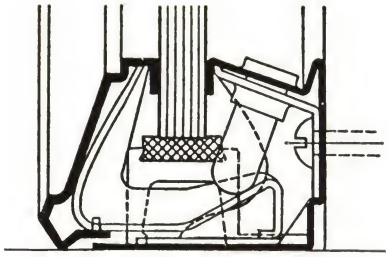
Standard Architectural Porcelain Enamel offers the designer and merchant a superior facing material with many definite advantages for exterior use in connection with all types of store fronts—or for interior use as a finishing material.

Panels are fabricated of heavy 16-gauge enameling steel, with ¾-in. flanges on all sides, welded corners and ½-in. insulation board backing. Maximum panel size 2 ft. x 3 ft. Narrow ⅛-in. joints. Porcelain (vitreous) enamel is applied under tremendous heat which fuses porcelain and steel—both sides with 3 coats of desired color on face. Twenty-five standard satin finish colors (acid-resisting, non-fading and changeless) plus black and white (in gloss) take care of all ordinary needs. Special shapes, colors and designs allow the architect great freedom.

INDIVIDUAL SUSPENSION on metal or wood furring by concealed, resilient bronze spring clips means localization of load, and consequent safety at any height, ease of replacement without disturbing adjoining panels, and salvage value.

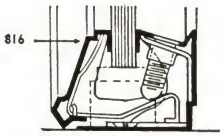
Standard Porcelain Enamel Facing is unusually attractive in appearance. Low upkeep cost is assured because the non-porous, easily cleaned quality of glass is combined with the strength and toughness of metal. Panels are comparatively light and thus can be easily handled and securely installed.

STANDARD ROLLED STORE FRONT CONSTRUCTION



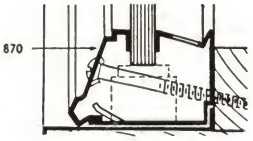
SASH No. 810—FULL SIZE

Rolled Sash No. 810, detailed in full size at left, is the most widely used STANDARD sash. No screw heads appear on the face of this efficient sash, which holds glass with a full cushion grip. Caps are included for finishing joints.

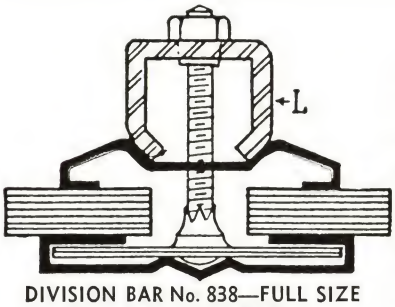


SASH No. 816
Self-Supporting Type
Fully Resilient

HALF SIZE



SASH No. 870
Screw-Pressure Type
Fully Resilient



DIVISION BAR No. 838—FULL SIZE
Shown with Light Stiffener

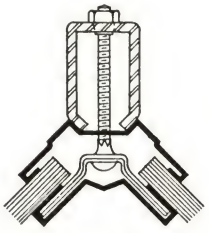
BARS AND STIFFENERS

Standard Bars are furnished at any angle, plain or with Light, Medium or Heavy Stiffeners. Reinforcement with Heavy Stiffener when specified. Bars should always be used, for protection and finished appearance. Extruded bars similar.

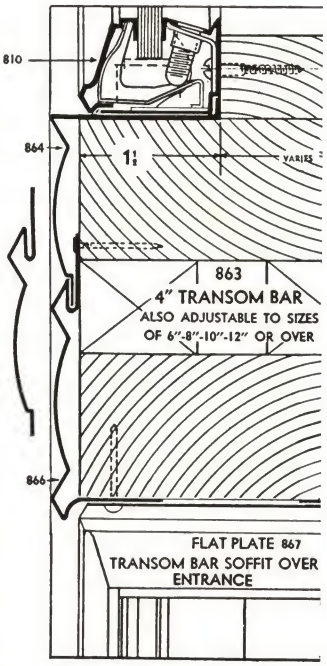


CORNER BAR No. 821
Shown with Heavy Stiffener and Reinforcement

HALF SIZE



REVERSE BAR No. 829
Shown with Medium Stiffener

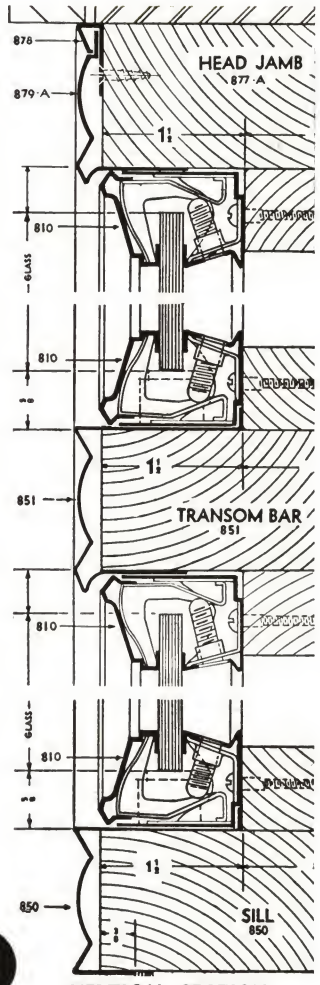


4-IN. TRANSOM BAR
With Extension Moulding
No. 865

Adjustable to sizes of 6", 8", 10", and 12" or over with the use of interlocking Extension Moulding.

FULL SIZE DETAILS
Available on Request

HALF SIZE



VERTICAL SECTION

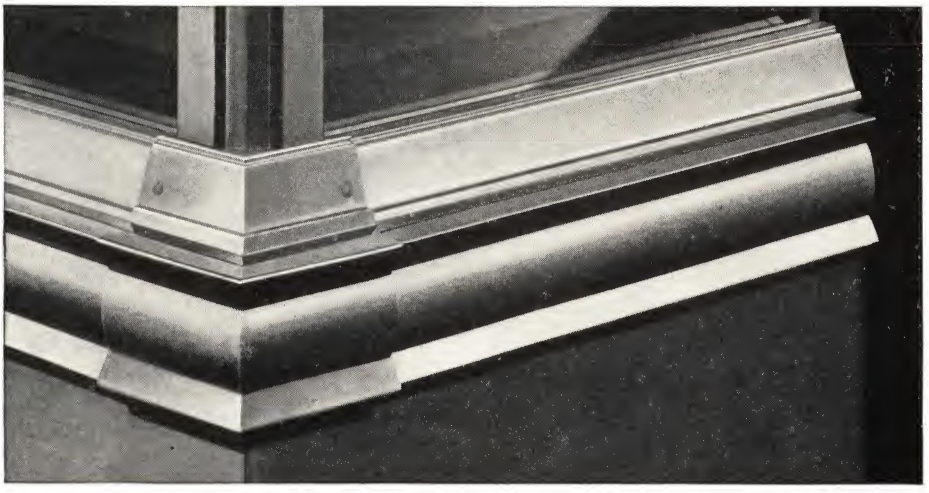
STANDARD ROLLED AWNING BARS

Weatherbeaten awnings have ruined the beauty of many a store front. But with Standard Awning Bars, this possibility can be avoided easily, and a neat front assured. Rolled Awning Bars are similar to the extruded types shown on page 4.

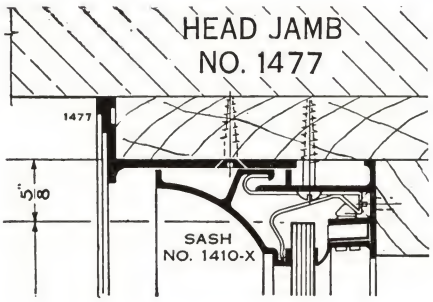
The unique beauty of the improved Standard construction is illustrated by the photograph at right showing rolled Sash, Corner Cap, Bar and Sill. Full cushion grip, with evenly distributed pressure along both sides, gives maximum safety for plate glass.

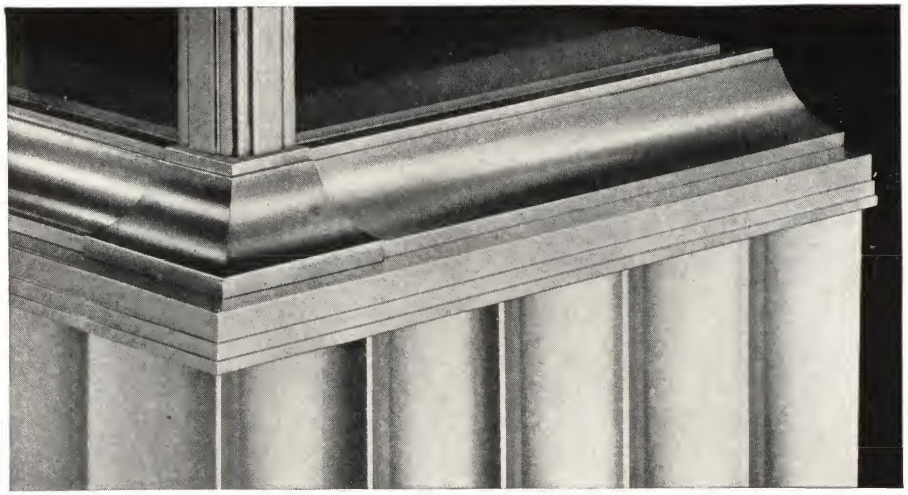
WRITE FOR DATA ON ITEMS NOT SHOWN

PATENTED AND PATENTS PENDING

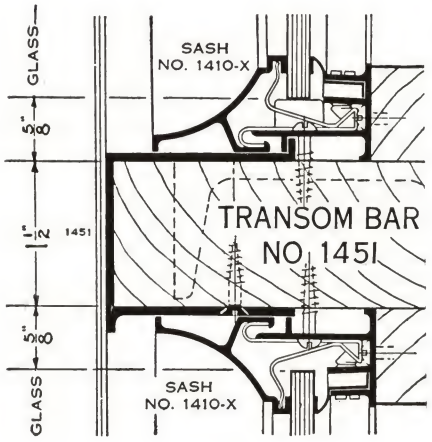


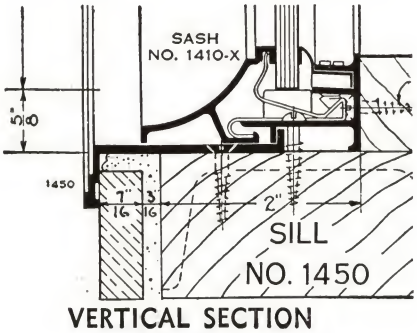
STANDARD EXTRUDED STORE FRONT CONSTRUCTION





This is an unusually rich and attractive construction with a complete line in either aluminum with the Alumilite Finish or bronze. Graceful curves and straight lines make it ideal for any type of front. Fully resilient spring mechanisms hold face piece in place; a continuous and fully resilient spring at back completes the strong, yet yielding grip on glass which is spread out evenly along its surface. Looseness and rigidity are avoided—and glass breakage practically eliminated. Resilient Extruded Sash No. 1410-X shown in vertical and horizontal sections.

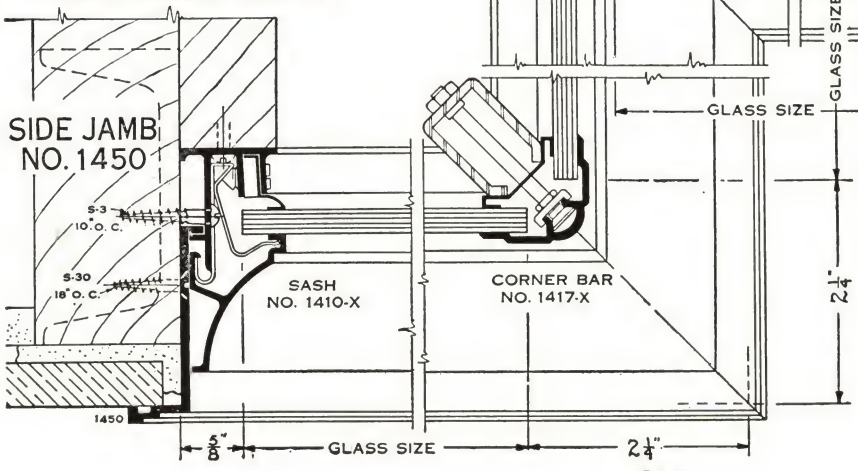




VERTICAL SECTION

HALF SIZE

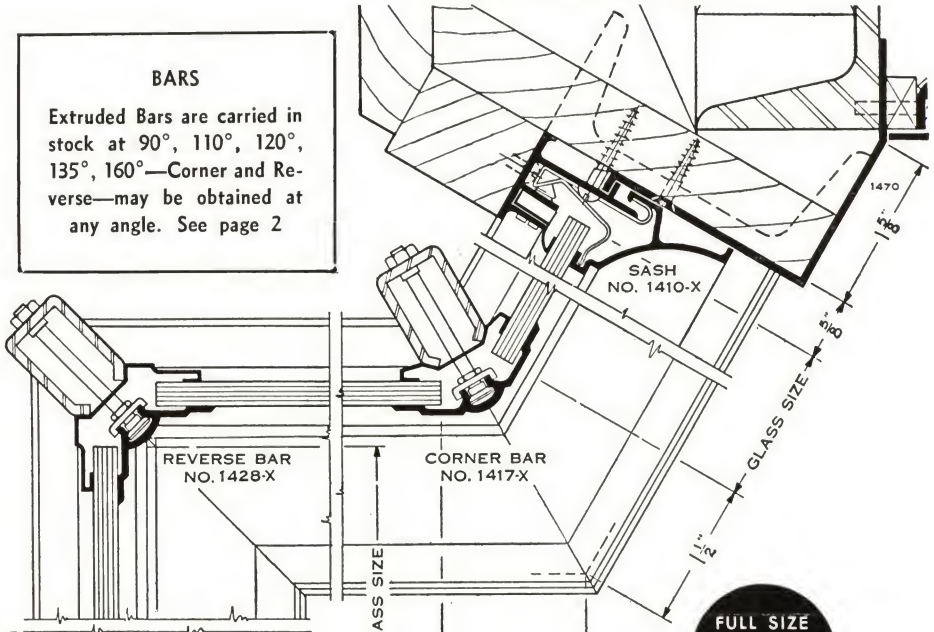
HORIZONTAL SECTION



BARS

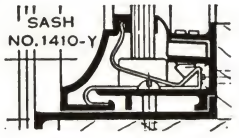
Extruded Bars are carried in stock at 90°, 110°, 120°, 135°, 160°—Corner and Reverse—may be obtained at any angle. See page 2

PATENTED AND PATENTS PENDING

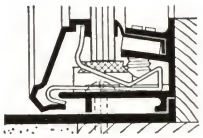


FULL SIZE DETAILS AVAILABLE ON REQUEST

ALTERNATE SASH—HALF SIZE

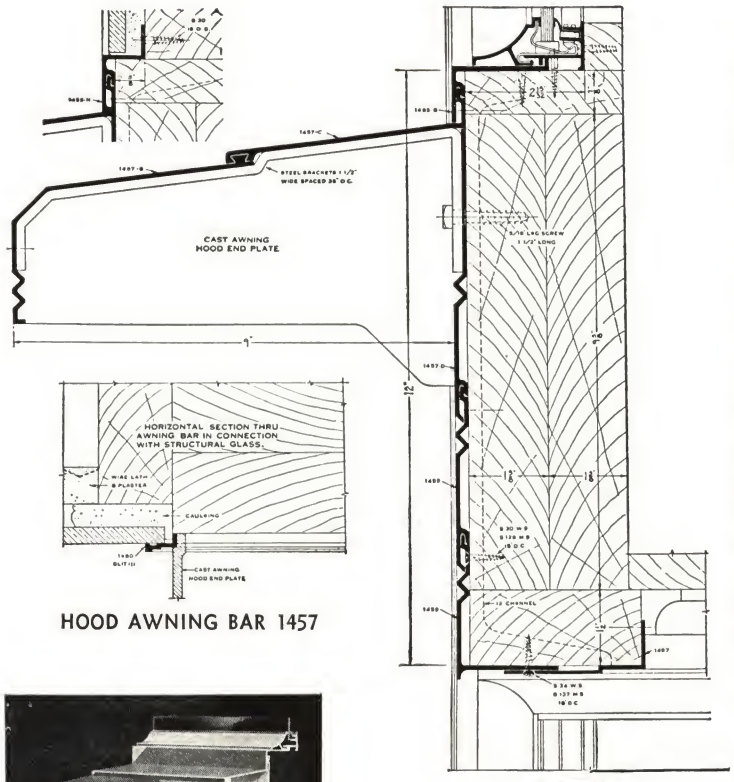


SASH No. 1410-Y
Self-supporting—Fully Resilient

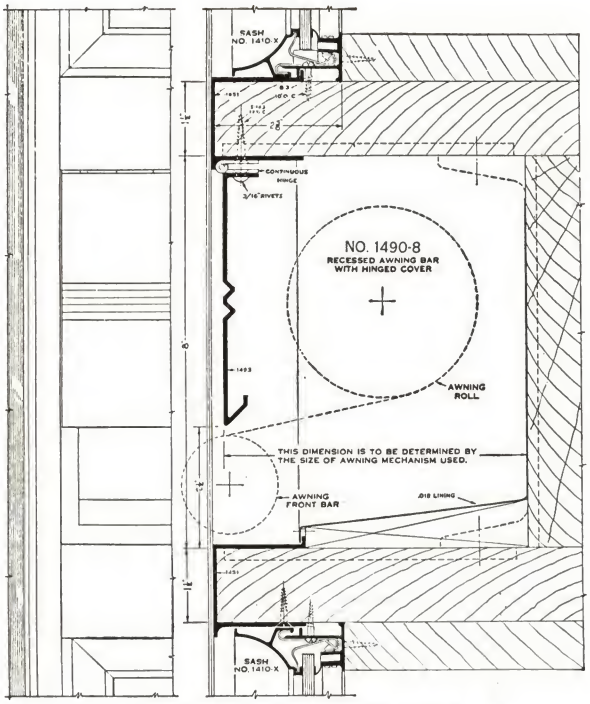


SASH No. 1410-8
Self-supporting—Fully Resilient

STANDARD AWNING BARS



HOOD AWNING BAR 1457

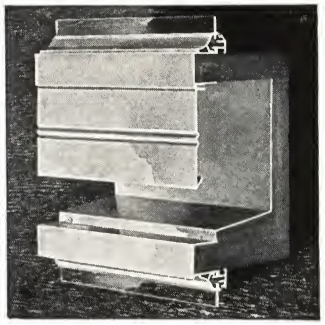


RECESSED AWNING BAR 1490-8

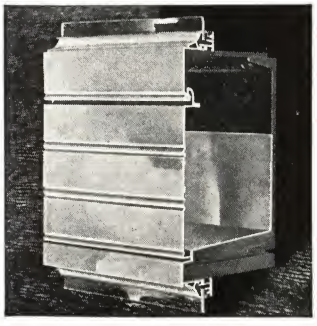
PATENTED AND PATENTS PENDING



HOOD TYPE



RECESSED TYPE



CONCEALED TYPE

QUARTER SIZE

AWNING BARS

(Rolled construction similar)

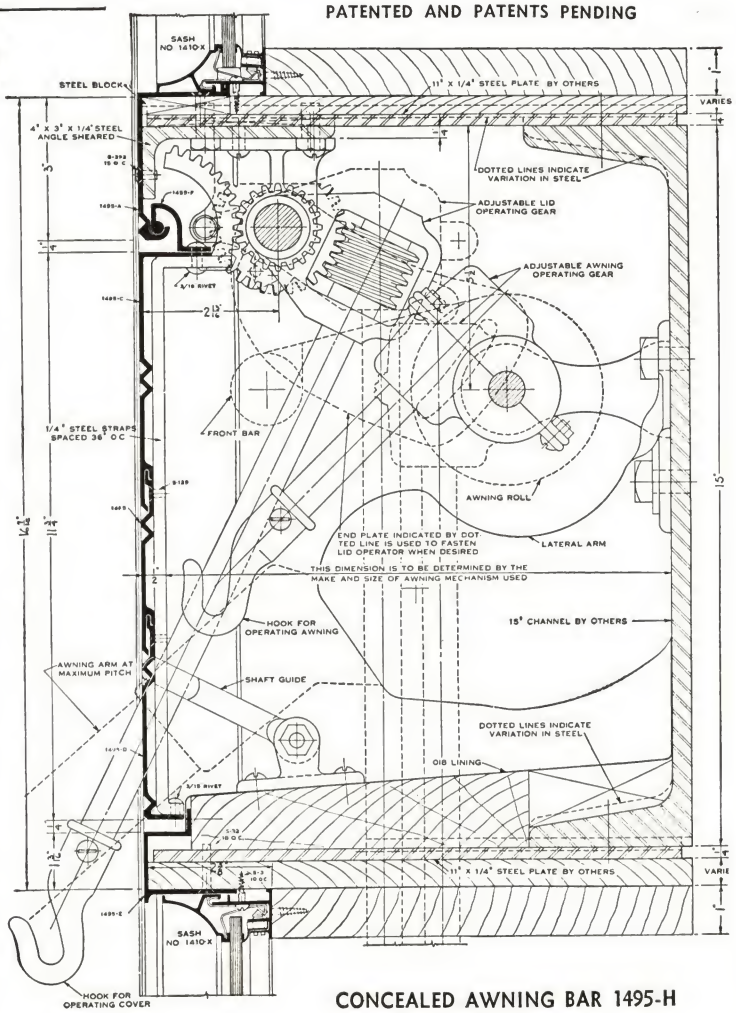
Standard Awning Bars not only give excellent protection to awning rolls, but also become a very beautiful decorative feature of the store front. By partially or completely hiding unsightly awning rolls, they solve an important problem.

HOOD type is one of the most effective ever developed. Simple and attractive.

RECESSED type houses and partially hides awning roll in a recessed box. Outrigger arms only.

CONCEALED type hides awning roll from view when not in use. Designed for lateral arms only. Awning and mechanism by others.

FURTHER DATA. This catalog shows only a few of the many store front members and shapes furnished by Standard. For further data and full size details, write STANDARD STORE FRONTS, NILES, MICH.



CONCEALED AWNING BAR 1495-H

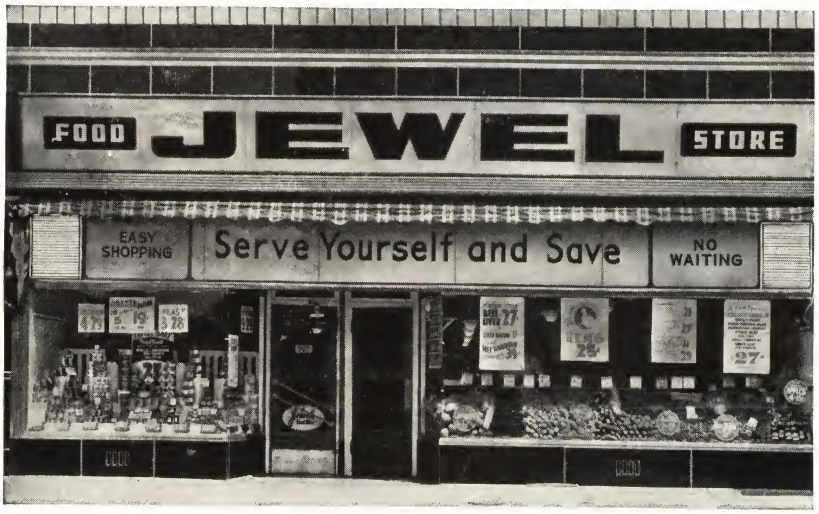
TELEPHONE
Monument 2-4788

THE VENTILOUVRE COMPANY, INC.

548 Riverside Drive, NEW YORK, N. Y.

For other Panelouvre Products, see File Index

TOP LIGHT VENTILATION FOR STORE FRONTS



The Jewel Store—Rissman & Hirschfeld, Architects, Chicago

In designing Store Fronts, architects have often found it desirable to provide a means of ventilating through the Top Lights. Available means of providing this have been found generally unsatisfactory. Hinged and pivoted ventilators are unsightly, afford poor protection against the weather and are difficult to close tightly.

The VENTILOUVRE COMPANY, INC., in response to a demand for an easily controlled Top Light Ventilator, has utilized their long experience with natural air ventilation. Result is, as shown on this page, their No. 110 Top Light Adjustable Panelouvre.

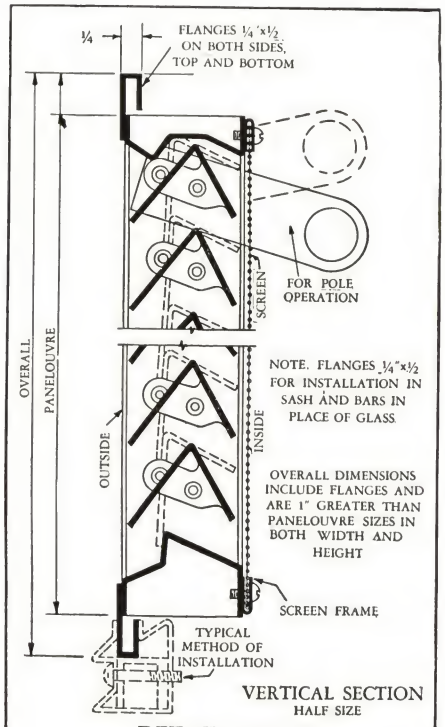
Architects and Store Front Designers will find in the use of No. 110 Top Light Panelouvre, their ventilating problems solved. While particularly desirable for use in Food stores, their use is by no means limited to that type of store.

No. 110 Top Light Adjustable Panelouvre

They are, as are all Ventilouvre products, substantially die made, and easily operated. They allow generous ventilation when open, and close tightly, presenting an excellent weathering flat surface. Their appearance, open or closed, is in harmony with the present trend in Store Front design.

Their use in the top lights, combined with a grille in the bulk head connected by a duct to the floor, makes an excellent circulatory system for the avoidance of frost on windows in Winter.

These units usually replace glass top lights, one at each side of the store. They are also used to replace the transom over the door.



DETAIL NO. 110

FOR TOP LIGHT VENTILATION IN STORE FRONTS

Materials—Steel, Bronze, and Aluminum.

Sizes—As required.

Stock Sizes—

18"x24" (Louvre Size).

18"x30" (Louvre Size).

Note: Above sizes carried in stock in Bronze with Aluminum Finish.



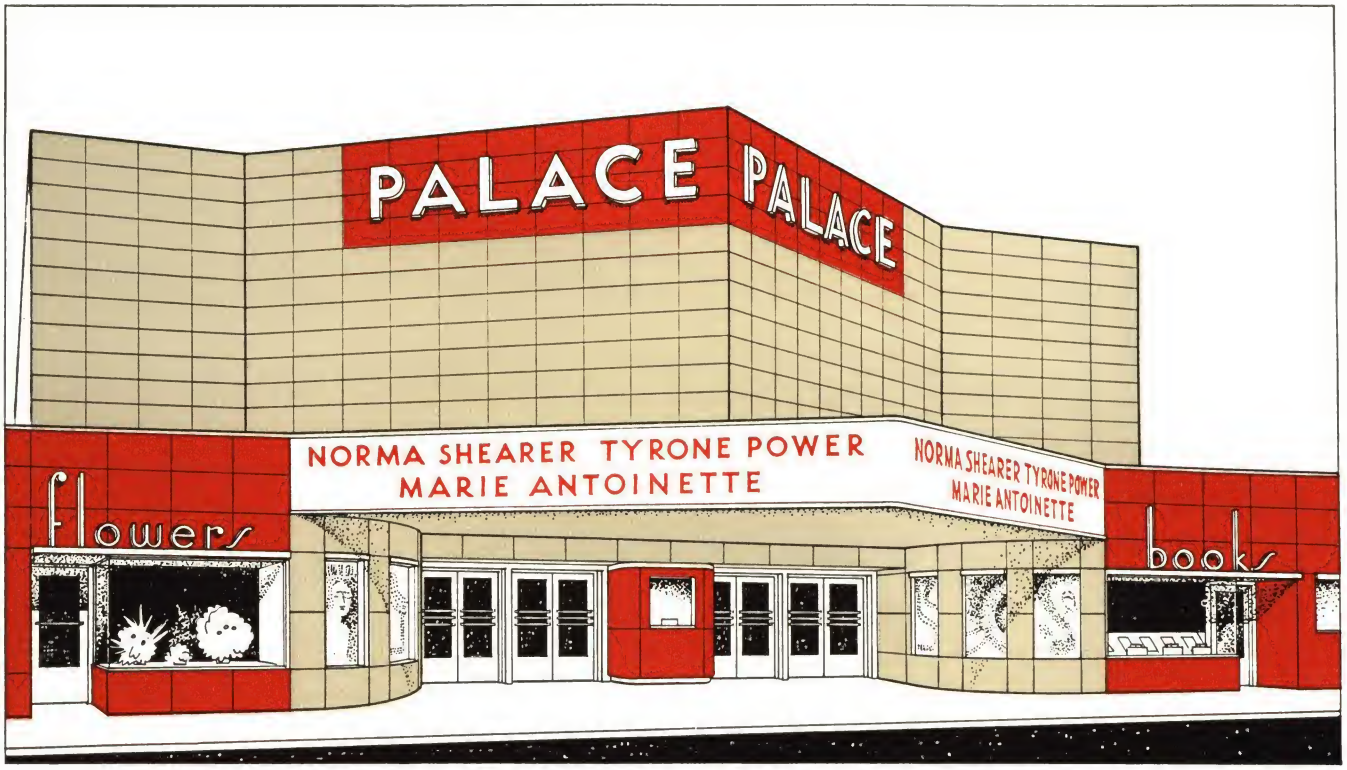
Atlantic & Pacific Tea Co. Store—William G. Carnegie, Architect, Chicago

DATA ON RUSTLESS METAL STORE FRONTS BY

ZOURI

- COMPLETE ROLLED AND EXTRUDED STORE FRONT CONSTRUCTION
- ARCHITECTURAL PORCELAIN ENAMEL FACING PANELS
- DOORS AND ENTRANCES, SIGN LETTERS, SPECIAL METAL WORK

1939



ZOURI FACING PANELS OF DURABLE PORCELAIN ENAMEL

Zouri Facing Panels are furnished for exterior use in connection with all types of store fronts, or for interior use as a finishing material.

Panels are fabricated of heavy 16-gauge extra flat enameling steel, with ¾″ flanges on all sides which afford strength and keylock the calking. Corners are welded, and flat panels are strengthened and insulated after enameling with ½ in. insulation board, securely attached with water and heat-proof cement.

ENAMELING. Porcelain (vitreous) enamel is applied on both sides under tremendous heat (1550 degrees F.) which fuses porcelain and steel—with 3 coats on face in desired color. Final coat is acid-resisting, with appealing Zouri Satin Finish (semi-matt), although gloss finish may be specified. The best grades of frits and oxides are used—as are the most advanced methods of firing and fabrication. Porcelain Enamel is inorganic, and non-porous—entirely mineral as contrasted with baked enamel or paint finishes which are organic and changeable. Colors are non-fading and changeless.

STANDARD SHAPES AND COLORS. 10 standard shapes are shown on p. 3 and are made in sizes 16x16″, 16x24″, 20x20″, and 20x28″. Maximum size, 2x3′. 25 standard satin finish colors plus black and white (in gloss) take care of all ordinary needs.

SPECIAL WORK. There are very few design limitations in architectural porcelain enamel. Enameling steel can be formed to almost any desired curve or shape for facing, curved set-backs, pilasters, grilles, bulkheads, sign letters, etc. Practically any color or shade can be matched, and designs, stripes, letters, or pictures reproduced.

ATTRACTIVE APPEARANCE. The effect of Zouri Porcelain Enamel Facing is distinctly modern and up-to-date, with a wide range of appealing color combinations in pastel shades as well as the stronger colors. Narrow ⅛″ joints are neat and unobtrusive.

LOW MAINTENANCE COST. Zouri Panels are easily cleaned, being completely non-porous and glass-like.

PERMANENCE. Zouri colors are non-fading and changeless. Panel surfaces are tough and durable, not easily damaged by fire or temperature extremes—will not chip, crack, break, scratch, flake or wear off under ordinary use.

INDIVIDUAL SUSPENSION, by concealed and resilient bronze spring clips, means localization of load, and ease of replacement of any panel without disturbing other panels. Panels may also be removed and salvaged in case of change of location.

SAFETY. Zouri Panels are comparatively light in weight and are held securely in place by mechanical means so that they may be applied to any height, without chance of weight building up from tier to tier. Not attached by mastic. Not affected by heat, frost or moisture.

ERECTION. Zouri Panels are installed on ¾x2″ steel furring strips or on wood furring by means of resilient bronze spring clips at top and bottom of each panel. Furring strips are fastened to wood with wood screws, or to masonry with expansion plugs—spaced to accommodate the panels, and located plumb and level.

Zouri Architectural Porcelain Enamel is accepted as a superior facing material for general use—and offers the designer and merchant many definite advantages.

WRITE FOR COLOR CARD, F. S. DETAILS, AND COMPLETE ILLUSTRATED BOOKLET

ZOURI **STORE FRONTS**

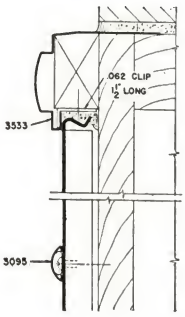
MAIN PLANT—NILES, MICHIGAN

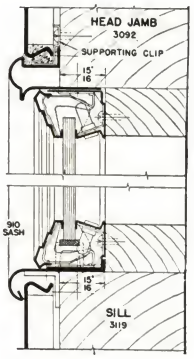
DISTRIBUTORS IN PRINCIPAL CITIES

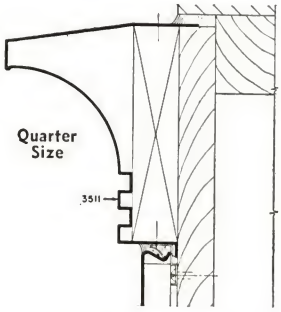
ZOURI FACING PANELS

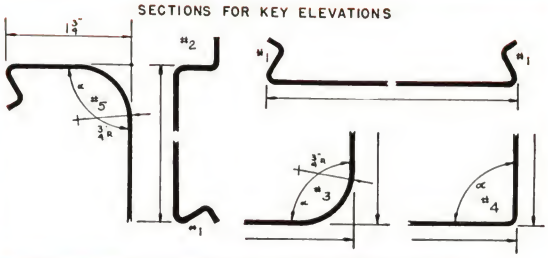
TRIM MOULDINGS

Details show typical Zouri Trim Mouldings in aluminum, bronze, or stainless steel, as installed with Zouri Porcelain Enamel Panel construction. Zouri Facing Panels and the entire line of rustless metal store front construction may be used effectively together.

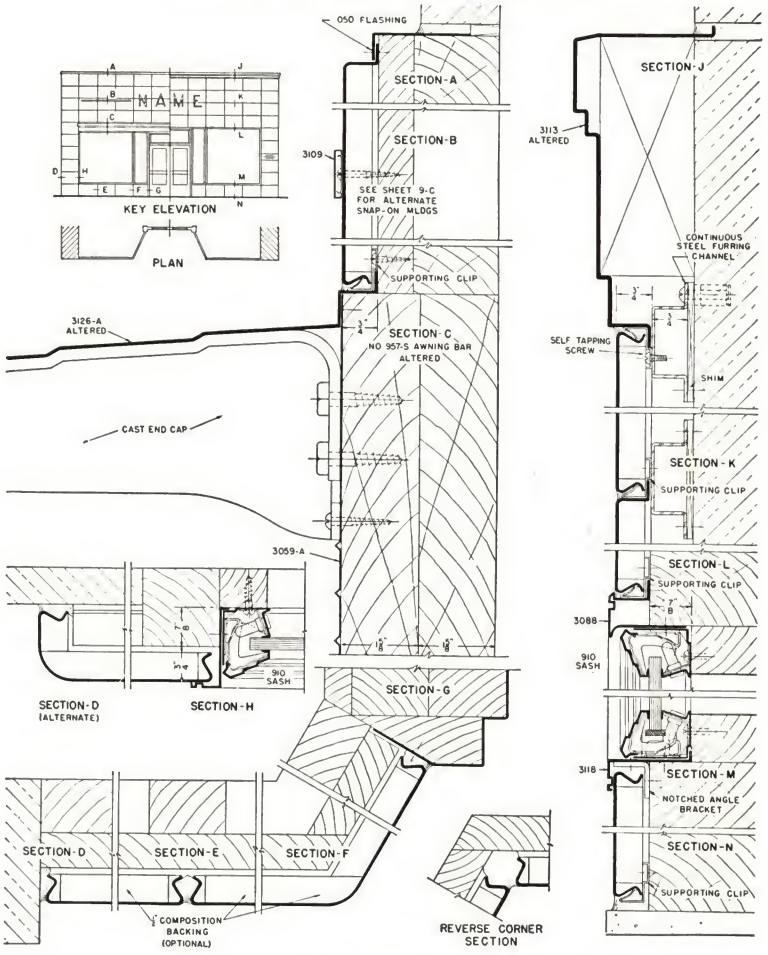








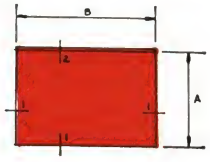
INSTALLATION DETAILS—Quarter Size



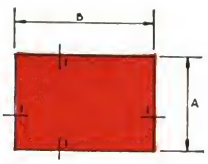
ARCHITECTURAL PORCELAIN ENAMEL

PATENTED AND PATENTS PENDING

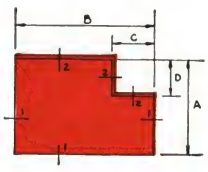
STANDARD SHAPES



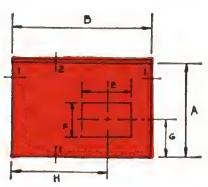
TYPE R



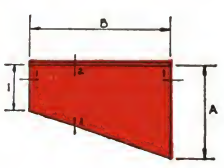
TYPE R-1



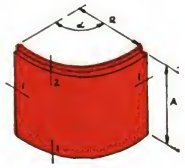
TYPE R-2
LEFT AND RIGHT RIGHT SHOWN



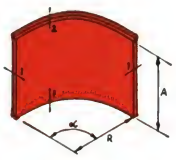
TYPE R-3



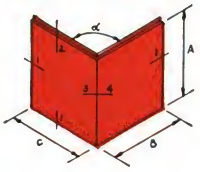
TYPE R-4
LEFT AND RIGHT RIGHT SHOWN



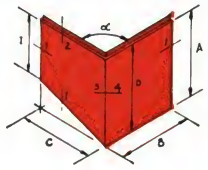
TYPE R-5



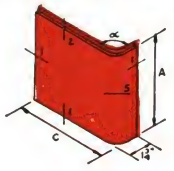
TYPE R-6



TYPE R-7



TYPE R-8

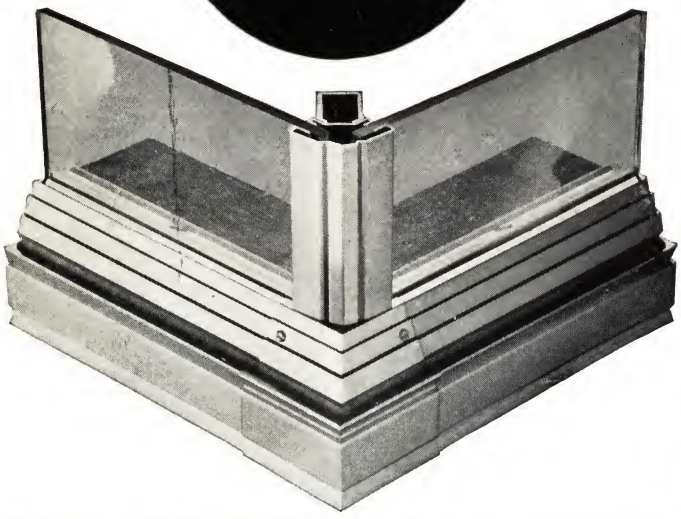


TYPE R-9
LEFT AND RIGHT RIGHT SHOWN

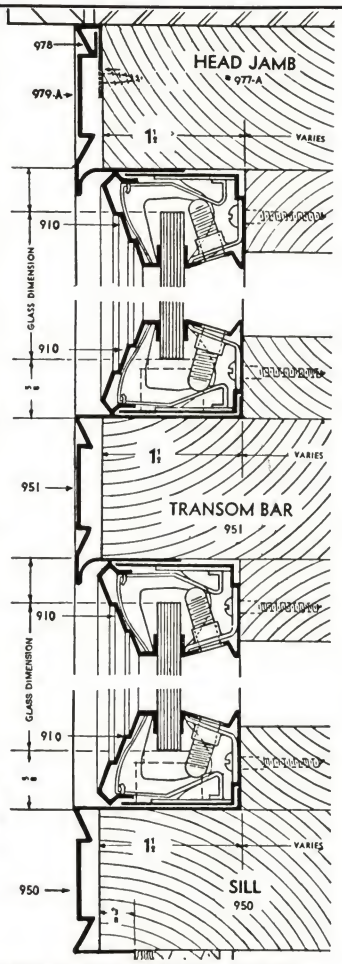
ALUMINUM WITH THE ALUMILITE FINISH.

ZOURI ROLLED CONSTR.

BRONZE. STAINLESS STEEL.



● Complete ZOURI cold-rolled store front construction is well known for its modern, attractive design, for its sharp lines and truly flat surfaces. Metals and finishes include aluminum with the Alumilite Finish, polished, satin or statuary bronze and stainless steel with satin or polished finish.

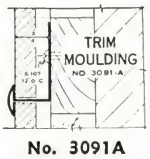


VERTICAL SECTION—Half Size

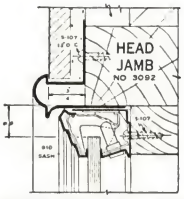
TRIM MOULDINGS
Quarter Size Details



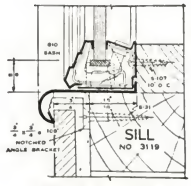
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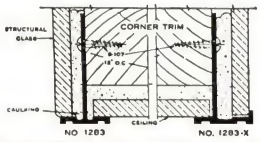
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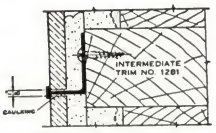
HEAD JAMB No. 3092



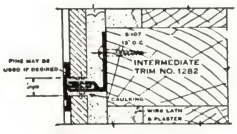
SILL No. 3119



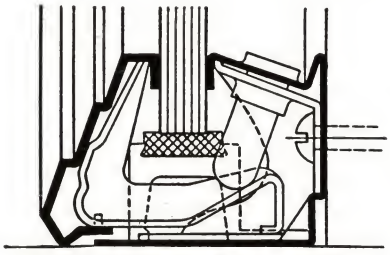
CORNER TRIMS—1283, 1283-X



TRIM No. 1281

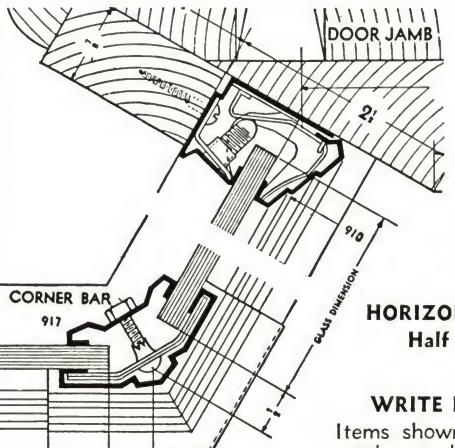


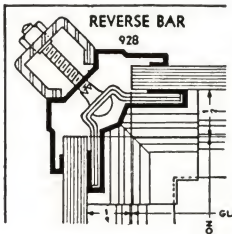
TRIM No. 1282

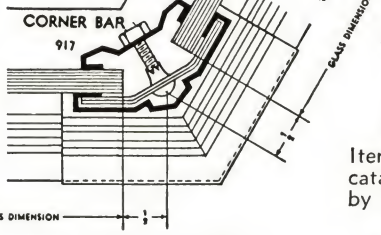


ROLLED SASH No. 910—Full Size

The famous ZOURI SAFETY KEY-SET SASH (No. 910) provides full cushion grip on glass. Face, gutter and mechanisms are sufficiently flexible to assure an absolutely safe and dependable glass setting, holding the plate glass in a secure, yet yielding grip—without rattling, without rigidity or binding. Ventilation and drainage are provided for if desired.

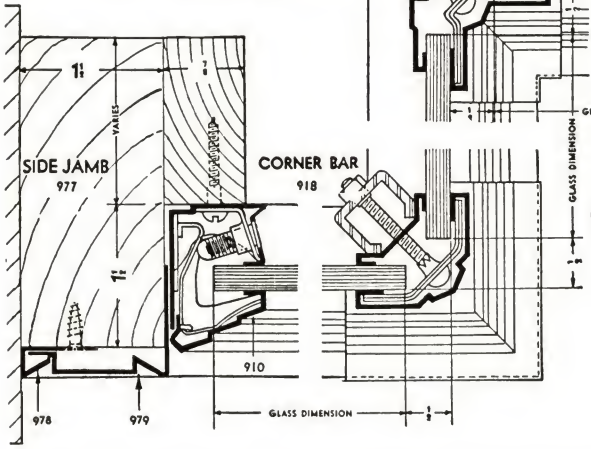






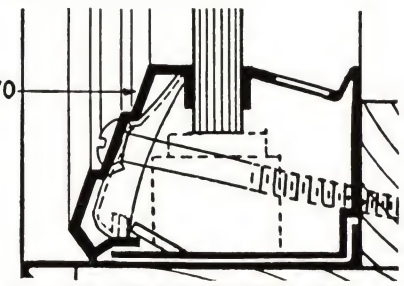
HORIZONTAL SECTION
Half Size Details

PATENTED AND PATENTS PENDING

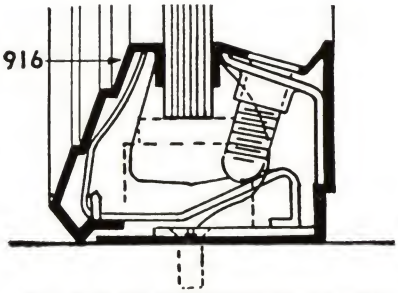


WRITE FOR F. S. DETAILS AND DATA

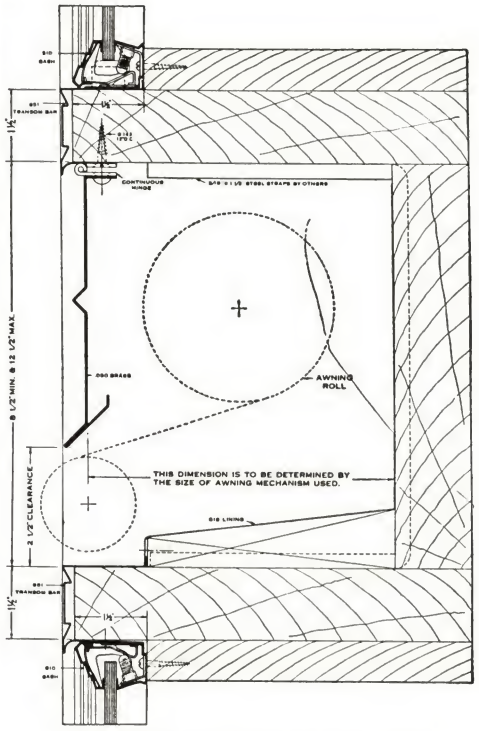
Items shown in quarter and half size in this catalog, and other items not shown are covered by full size details mailed on request.



No. 970 SCREW PRESSURE SASH



No. 916 SELF-SUPPORTING SASH

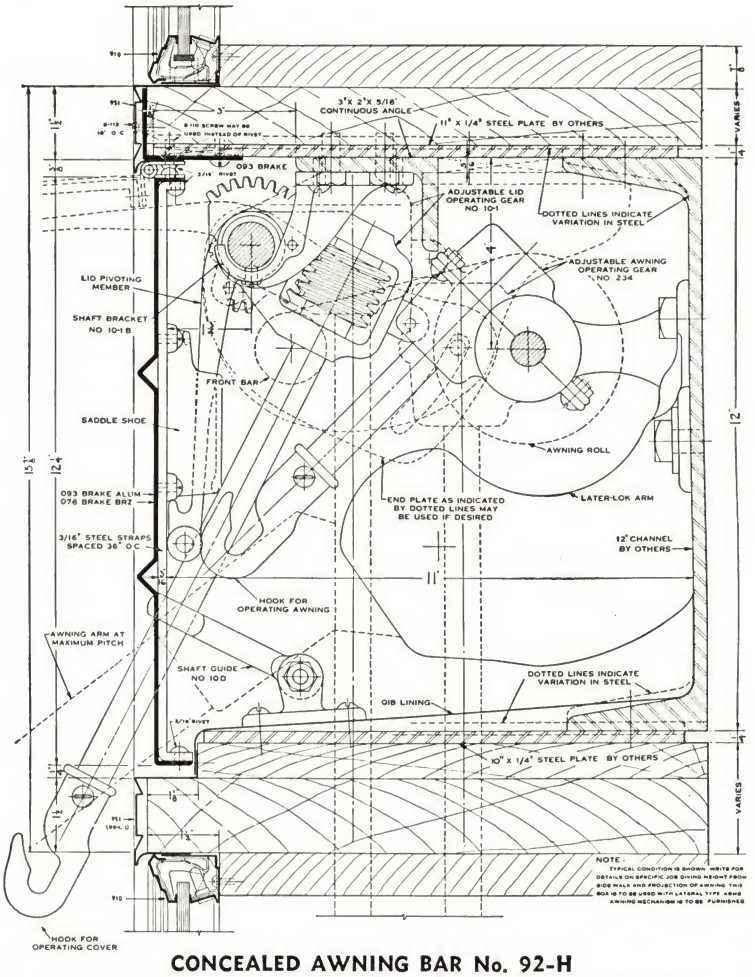


Quarter Size Details

PATENTED AND PATENTS PENDING

RECESSED AWNING BAR No. 958

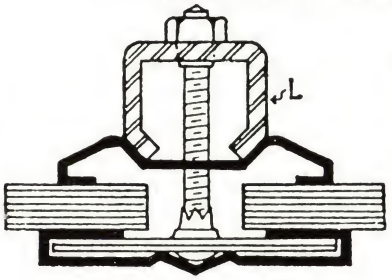
This modern awning bar hides awning roll in a recessed box. Furnished with hinged or stationary cover. For use with outrigger arms only.



CONCEALED AWNING BAR No. 92-H

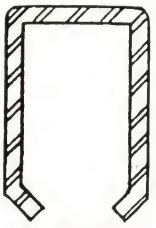
Protects awning roll when not in use, and completely conceals it from view. Also furnished with pivoted cover. For use with lateral arms only. Awning mechanism by others.

BARS AND STIFFENERS



DIVISION BAR No. 938
Shown with Light Stiffener

Stock angles for rolled bars are 90°, 100°, 105°, 110°, 115°, 120°, 135°, 150°, 160°, 180°. However, these bars may be obtained at any angle desired.



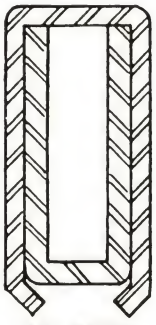
M—MEDIUM

TABLE OF BARS

IN ORDER TO FACILITATE THE SELECTION OF PROPER BARS WE SUBMIT A TABLE WHICH WE BELIEVE WILL BE OF GREAT ASSISTANCE IN ORDERING. WE ARE ALSO SUBMITTING A FORMULA AS AN EXPLANATION OF THIS TABLE.

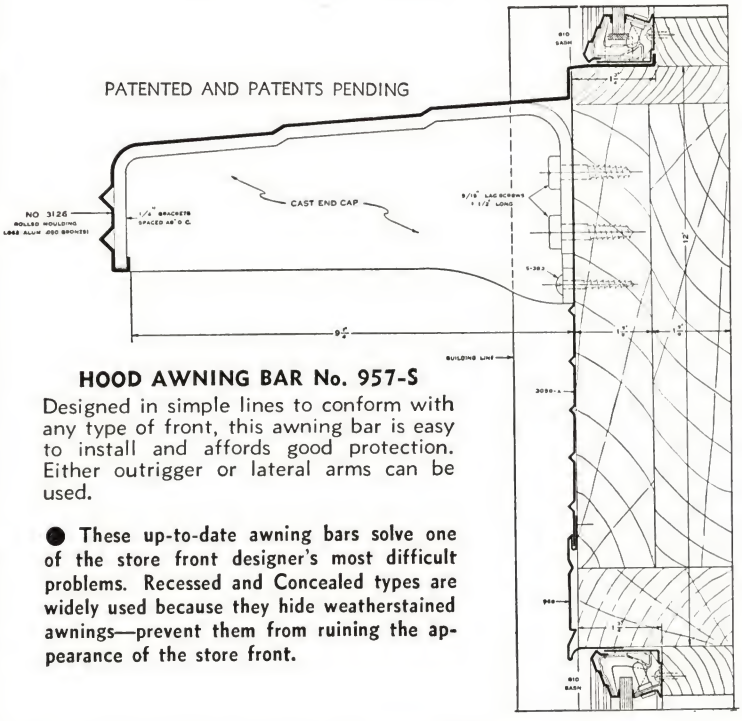
STIFFENER	A	B	C
LIGHT	60 In	100 Sq Ft	55 Sq Ft
MEDIUM	78 In	130 Sq Ft	70 Sq Ft
HEAVY	96 In	140 Sq Ft	72 Sq Ft
HEAVY-X	108 In	144 Sq Ft	80 Sq Ft

FORMULA—WE RECOMMEND ALL OF OUR BARS AS LISTED WHERE THE GLASS HEIGHT DOES NOT EXCEED THAT GIVEN IN COLUMN (A) AND THE COMBINED AREA OF THE 2 PLATES IS LESS THAN THE SQUARE FOOTAGE LISTED IN COLUMN (B) THE AREA OF 1 PLATE MUST NOT EXCEED THAT LISTED IN COLUMN (C).



HX—HEAVY with reinforcement X which is included only when specified.

PATENTED AND PATENTS PENDING



HOOD AWNING BAR No. 957-S

Designed in simple lines to conform with any type of front, this awning bar is easy to install and affords good protection. Either outrigger or lateral arms can be used.

● **These up-to-date awning bars solve one of the store front designer's most difficult problems. Recessed and Concealed types are widely used because they hide weatherstained awnings—prevent them from ruining the appearance of the store front.**

ALUMINUM WITH THE ALUMILITE FINISH

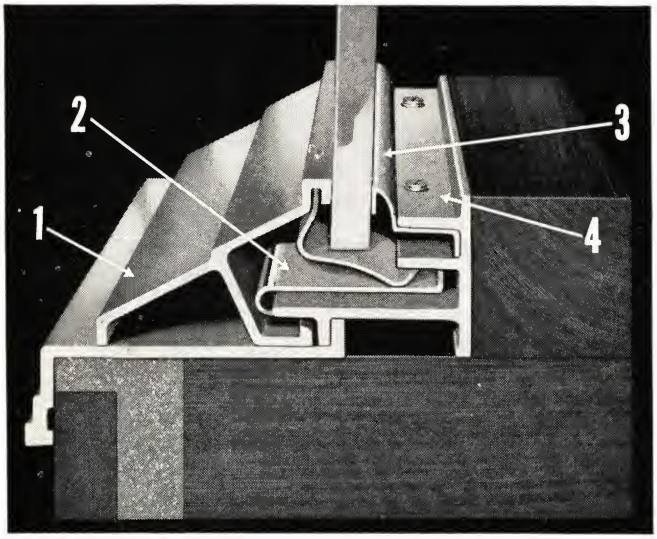
ZOURI EXTRUDED CONSTR.

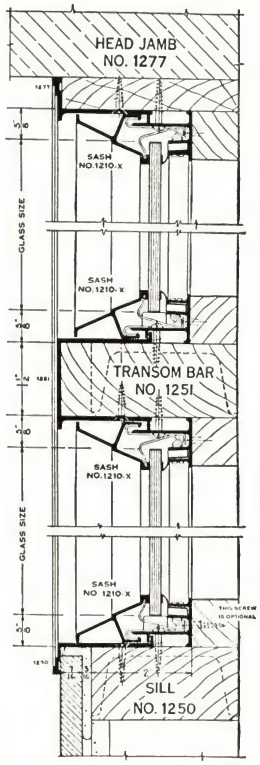
SATIN FINISH BRONZE



This complete ZOURI line of Extruded Store Front construction is unusually smart and modern. Lines are straight and true. Sash can be installed as a self-supporting unit, or used with wood backing. It can be mitered perfectly, but caps are supplied. Drainage and ventilation holes are made in sash when specified.

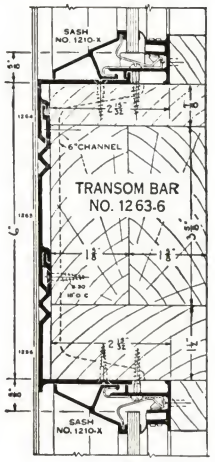
GLASS PROTECTION. Like the famous ZOURI Safety Key-Set Rolled Sash, Extruded Sash and Bars provide a full cushion grip on plate glass. This grip is firm and secure, is spread out along face of glass—equally effective on glass varying from $\frac{3}{16}$" to $\frac{5}{16}$". Yet it absorbs shocks and strains and provides an absolutely safe and dependable setting. No looseness, rattling, or rigidity. Illustration shows: 1. Attractive face moulding which distributes pressure along face of glass. Removable only from inside. 2. Flexible Spring Mechanism, and 3. Continuous Spring at back which provide cushion grip. 4. Wide, strong gutter.

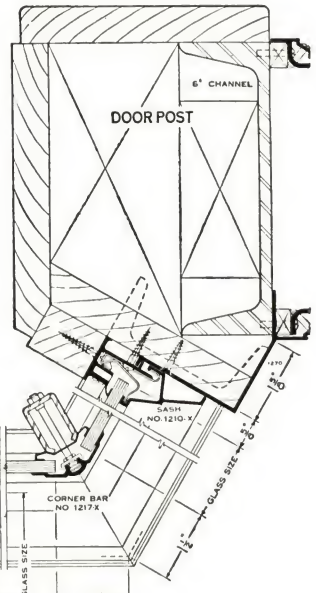




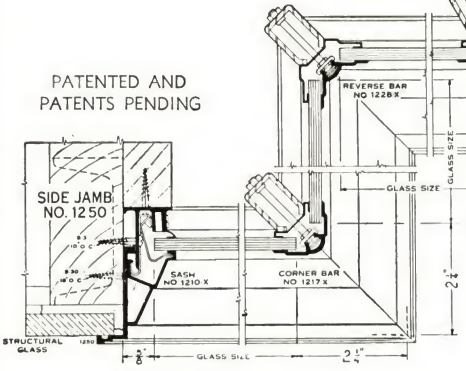
VERTICAL SECTION
Quarter Size

TRANSOM BAR 1263-6
Quarter Size

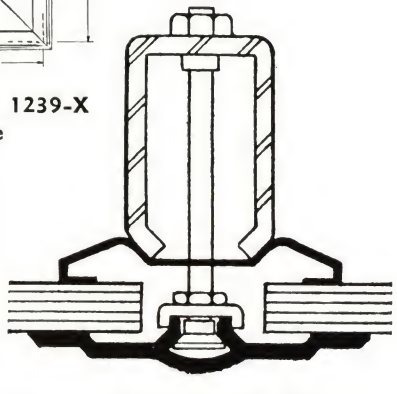




PATENTED AND PATENTS PENDING



HORIZONTAL SECTION
Quarter Size



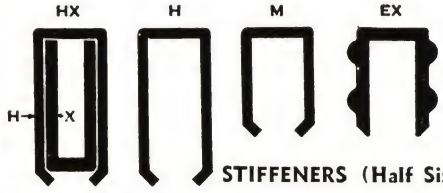
DIVISION BAR 1239-X
Full Size

TABLE OF BARS

IN ORDER TO FACILITATE THE SELECTION OF PROPER BARS, WE SUBMIT A TABLE WHICH WE BELEIVE WILL BE OF GREAT ASSISTANCE IN ORDERING. WE ARE ALSO SUBMITTING A FORMULA AS AN EXPLANATION OF THIS TABLE.

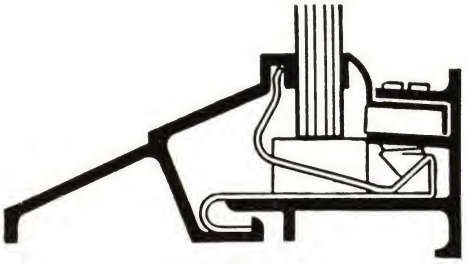
STEEL				ALUMINUM AND BRONZE			
BAR	A	B	C	BAR	A	B	C
LIGHT	60	100	55	M	60	100	55
MEDIUM	78	130	70	H	72	130	70
HEAVY	96	140	72	EX	78	135	75
HEAVY-X	108	144	80	HX	84	140	80

FORMULA: WE RECOMMEND ALL OF OUR BARS AS LISTED, WHERE THE GLASS HEIGHT DOES NOT EXCEED THAT GIVEN IN COLUMN (A) AND THE COMBINED AREA OF THE 2 PLATES IS LESS THAN THE SQUARE FOOTAGE LISTED IN COLUMN (B), THE AREA OF 1 PLATE MUST NOT EXCEED THAT LISTED IN COLUMN (C).



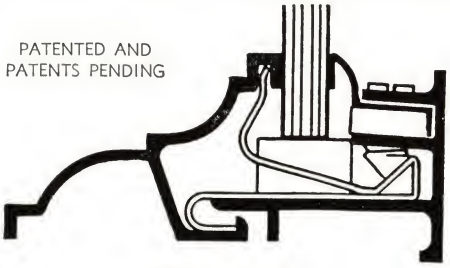
STIFFENERS (Half Size)

Zouri Extruded Bars are furnished from stock at 90°, 110°, 120°, 135°, and 160° angles — both Corner and Reverse — or to order at any angle.

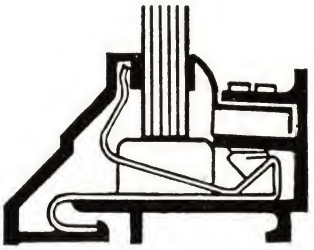


SASH 1210-X
USE SILLS 1250-Z, 1250, 1250-X

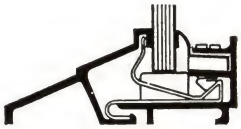
PATENTED AND
PATENTS PENDING



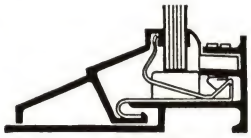
SASH 1210-Z
USE SILLS 1250-Z, 1250, 1250-X



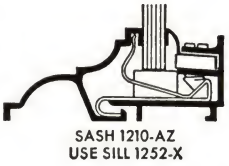
SASH 1210-Y
USE SILLS 1250-Z, 1250, 1250-X



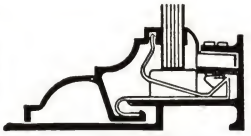
SASH 1210-AX
USE SILL 1252-X



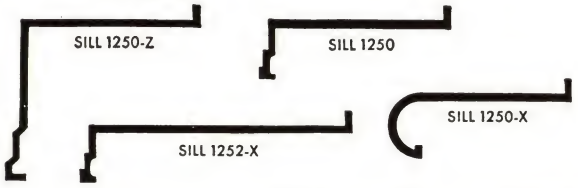
SASH 1210-BX

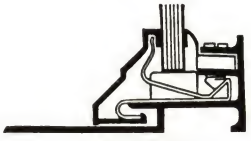


SASH 1210-AZ
USE SILL 1252-X



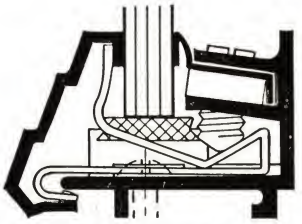
SASH 1210-BZ





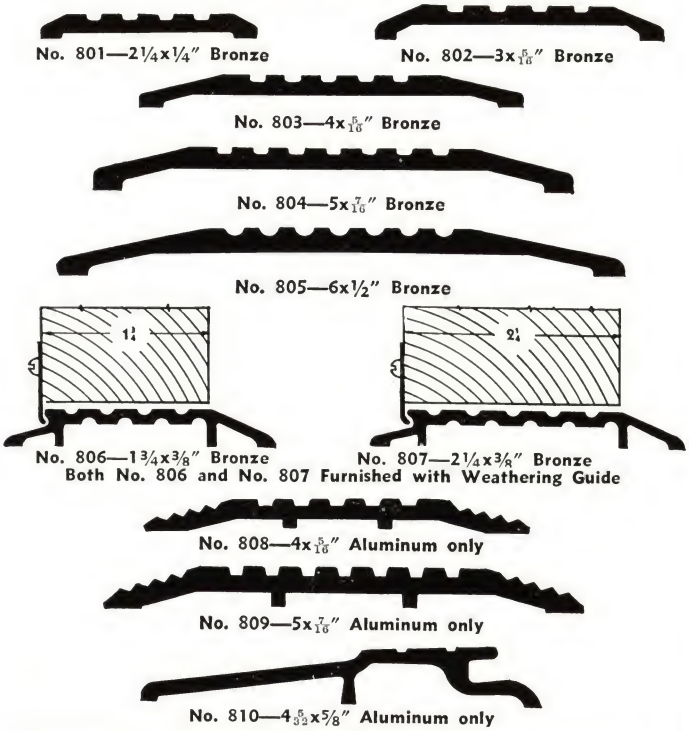
SASH 1210-BY

SASH AND
SILLS SHOWN
HALF SIZE



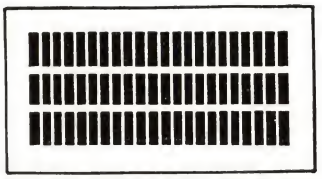
SASH 1210-8
USE SILLS 1250-Z, 1250, 1250-X
Full Size Details

THRESHOLDS (Half Size)

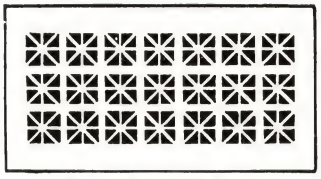


GRILLES

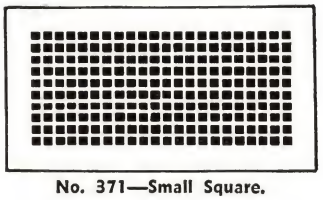
Stamped and cast grilles furnished in bronze, aluminum, or stainless steel. Stamped grilles are made in .050 and .109 gauge metal (.050 only in stainless steel).



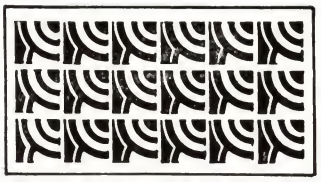
No. 370—Rectangular. Stock sizes 11x5", 18x9", 24x10".



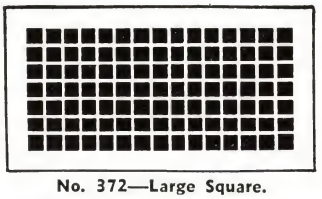
No. 374—Union Jack.



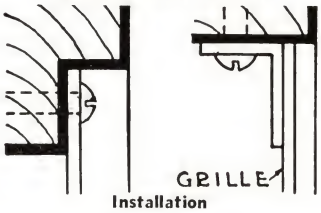
No. 371—Small Square.



Special Design—Cut or Cast to Architect's Requirements.



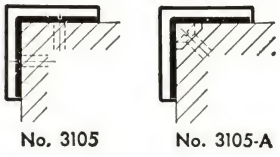
No. 372—Large Square.



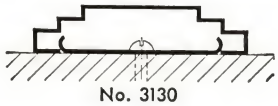
Installation

SNAP-ON MOULDINGS (Half Size)

In either aluminum, bronze or stainless steel with galvanized steel core.



No. 3105 No. 3105-A



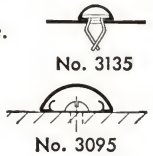
No. 3130



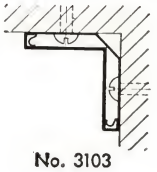
No. 3110



No. 3097



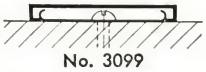
No. 3135 No. 3095



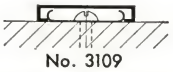
No. 3103



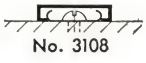
No. 3101



No. 3099



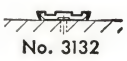
No. 3109



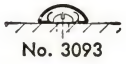
No. 3108



No. 3107



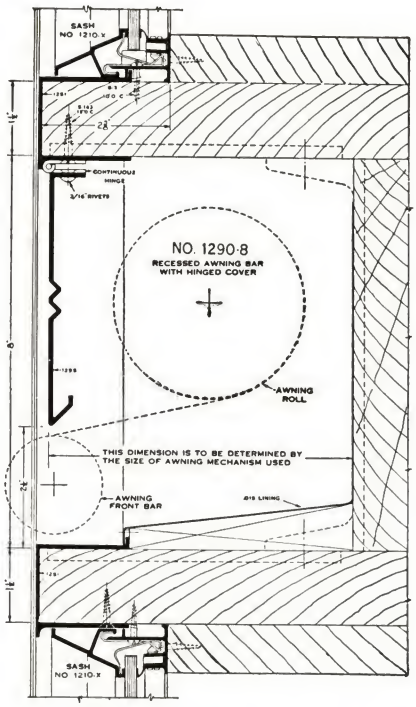
No. 3132



No. 3093

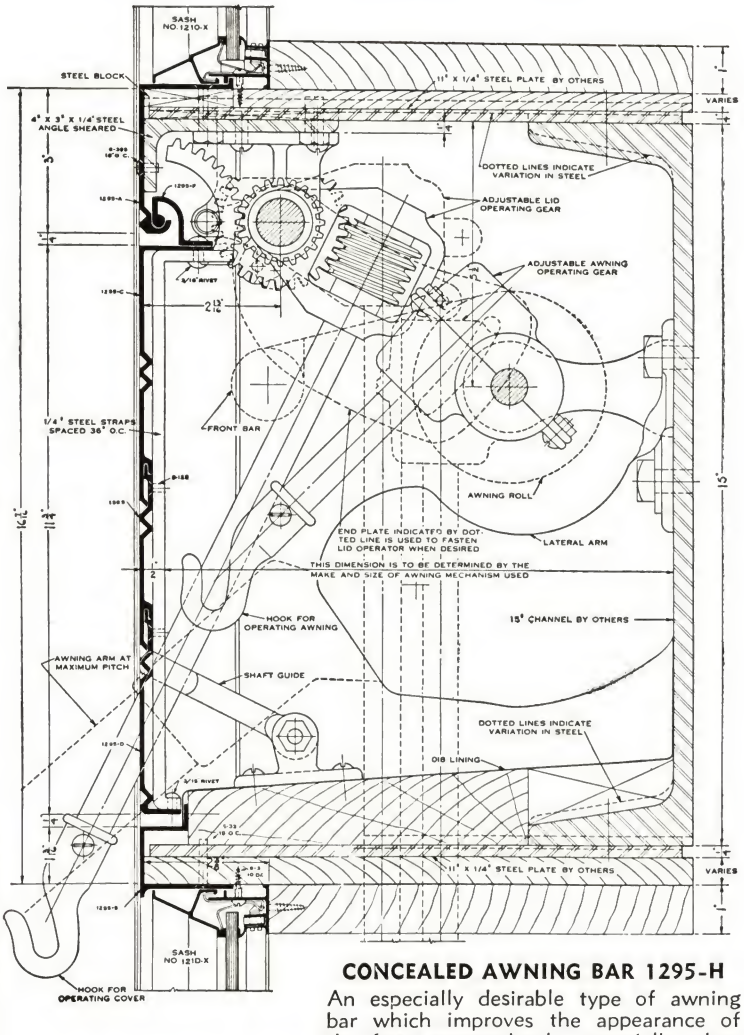


No. 3133



Quarter Size Details

PATENTED AND PATENTS PENDING

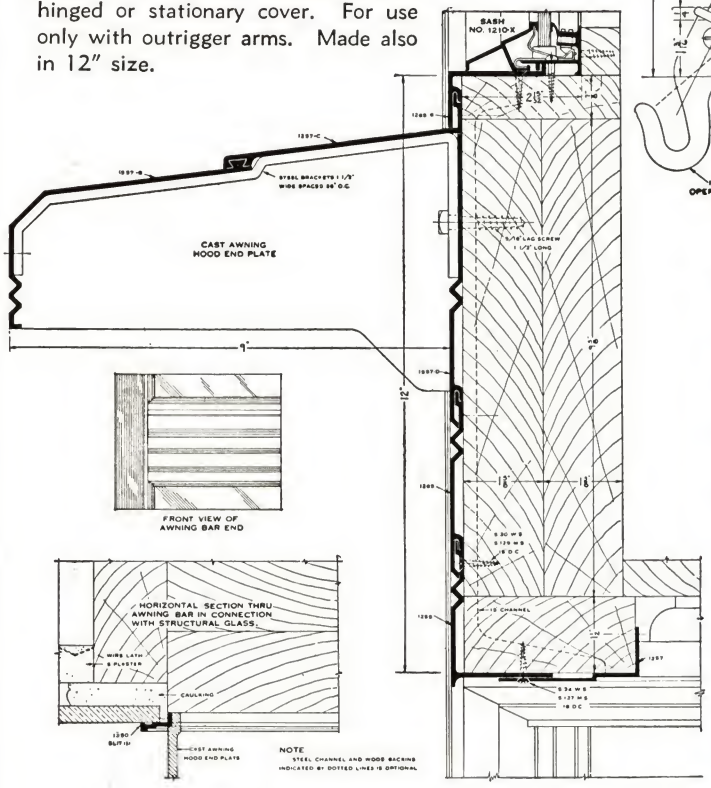


RECESSED AWNING BAR 1290-8

Hides awning roll in recessed box, back of building line. Available with hinged or stationary cover. For use only with outrigger arms. Made also in 12" size.

CONCEALED AWNING BAR 1295-H

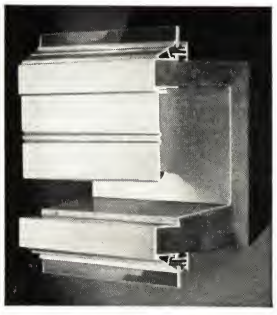
An especially desirable type of awning bar which improves the appearance of the front tremendously, especially when awning is not in use. Completely conceals roll. For use with lateral arms only. Pivoted cover also available.



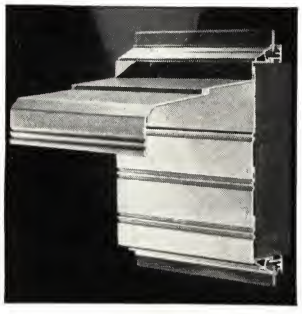
HOOD AWNING BAR 1257

This is a very distinctive hood type awning bar, and has proved very effective in use. For either lateral or outrigger arms.

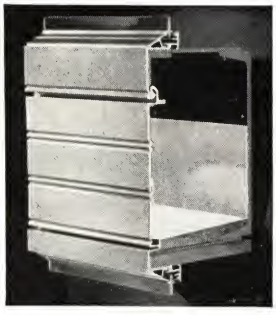
Details of DOOR JAMB MOULDINGS will be sent on request.



No. 1290-8

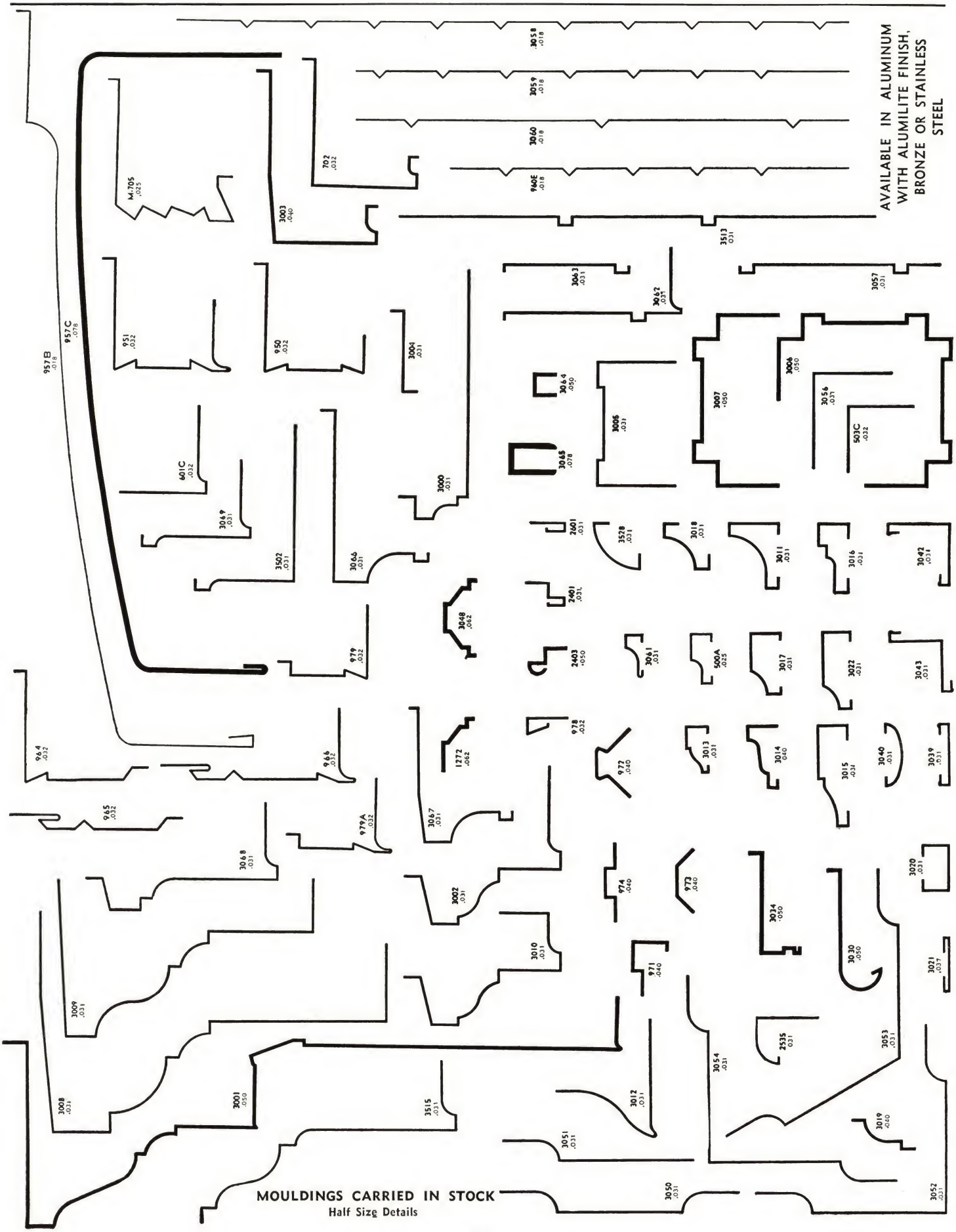


No. 1257

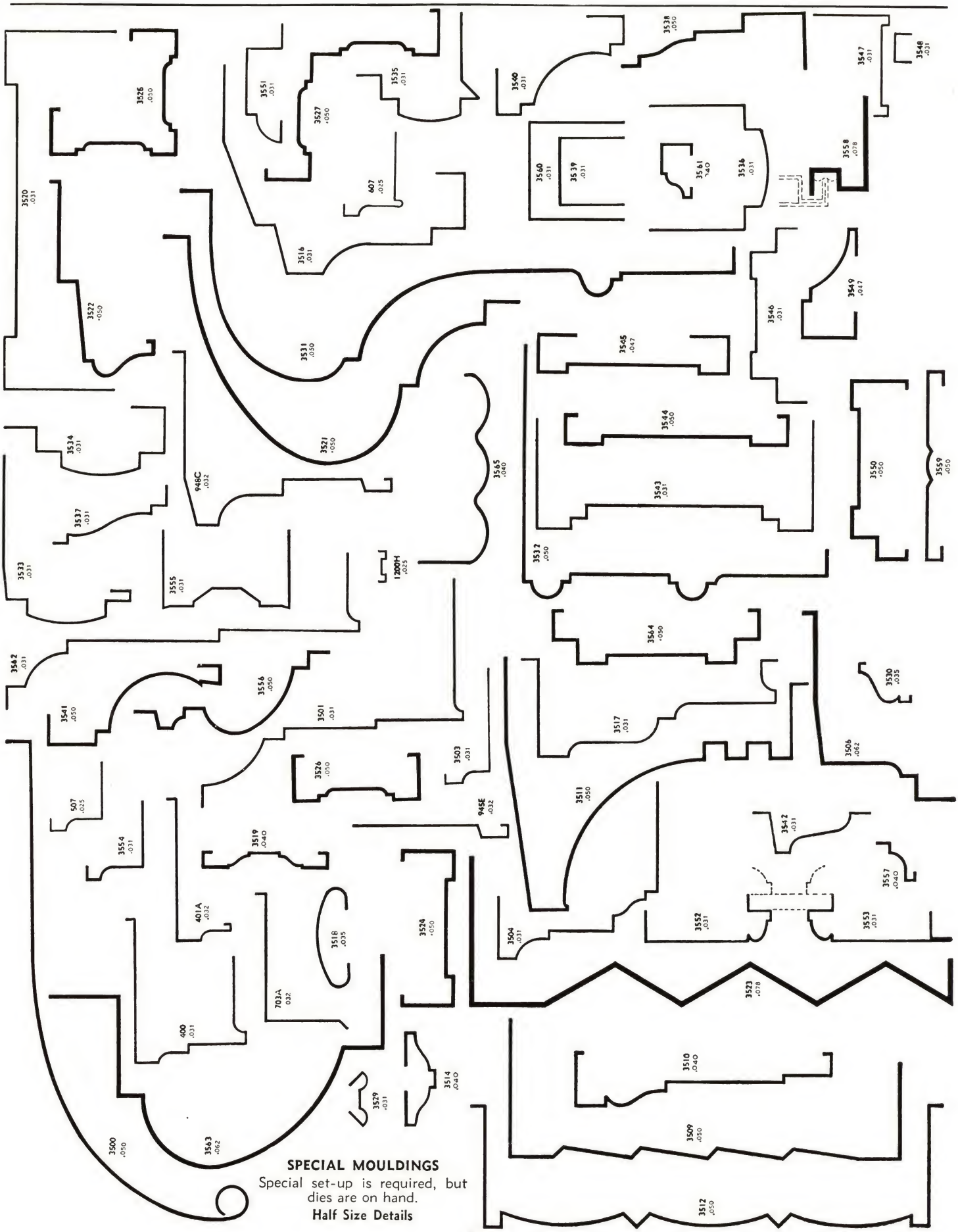


No. 1295-H

The three types of awning bars detailed on this page are very attractive and practical for any type of front. They become valuable decorative features and, in addition to contributing interesting highlights and shadow lines, they completely or partially hide unsightly awning rolls when not in use.



MOULDINGS CARRIED IN STOCK
Half Size Details



SPECIAL MOULDINGS

Special set-up is required, but dies are on hand.

Half Size Details

SPECIAL METAL WORK

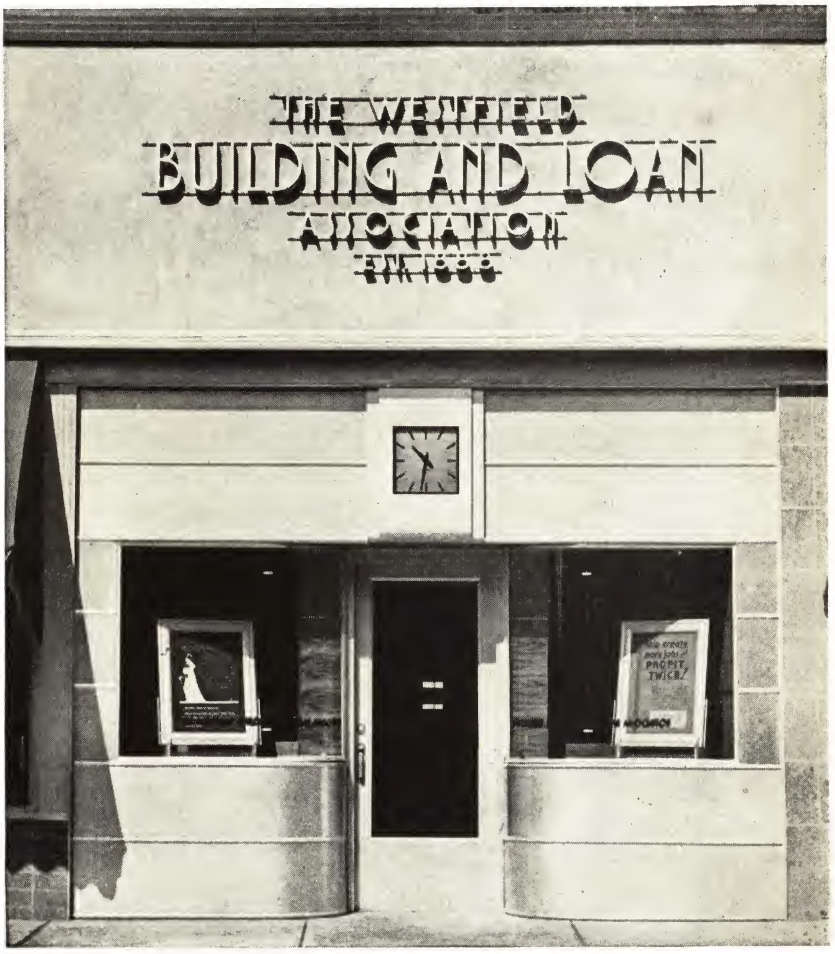








ZOURI sign letters are recommended for architectural beauty and visibility. Fabricated to special details.



ZOURI craftsmen have had wide and varied experience in fabricating all types of special metal work. Such work includes metal sign letters, entrance doors, (also available in standard types) cast ornaments, bulkheads, pilasters, metal paneling, and special mouldings, shapes, and decorations. Write for complete new illustrated booklet on ZOURI DOORS AND ENTRANCES.

ADDITIONAL INFORMATION AVAILABLE ON:
SASH, BARS, AWNING BARS,
TRANSOM BARS, TRIM MOULDINGS,
GRILLES, THRESHOLDS,
DOOR JAMBS,
HINGED AND PIVOTED
VENTILATORS,
POSTER FRAMES,
SHOWCASE DOORS,
PORCELAIN ENAMEL PANELS,
RUSTLESS METAL DOORS
REED MOULDINGS,
CAST ORNAMENTS.



ZOURI Metal Entrance Doors and pilasters create an inviting entrance for this restaurant.



ZOURI entrance door, special sign, and muntins.

WRITE ZOURI STORE FRONTS, NILES, MICHIGAN, FOR FURTHER DATA

DATA ON RUSTLESS METAL STORE FRONTS BY

ZOURI

- COMPLETE ROLLED AND EXTRUDED STORE FRONT CONSTRUCTION
- ARCHITECTURAL PORCELAIN ENAMEL FACING PANELS
- DOORS AND ENTRANCES, SIGN LETTERS, SPECIAL METAL WORK

1939

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- SECTION - 20

Section Number 1 / 5 Catalog Number

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ALL-METAL PARTITION CO., INC.

TELEPHONE
CHelsea 2-4020-1

FACTORY AND OFFICE
144-150 West 18th Street, NEW YORK, N. Y.

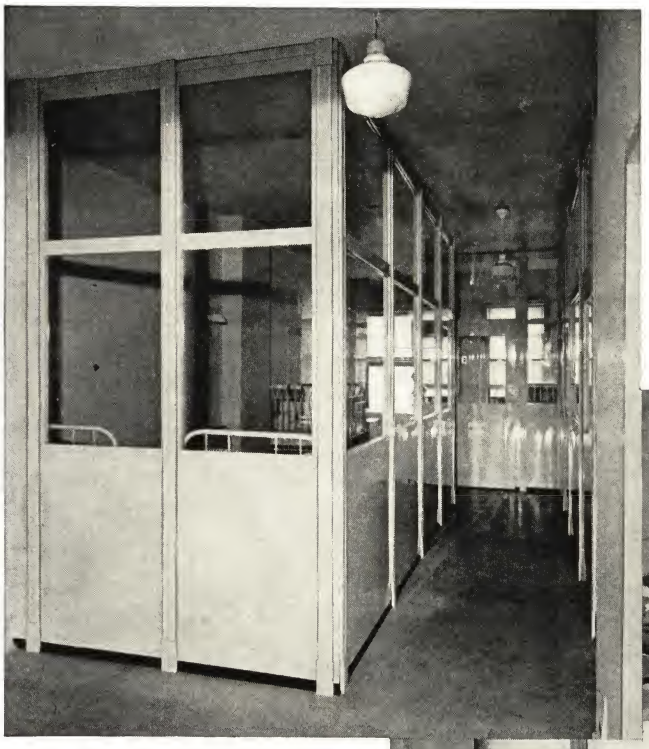
SALES AGENTS

JERSEY CITY, N. J., Atlas Steel Products Co., 19-21 Tuers Avenue
PHILADELPHIA, PA., Kelly Building Products, 1418 Walnut Street
WASHINGTON, D. C., Capitol Products Co., 1222 Connecticut Avenue
BOSTON, MASS., J. G. Waxman, 72 Granite Street

For "All-Metal" Toilet Partitions, see File Index

"ALL-METAL" OFFICE PARTITIONS

The "All-Metal" line of partitions (two of which are illustrated herewith) combine compactness with unusual strength and rigidity. The full tubular stiles, the welding together of various members and the use of a heavy continuous channel under cornice all go toward this extra strength and ruggedness. They are economical in cost and are readily taken down and rearranged. They are simple and neat in design and attractive in appearance.



Above: A semi-flush partition, strong, rugged in construction, specially designed for insulation and sanitation.

Right: An installation of our standard Type "D" partition highly recommended for general office use.

Service

The "All-Metal" Service Department will always co-operate and advise on partition problems and gladly submit estimates. Catalogue sent on request.

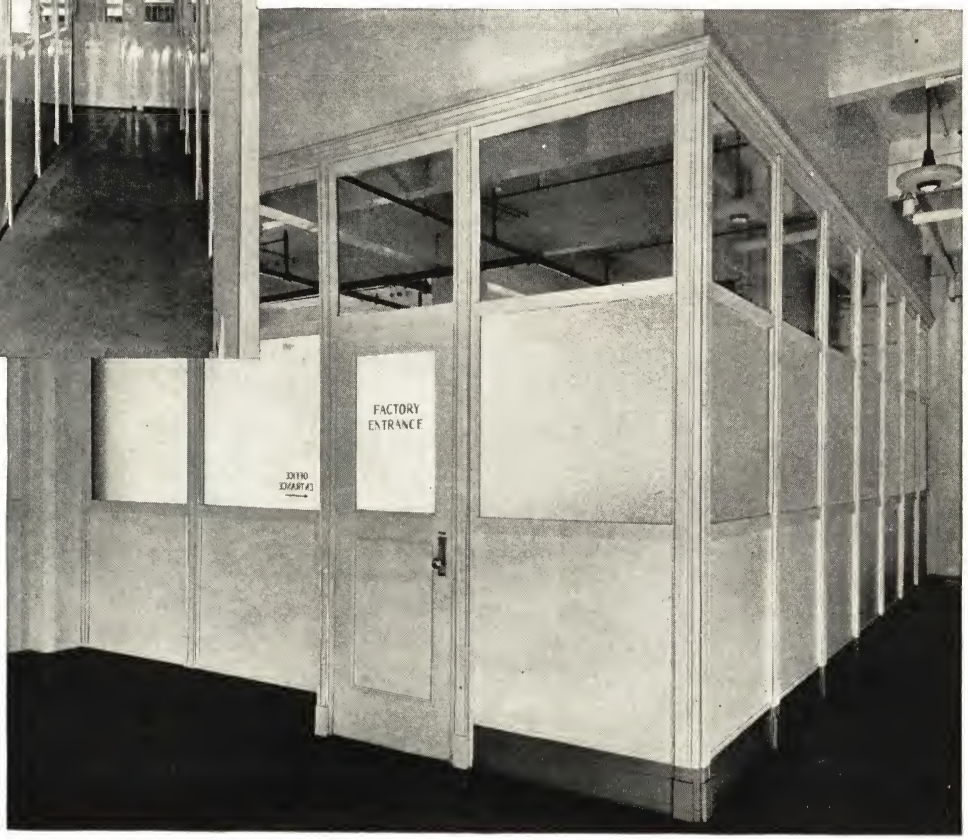
Construction

"All-Metal" Partitions are built of furniture steel in interchangeable units of various widths and heights. Door sections, are also interchangeable with sections of same size. Frames are of 1½-in. square tubular steel. Panels, either insulated or single, are set into the tubes for the entire depth of the tube. Base, chair rail, and top rail are securely welded in. Sections are securely held together by spacer clips which also act as a clamp for pilasters. Cornices are continuous and held rigidly in place by concealed fastenings. No exposed bolts or screws used in erection.

Types and Finishes

There are six different types of "All-Metal" Partitions, each with its distinct use and application. We will gladly submit details, prints, etc., upon request.

Partitions can be had in any of the wood grain finishes, or standard colors in baked enamel.



ART METAL CONSTRUCTION COMPANY

Manufacturers of Art Metal Partitions
JAMESTOWN, NEW YORK

BRANCH OFFICES

BALTIMORE, MD., 201 Union Trust Building
BOSTON, MASS., 12 High Street
CHICAGO, ILL., 208 W. Adams Street
CINCINNATI, OHIO, 1107 Union Central Building
CLEVELAND, OHIO, 220 Hanna Building
DETROIT, MICH., 333 State Street
HARTFORD, CONN., 75 Pearl Street
NEW YORK, N. Y., 369 Broadway
PHILADELPHIA, PA., 1107 Architect's Building
PITTSBURGH, PA., 1215 Plaza Building
WASHINGTON, D. C., 301 Southern Building
LONDON, ENGLAND, 199-203 Buckingham Palace Road

For Metal Doors and Trim, Kitchen Cabinets, Bank, Office and Hospital Equipment, Museum Cases, see File Index

ADVANTAGES OF ART METAL PARTITIONS

Art Metal
Jamestown, New York
U.S.A.

Experience has proved that the welded "floor-to-cornice-unit" construction of Art Metal Partitions gives the greatest degree of durability and rigidity. It also greatly reduces erection costs by minimizing the number of field operations.

(1) Interchangeability of units, or units and doors with a minimum of labor, waste and noise.

(2) One hundred percent salvage in re-locating partition.

(3) Posts equipped with floor leveling and (with ceiling height) ceiling pressure bolts, rendering the trueing up of the partition a simple task and affording positive anchorage without the labor and muss of drilling at floor and ceiling. The pressure bolt also makes dis-assembly and re-location of the partition a simple matter.

(4) Removable snap-on post covers conceal all fastenings on panels to posts.

(5) A continuous 11 gauge channel insulated from the floor by continuous rubber stripping makes a firm, resilient foundation and renders the base absolutely water-tight.

(6) Three-way concealed wire raceways in the base of both unit faces provide separate compartments for telephone and high and low tension wires. Access to these compartments is made simply by an easily removable snap-on base member.

(7) Cornices, posts and all moulded members are cold drawn shapes having absolutely sharp arrises, not found in pressed shapes.

(8) Ship joints at wall and ceiling fillers permit a 1-inch adjustment either way.

(9) The finish is the usual high grade Art Metal finish and a dip coat protects all interior surfaces from corrosion.

FIVE TYPES OF ART METAL VERTICAL UNIT PARTITIONS

Each of the five types of Art Metal Vertical Unit Partitions is designed to solve a particular problem in office subdivision and noise insulation:

Type "K"—A fully noise insulated, 3 in. thick partition of the flush wall type having invisible posts. The two faces being independent of each other permit an increase of thickness and the use of additional insulation to meet unusual noise conditions. Single faces may be used against walls as matching wainscoting. Units are interchangeable with other units and doors. It is we believe the most adaptable partition ever designed.

Type "M"—A fully noise insulated 3 in. thick partition of the semi-flush type. This partition has all the sound insulating qualities of the Type "M". It however has a slightly projecting cornice and the posts are of the visible type. Any one of these types of post is optional with this partition. Units are interchangeable with other units and doors.

Type "D-1½"—An insulated partition with flush panels 1¾ in. thick, visible posts and cornice. A moderately priced partition designed for use when noise conditions are not extreme. Units are interchangeable with other units and doors.

Type "D-1"—An insulated partition with visible posts and cornice designed for use where conditions do not require complete insulation against noise. The lower panels of each unit and door are ⅜ in. thick of double thickness steel, recessed and insulated. Glass or steel is optional in all panel openings. Units are interchangeable with other units and doors.

Type "R"—An economical partition designed for subdivision of industrial and commercial interiors. The paneling as well as the wall and ceiling fillers are of single thickness steel. Light casements, wire mesh, perforated metal glass or steel may be used in any of the panel openings. Units are interchangeable with other units and doors.

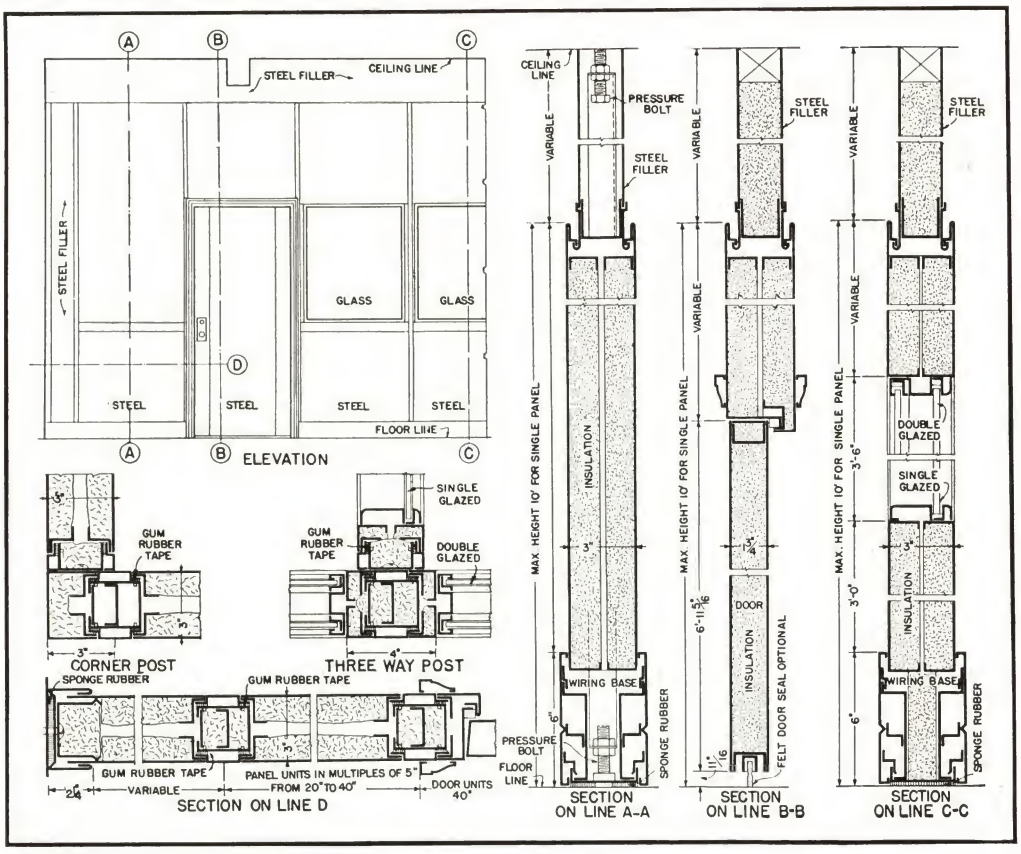




FULLY INSULATED • FLUSH WALL TYPE • 3 INCHES THICK
Hairline Joints, Invisible Posts, No Cornice, Ceiling Height Only

TYPE "K"

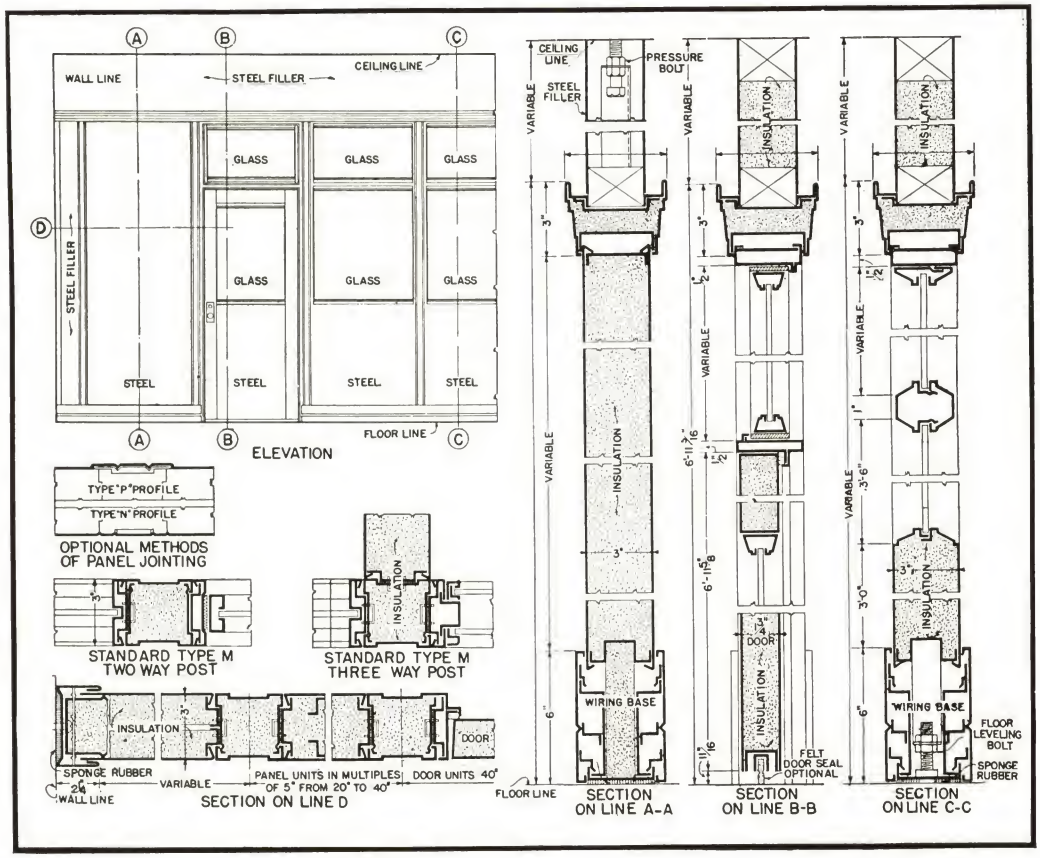
Solid insulated flush panels, 3 in. thick or with single or double glazed lights. Test proved more sound resisting than 4-in. tile wall. Thickness may be increased for unusual noise conditions. Panels hung by concealed fastenings. Hairline only visible between panels. Wainscoting at wall formed by using one face of panels and posts. Wood veneer over steel, marble or plywood may be used as facing. Floor leveling ceiling pressure bolts afford positive adjustment. Continuous channel on rubber stripping give water-tight bearing at floor. Three-way raceway in both panel faces make wiring easy and accessible. Doors interchangeable with 40-in. panels. Concealed transom operator. Railings in two heights. High grade finish. Dip coat protects inside against corrosion. Partition 100% re-usable.



FULLY INSULATED • SEMI-FLUSH TYPE • 3 INCHES THICK
Visible Posts and Cornice, Ceiling and Cornice Height

TYPE "M"

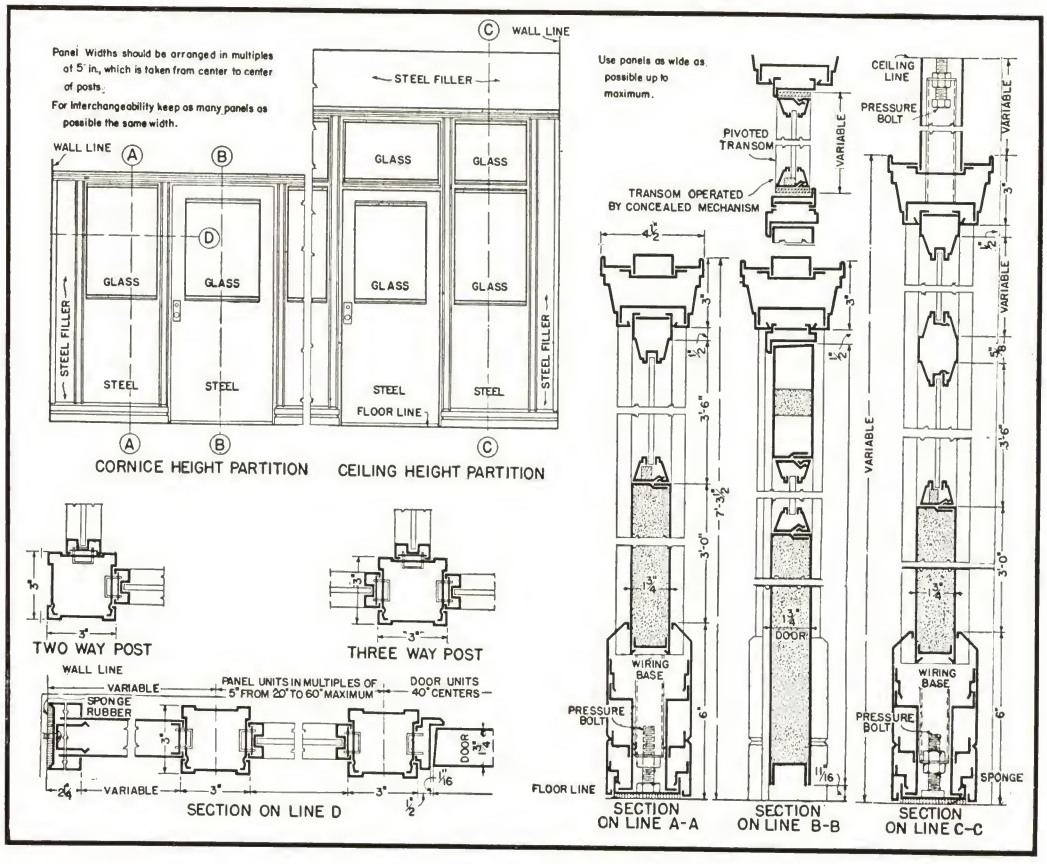
Fully insulated 3 in. thick flush panels. Visible posts with three optional profiles. Single or double glazed with snap-on mouldings if specified, no screw heads visible. Post panel covers conceal connections. Floor leveling and ceiling pressure bolts at posts afford positive adjustment. Continuous channel on rubber stripping give water-tight bearing at floor. Three-way raceway in both panel faces make wiring easy and accessible. Doors interchangeable with 40-in. panels. Concealed transom operator. Cornices continuous. Railings in two heights. High grade finish.



INSULATED • RECESSED UNIT TYPE • 1¾ INCHES THICK
Visible Posts and Cornice, Flush Units, Ceiling and Cornice Height

TYPE "D-1½"

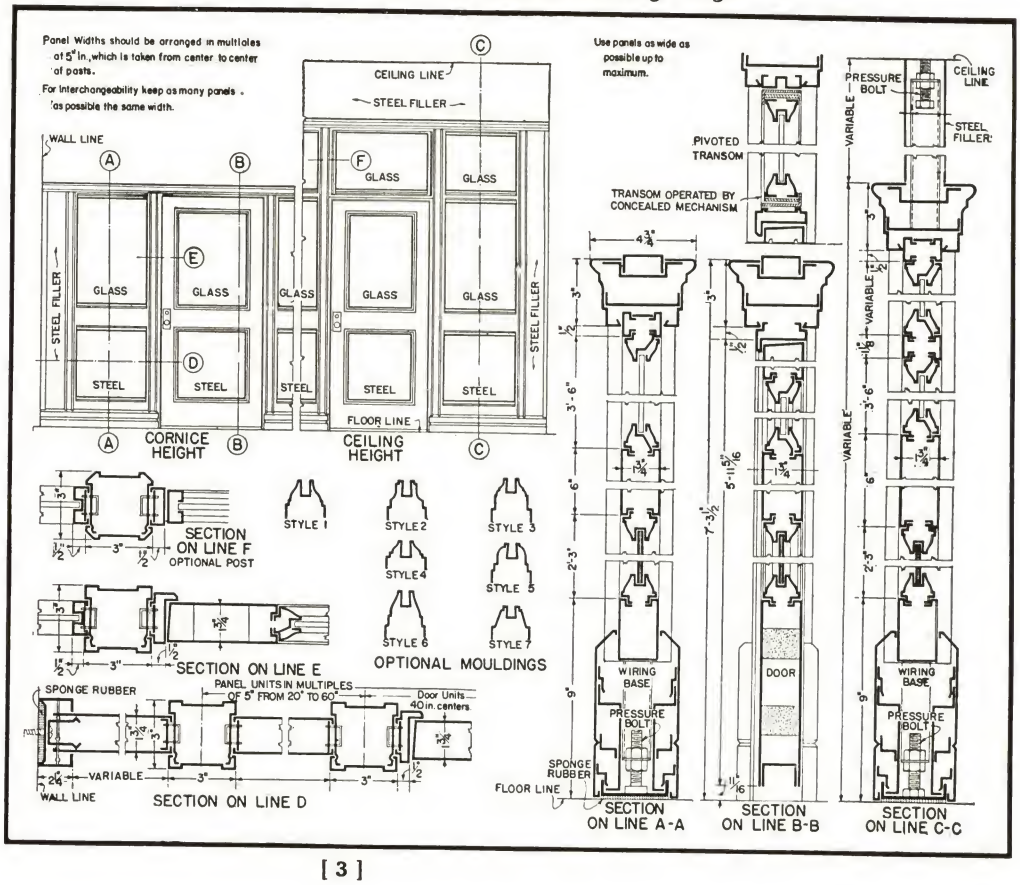
Insulated flush panels 1¾ in. thick. Glass or steel optional in any panel. Any one of seven panel mouldings (see drawings next page) may be used. Mouldings Nos. 1–6 held in place by concealed keys and screws. No. 7 (Standard) is a snap-on type—has no screws. Post cover panels with square or chamfered corners clamp on concealing all connections. Floor leveling and ceiling pressure bolts afford positive adjustment. Continuous channel on rubber stripping make water-tight bearing at floor. Three-way raceway in both panel faces make wiring easy and accessible. Door interchangeable with 40-in. panels. Concealed transom operator. Railings in two heights. High grade finish. Partition 100% re-usable.



SOUND DEADENED • RECESSED UNIT TYPE • 1¾ INCHES THICK
Visible Posts and Cornice, Paneled Units, Cornice and Ceiling Height

TYPE "D-1"

Insulated, recessed panels ⅜ in. thick. Glass or steel optional in any panel. Visible posts. Any one of seven panel mouldings shown may be used. Mouldings Nos. 1–6 held in place by concealed keys and screws. No. 7 (Standard) is a snap-on type—has no screws. Post cover panels with square or chamfered corners clamp on concealing all connections. Each post has a floor leveling bolt and (with ceiling height) a ceiling pressure bolt affording positive adjustment. Continuous channel on rubber stripping make water-tight bearing at floor. Three-way raceway in both panel faces make wiring easy and accessible. Door interchangeable at 40-in. panels. Concealed transom operator. Railings in two heights. High grade finish. Partition 100% re-usable.

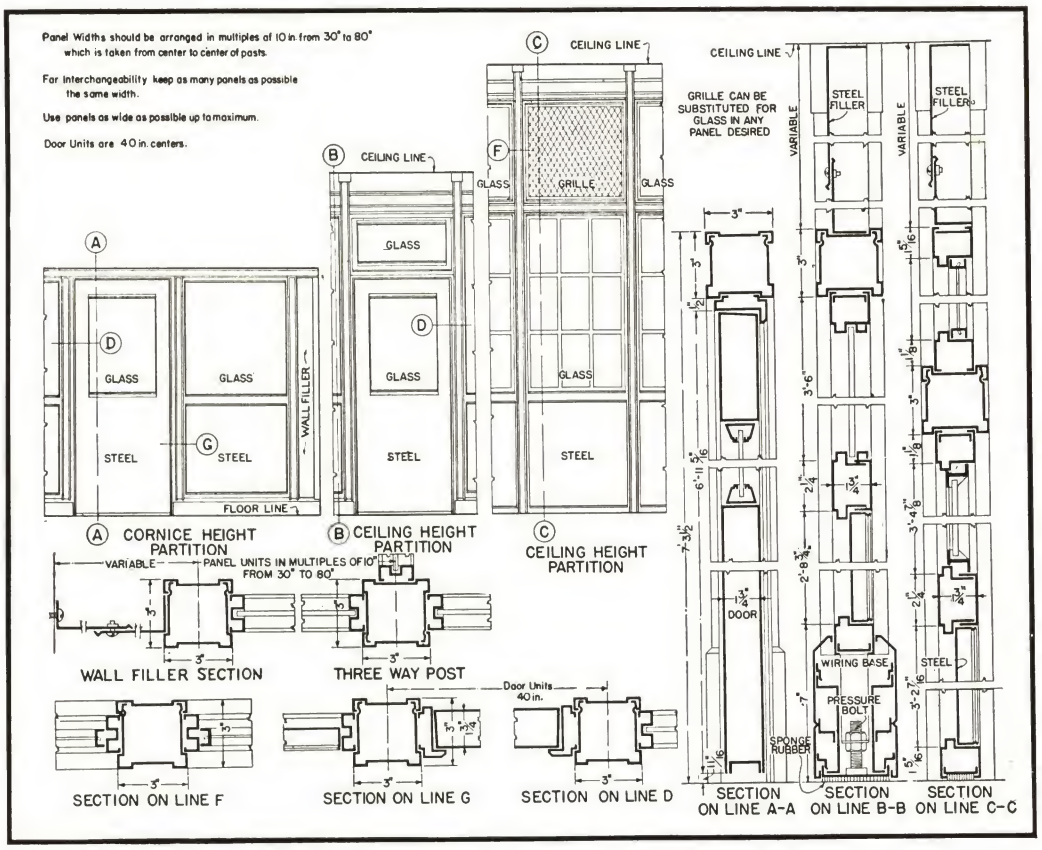


INDUSTRIAL PARTITION • SINGLE THICKNESS STEEL PANELS AND FILLERS

Ceiling and Cornice Height

TYPE "R"

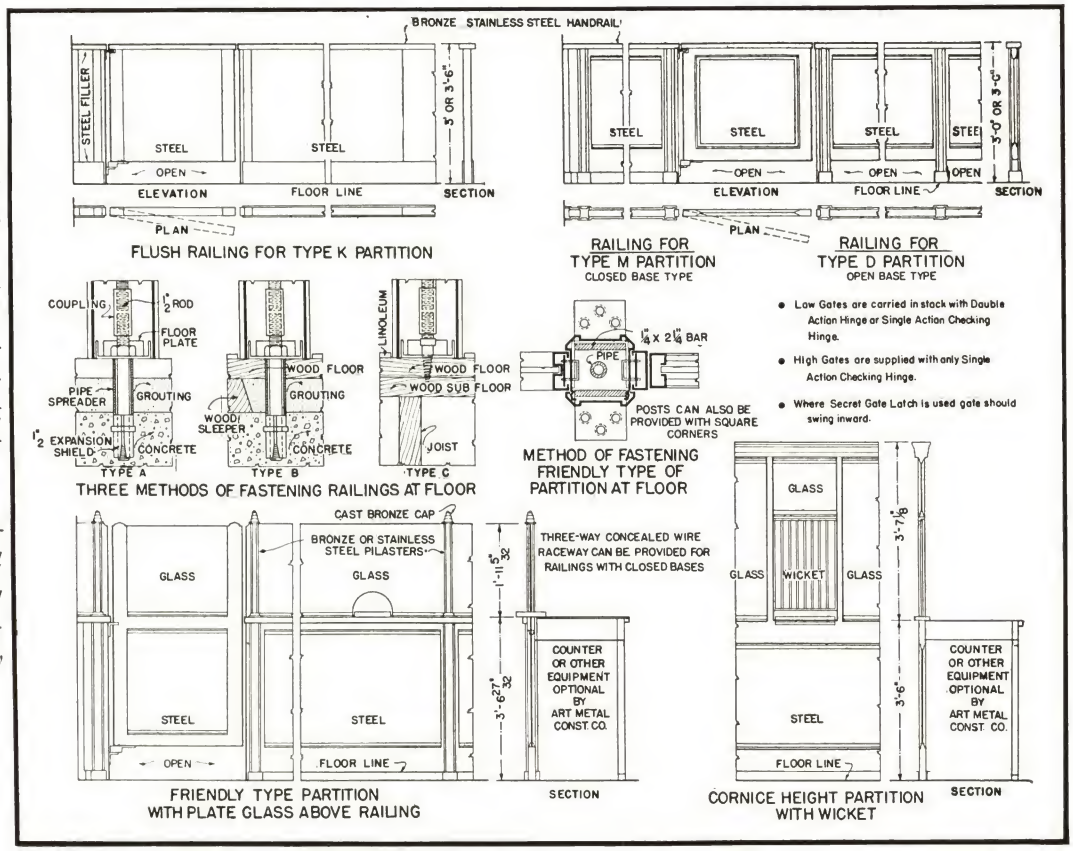
Designed for industrial use. Light weight casements, wire mesh, perforated metal, glass or steel panels can be used in any opening. Furnished standard it runs down to floor with small horizontal floor member. Each unit is shop welded floor to cornice. Units are keyed to posts. Posts four-way type have square corners. Doors furnished in any style are interchangeable with 40-in. unit. Regular three-way raceway in both panel faces can be furnished if desired. Floor leveling bolts afford positive adjustment. Wall fillers, single thickness steel. Ceiling fillers, single thickness steel or mineral board. Cornice furnished with all heights. High grade finish. Railings in two heights.



ART METAL RAILINGS

Railings to match the partition types, embody the construction features of the respective partitions. Railings have closed or open bases in 36 or 42⅞-in. heights. A popular railing is the combination of the 42⅞-in. railing with a 23⅛-in. upper glazed section.

This Friendly Type Railing is used in banks and insurance offices requiring a greater degree of privacy than that afforded by low railings.



ART METAL CONSTRUCTION COMPANY

SPECIFICATIONS

ART METAL VERTICAL UNIT PARTITIONS

Gauges Specified are U.S. Standard

Type	Used	Unit sizes	Panel thickness	Panel reinforcements	Posts	Door sizes	Door or gate panels	Door and transom frames	Base
"K"	Offices, Schools, Corridors, Lobbies, Stores, Wainscoting, Laboratories.	20″, 25″, 30″, 35″, 40″	3″ Standard may be increased, reinforced and insulated. 18-gauge steel.	18-gauge steel	2⅜″ Standard 13-gauge steel. Adjustable in height, concealed.	3′ x 7′ 1¾″ thick 18-gauge steel. Flush.	1¾″ thick insulated 18-gauge steel.	18-gauge cold rolled steel with felt strikes.	6″ High 3-way lay-in-wire Adjustable 16-gauge steel.
"M"	Offices, Schools, Corridors, Lobbies, Stores, Wainscoting, Laboratories.	20″, 25″, 30″, 35″, 40″	3″ Standard reinforced and insulated 20-gauge steel.	20-gauge steel	3″ Square 18-gauge steel. 3 optional profiles.	3′ x 7′ 1¾″ thick 18-gauge steel. Flush or Paneled.	⅜″ thick insulated 20-gauge steel.	18-gauge cold rolled steel with felt strikes.	6″ High 3-way lay-in-wire Adjustable 16-gauge steel.
"D-1½"	Offices, Schools, Corridors, Lobbies, Stores, Wainscoting, Laboratories.	20″, 25″, 30″, 35″, 40″, 45″, 50″, 55″, 60″	1¾″ Standard reinforced and insulated. 20-gauge steel.	22-gauge steel	3″ Square or Chamfered Corner Design. 18-gauge steel.	3′ x 7′ 1¾″ thick 18-gauge steel. Flush or Paneled.	⅜″ thick insulated 20-gauge steel.	18-gauge cold rolled drawn steel.	6″ High 3-way lay in-wire Adjustable 18-gauge steel.
"D-1"	Offices, Schools, Corridors, Lobbies, Stores, Wainscoting, Laboratories.	20″, 25″, 30″, 35″, 40″, 45″, 50″, 55″, 60″	⅜″ Packed steel panel. 20-gauge steel.	None	3″ Square Panel Design, Standard 18-gauge steel.	3′ x 7′ 1¾″ thick 18-gauge steel. Flush or Paneled.	⅜″ thick insulated 20-gauge steel.	18-gauge cold rolled drawn steel	6″ High 3-way lay-in-wire Adjustable 18-gauge steel.
"R"	Industrial, General Purposes, Offices with Base Added.	30″, 40″, 50″, 60″, 70″, 80″	Single steel panel. 20-gauge.	None	3″ Square Panel Design. 18-gauge steel.	3′ x 7′ 1¾″ thick 18-gauge steel. Flush or Paneled.	⅜″ thick insulated 20-gauge steel.	18-gauge cold rolled drawn steel.	No base. Standard base optional.

Con't Type	Wall filler sizes	Ceiling fillers	Panel and door mouldings	Cornice moulding	Glazing	Blackboard frame and tray	Tray reinforcements	Blackboard reinforcements	Blackboard Corner caps
"K"	5″ to 15″ 18-gauge steel.	Double steel. 18-gauge or Mineral board ¼″ thick.	20-gauge cold rolled drawn steel.	18-gauge cold rolled drawn steel	Double or single glass ⅛″ to ¼″ thick.	18-gauge steel	16-gauge steel	18-gauge steel	16-gauge steel
"M"	5″, 6″, 7″, 8″, 9″, 10″ 20-gauge steel.	Double steel. 20-gauge or Mineral board ¼″ thick.	20-gauge cold rolled drawn steel.	18-gauge cold rolled drawn steel	Double or single glass ⅛″ to ¼″ thick.	18-gauge steel	16-gauge steel	18-gauge steel	16-gauge steel
"D-1½"	5″, 6″, 7″, 8″, 9″, 10″ 20-gauge steel.	Double steel. 20-gauge or Mineral board ¼″ thick.	20-gauge cold rolled drawn steel.	18-gauge cold rolled drawn steel	Single glass ⅛″ to ¼″ thick.	Blackboard Frames may be applied to plastered walls with wood or metal grounds set in place before plastering.			
"D-1"	5″, 6″, 7″, 8″, 9″, 10″ 20-gauge steel.	Double steel. 20-gauge or Mineral board ¼″ thick.	20-gauge cold rolled drawn steel.	18-gauge cold rolled drawn steel	Single glass ⅛″ to ¼″ thick.	Friendly Type railing is 66″ high, not including pilaster caps, with 42⅞″ counter height lower portion to match all types of partition. 23⅛″ high special pilaster construction above. Caps, bases and mouldings bronze or steel regular. Other white metals furnished when specified. Base plinths are .0625 gauge steel or bronze.			
"R"	10″ to 15″ 20-gauge steel.	Single steel. 22-gauge.	20-gauge cold rolled drawn steel.	18-gauge cold rolled drawn steel	Single glass ⅛″ to ¼″ thick.				

Railings furnished to match each type of partition.

Note: Sliding doors 1¼″ thick with track and 2-point ball bearing roller hanger, concealed in 4¼″ thick Type "K" walls are furnished when specified. This type of door saves floor space required by swing of hinged doors. Sliding gates are also furnished for railings to match Type "K."

All swinging doors are furnished regular with 1 pair 4½″ ball bearing hinges and paracentric key lock.

Door checks or stops are furnished when specified.

Wire bases have slot holes for adjustment in height to meet slight variations in floor levels.

FEATURES OF ART METAL PARTITION THAT HAVE WON APPROVAL OF THE ARCHITECTURAL PROFESSION

(1) All-welded construction from floor-to-cornice—proved to give most durable and rigid installation.

(2) Salvageable 100%—partition is permanent asset, unlike plaster or tile walls.

(3) Easily erected. No dirt, no muss, minimum of noise during installation. Best use of floor space at all times is possible because of complete interchangeability.

(4) Sectional steel floor channel gives firm foundation. Rubber stripping laid between channel and floor makes base watertight.

(5) Insulation and quality finish. Tests have proved insulation of Types "K" and "M" partition more effective in soundproofing than a 4-in. tile wall. Famous Art Metal finishes applied.

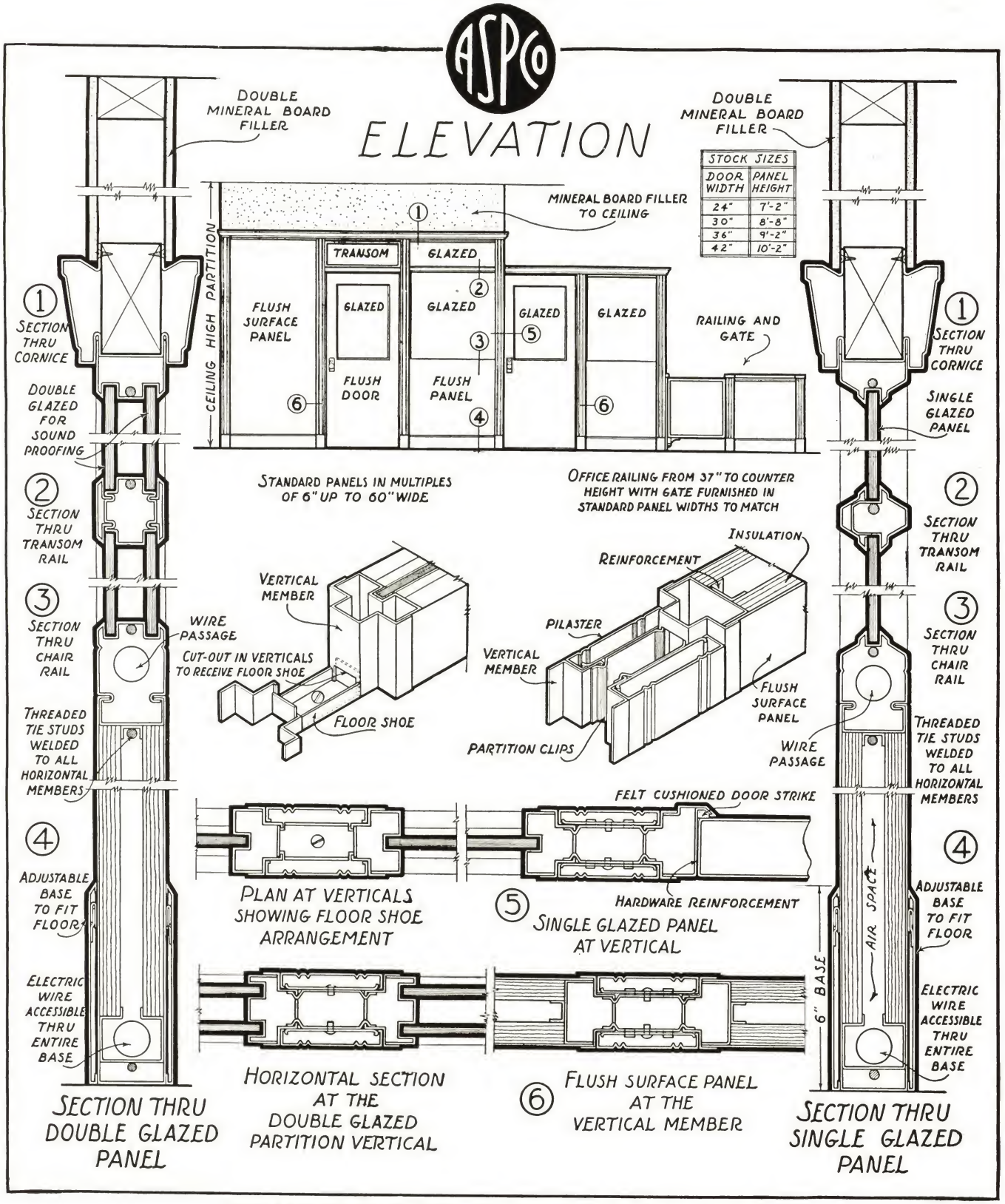
ATLANTIS STEEL PRODUCTS CORP.

Manufacturers of Steel Office Partitions

TELEPHONE
EVergreen 7-5268

OFFICE AND FACTORY
116 Troutman Street, BROOKLYN, N. Y.

For page on Toilet Partitions, see File Index



Note: These partitions are built to meet all Government and Architectural Specifications

DAHLSTROM METALLIC DOOR COMPANY

EXECUTIVE OFFICES AND FACTORIES

JAMESTOWN, N. Y.

REPRESENTATIVES IN PRINCIPAL CITIES

For Dahlstrom Elevator Entrances, Metal Doors, and Conduo Base, see File Index

DAHLSTROM INSULATED METAL WALLS AND PARTITIONS

Types

Type "W" — Paneled Type Partition can be furnished in varied panel treatments by using insulated solid or glazed panels where desired.

Type "DD"—Flush Metal Partition with "pilaster inserts" adding contrast and beauty. It has nominal soundproofing features; designed for solid flush wall or with glass lights.

Type "MM"—Flush Metal Wall without "pilaster inserts" producing a flush wall surface reproduction of a plaster wall when painted to match. It has maximum soundproofing and insulating features.

Type "MG"—Flush Wall Type similar to Type "MM" design, except for glass lights and nominal soundproofing features.

Features

Design—Well balanced, attractive, rich in dignity and character, Dahlstrom Metal Walls and Partitions fit graciously into the varied requirements of modern new buildings or remodeled structures, lending "custom built atmosphere".

Construction—Rigidity, strength and sound-resisting qualities together with their simplified erection features were factors receiving considerable time and study in their development. Wall units are factory assembled—double thickness.

Insulation — Metal panels of all doors and wall units are insulated against metallic sound—reduce to a minimum undesirable noises. "MM" wall units and top fillers have insulation full thickness and are soundproof.

Flexibility — The requisite for speed and low cost in the rearrangement of walls and partitions to suit new tenant layouts have been fulfilled and made possible by the unique construction features employed, making it possible to interchange panel units with door units of similar width and height and to remove or replace any unit without disturbing adjoining units or top filler.

Erection—Dahlstrom Metal Walls and Partitions are economical and simple to erect, dismantle or re-erect, because of the improved and simplified clip-on and drive-wedge methods employed at field connections.

Savings—No maintenance expenditures for repairs and upkeep because of Dahlstrom's recognized workmanship and superb finishes. No loss in salvage values in the dismantling or reinstalling of metal walls or partitions to suit tenant changes. Reduced labor costs and time when tenant changes are made, due to the improved and simplified construction methods employed at all take-down fastenings.

General Specification

Furnish and erect all metal partitions as indicated on floor plans. The metal partitions shall be what is known to the trade as "Paneled" or "Flush Wall Type" and shall equal the qualifications specified for Type "W" or Types "DD", "MM" or "MG" partitions (specify type required) as manufactured by the DAHLSTROM METALLIC DOOR COMPANY, Jamestown, New York.

Partitions shall be constructed so as to make it possible to interchange wall units with door units of similar width and to remove or replace any unit, without disturbing adjoining units or top filler. All wall and door units, except Type "MM" shall have nominal soundproofing features.

(*Note:* Type "MM" partitions shall have maximum soundproofing features in wall units, doors and between ceiling fillers.)

Provisions shall be made for flexible connections of all units at pilasters, pilaster inserts or vertical joints (to suit varied partition types) to form One-way—Two-way—Three-way or Four-way intersections without the use of special fillers. All loose base, pilasters, cornice and glazing members, (except top glazing member) shall be secured by means of concealed fastenings.

The space between the top horizontal support member and ceiling shall be filled in with double sheets of "Compo" board or similar material not less than ¼ in. thick. These fillers shall



Type "MM" Dahlstrom Insulated Metal Wall

be set true with joints reinforced at back and filled with approved cement filler and made smooth and invisible prior to painting. (Fillers to be painted to match painted plaster walls. Painting not included in Metal Partition Contract.)

(*Note:* Space between ceiling fillers of Type "MM" Metal Walls to be filled with an approved insulating material.)

Provisions shall be made to take up variation in the floor so that each wall or door unit can be set level and plumb. All connections and fastenings shall be concealed.

Doors—shall be 1¾ in. thick. All door unit assemblies shall be interchangeable with wall units of similar width.

Type "W" Partitions—Doors shall be one-panel, metal or glass. Two-panel metal or upper panel glass and lower panel metal. (Specify arrangement required.)

Types "DD"—"MM"—"MG"—Doors shall be—One-panel glass—flush full height or glass upper part 42 in. from floor and flush lower part. (Specify arrangement required.)

Glass shall be furnished and set by the Metal Partition Contractor. (Specify kind of glass required.)

Hardware — To be furnished by the Metal Partition Contractor, includes bitted key locks and one pair of 5 in. x 4 in. butts. Any other hardware, including cylinder locks, door checks, door holders, etc. can be supplied at extra cost. Locks can be masterkeyed. (Specify.)

Finish—Shall be equal to DAHLSTROM METALLIC DOOR COMPANY Standard, Plain Enamel or Grained Finishes. (Specify kind of finish required.)

(*Note:* For maximum interchangeability of wall units, especially when partitions occur on more than one floor, a uniform height of partition (from floor to top of upper supporting member) is recommended and should be selected to clear the lowest beam or give the most satisfactory transom height.)

DRIWOOD CORPORATION

ASSOCIATED COMPANY

IMPROVED OFFICE PARTITION CO., INCORPORATED

TELEPHONES
WHitehall 3-2420, 2421

40 Rector Street, NEW YORK, N. Y.

REPRESENTATIVES IN
PRINCIPAL CITIES

For Driwood Period Mouldings, see File Index

MANUFACTURERS OF UNIT TYPE MOVABLE AND INTERCHANGEABLE PARTITIONS TO FIT THE NEED OF EVERY REQUIREMENT AND PURSE

Made in Natural Woods and Non-Combustible Materials

Driwood partitions have a background of more than 20 years in satisfying the partition requirements of the architect, building owner, manager and the tenant.

The criticisms and suggestions of such users helped in the development of our products to the point where today they are recognized to be leaders in their field.

Our partitions, in beautiful woods and non-combustible materials, are carried in stock, thus enabling us to render the prompt service for which we are noted.



Telesco Partition

The Driwood organization represents individuals who have made office partitions and interior architectural woodwork their life study.

Driwood Partitions have been designed to permit simplified rearrangement of office layout at a minimum of cost and full salvage value. They are beautiful, modern, economical, and time tested. Standardized parts that will always fit are carried in stock for such rearrangements and changes.

We are also the only manufacturers and distributors of Genuine Telesco Partition. Our partitions have been used by the country's leading business organizations. We also manufacture interior architectural woodwork of all descriptions, de luxe waiscoting, bank and stock brokerage office equipment.

HENRY KLEIN
CREATIONS
TRADE MARK REG.

A FEW PROMINENT USERS OF DRIWOOD PRODUCTS

Aluminum Co. of America
Allied Chemical & Dye Corp.
American News Co.
American Telephone & Telegraph Co.
American Tobacco Co.
Associated Gas Co.
Barrett Co., New York
Walter Ballard Co., Washington, D. C.
Bank of the Manhattan Co.
Boy Scouts of America
Bank of China
Bilhuber-Knoll Corp., Orange, N. J
Burroughs Adding Machine Co.
Chamber of Commerce, Washington, D. C.
Cohn Hall Marx Co.
Celanese Corp. of America
Dell Publishing Co.
E. I. duPont de Nemours & Co., Inc.
First Central Trust Building, Ohio
General Aniline Works, Inc., New Jersey
General Electric Co., Bridgeport, Conn.
Guardian Life Insurance Co.
General Chemical Co.
Horn & Hardart Co.
Irving Trust Co.
International Telephone Building Corp.
Industrial Office Building Corp., Newark, N. J.
New York Curb Exchange
Reconstruction Finance Corp.
Radio Quality Group Service
Rochester, N. Y., Savings Bank
Southeastern Cottons, Inc.
Semet Solvay Engineering Co.
U. S. Rubber Co.
Union Central Life Insurance Co.
United Factors
Vermilya-Brown Co., Inc., N. Y. C.
Western Electric Co.

We Specialize in Wood Products Research

UNIT -OR- PARTITION DOOR

Design 9
(Patented)

For Use Where Economy Is Paramount But Where Beauty and Interchangeability Cannot Be Sacrificed

Material—Furnished in opaque color finishes, also Genuine Black American Walnut, African Mahogany, Oak or Poplar. All lumber of prime stock, seasoned and kiln dried. Also in non-combustible materials.

Finish—Partition is finished in a special processed durable lacquer to any desired color or shade.

Height—Partition is furnished in two heights; low 7 ft. and, for full height, 8 ft. 6 in. high with fillers above same to take care of varying ceiling heights.

Units—One piece three frame full height unit for glass in two upper frames, or center frame only, or paneled throughout. All units are 1¼ in. stock with ¼ in. 3-ply plywood panels. Unit widths of varying sizes with major size 37¾ inches to interchange with doors.

Doors—35¾ in wide by 6 ft. 8 in. high by 1⅜ in. thick. Doors are interchangeable for glass or panels.

Ventilating Transoms—Glazed or paneled are furnished 16⅛ in. high by 35¾ in. wide by 1¼ in. thick and are removably interchangeable with fixed sash.

Base—Waterproof, mop-proof, finished in slate black color. Special lacquer or other color to order. Height 6¼ in. from floor.

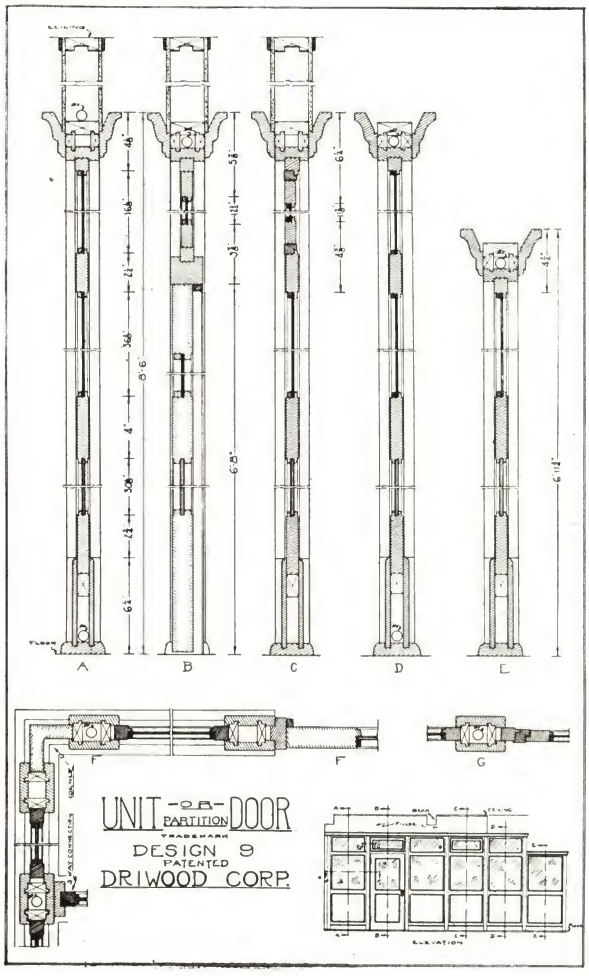
Hardware—For doors, Yale & Towne bit key mortise locks, satin black Bower-Barff finish to match base, made to our order. One pair 3½ in. butts to match locks. Wooden rubber tipped bumper supplied for each door. For transoms our special friction pivots on top and bottom are supplied for window pole operation. Special hardware on order.

Assembly—Partition is most advanced sectional unit type. Entirely assembled with screws. Partition is rapidly and simply installed. Changes can be accomplished quickly, without damage, noise, or any expense except labor.

Standardization—"Unit or Door" is completely standardized. Parts that will always fit and match are carried in stock for prompt delivery to customers for additions and changes. Special details and materials to order.

Salvage Value—Partition has 100% salvage value for re-installation and changes.

Convertibility—*Partition is so designed that sectional units are removable permitting doors to be interchanged with sectional units and vice versa, also glass removable for interchanging with panels; all without dismantling partition.*





Rigidity—Partition has exceptional rigidity and strength comparable only with masonry walls. This is accomplished through the use of full length posts of special construction.

Design—Design is of modern type, rich in its simplicity. Properly designed and approved by leading architects.

Wiring Facilities—Ample provisions are made for the carrying of wires and BX cable through the post units, behind the upper cornice and behind the base.

Labor—Partition is union made and bears union labels. Where our installation is required, only union labor is employed.

Railing—Sanitary panel type, and is made to match partition. Supplied in standard 36 in. and 42 in. heights or special heights to order. Railing is held rigidly in place by rods completely hidden and secured to the floor. No outside braces whatever are used. Double or single acting gates are supplied with hardware to match partition.

FOR A SOUND PROOF OFFICE

WALL OF SILENCE

SOUND PROOF PARTITION

2½ IN. DESIGN 18-FLUSH-MODERN SOUND DEADENED

(Patented)



An Effective Barrier Against the Transmission of Sound Providing Privacy, Efficiency, Luxury

Material—Furnished in opaque color finishes, also Genuine Black American Walnut, African Mahogany or Oak. All of selected beautiful rich grained veneers. All lumber of prime stock, seasoned and kiln-dried. Also in non-combustible materials.

Finish—Partition is finished in a special processed durable lacquer to any desired color or shade.

Height—Partition is furnished in two heights: low 7 ft. and, for full height, 8 ft. 6 in. high with acoustic fillers above same to take care of varying ceiling heights.

Panels—Partition is made up of three units: the lower unit from the floor to the 45⅞ in. line, which unit is usually paneled, the center unit from the 45⅞ in. line to the 6 ft. 10½ in. height which is furnished either paneled or double or single glazed sash (in 7 ft. partition only single glazed sash), the top unit from the 6 ft. 10½ in. height to the upper cornice. This unit is either supplied panel or in double or single glazed sash. All units are made in standard widths of 36 in. Panels are 2 in. thick built on frames with layers of acoustic material on the inside of two 3-ply layers of plywood, one on each outside face.

Full paneled units one piece to top cornice.

Doors—Soundproof doors 34 in. wide by 6 ft. 8¾ in. high by 1½ in. thick. Doors are interchangeable for panel or glass above 45⅞ in. line.

Ventilating Transoms—Soundproof transoms double or single glazed or paneled are furnished 16⅛ in. high by 34 in. wide by 1½ in. thick, and are removably interchangeable with fixed sash.

Base—Waterproof, mop-proof, finished in slate black color. Special lacquer or other color to order. Height 4½ in. from floor.

Hardware—For doors, Yale & Towne bit key mortise locks, satin black Bower-Barff finish to match base, made to our order. One pair 4½ in. butts to match locks. Wooden rubber tipped bumper supplied for each door. For transoms mortise type friction pivots on sides are supplied with ring for window pole operation. Special hardware on order.

Assembly—Partition is most advanced sectional unit type. Entirely assembled with screws. Partition is rapidly and simply installed.

Changes can be accomplished quickly, without damage, noise, or any expense except labor.

Standardization—"Wall of Silence" is completely standardized. Parts that will always fit and match are carried in stock for prompt delivery to customers for additions and changes. Special details and material to order.

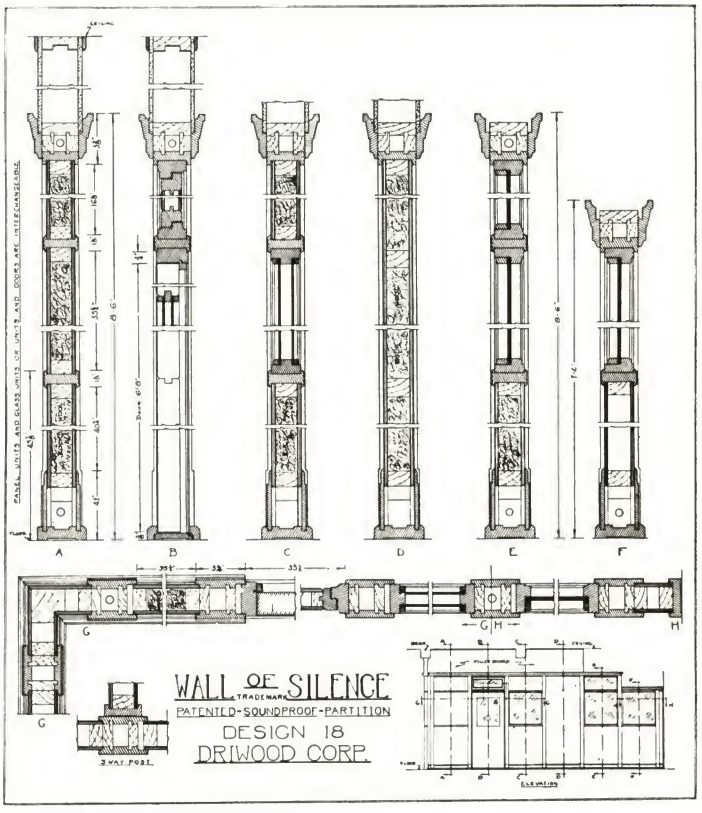
Salvage Value—Partition has 100% salvage value for re-installation and changes.

Convertibility—*Partition is so designed that sectional units are removable permitting doors to be interchanged with sectional units and vice versa, also glass sash units with paneled units and vice versa without dismantling partition.*

Rigidity—Partition has exceptional rigidity and strength comparable only with masonry walls. This is accomplished through the use of full length posts of special construction.

Design—Design is of flush-modern type easy to keep clean and with great beauty in its simplicity. Properly designed and approved by leading architects.

Soundproof Value—Partition is guaranteed to meet necessary soundproof qualifications.



Insulation Value—Ceiling height partition is an excellent insulator against the transmission of heat and cold and does not sweat. Hence it has great value in conjunction with air conditioning installations.

Wiring Facilities—Ample provisions are made for the carrying of wires and BX cable through the post units, behind the upper cornice and behind the base.

Labor—Partition is union made and bears union labels. Where our installation is required, only union labor is employed.

Railing—Sanitary panel type, and is made to match partition. Supplied in standard 36 in. and 42 in. heights or special heights to order. Railing is held rigidly in place by rods completely hidden and secured to the floor. No outside braces whatever are used. Double or single acting gates are supplied with hardware to match partition.

"Driwood Partitions Are Best"



TRANSITE WALLS

by Johns-Manville



An atmosphere of permanence and solidity pervades this reception room of Schenley Distillers Corporation's executive offices, yet its Transite Walls, finished in curly maple veneer, provide advantages of movability found in no other type of wall construction. Hegeman Studios, Inc., designers.

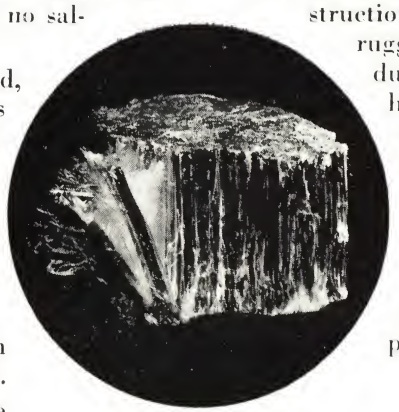
TRANSITE WALLS *by* JOHNS-MANVILLE

A wall construction for sub-dividing building interiors that combines the best features of conventional walls with an entirely new conception of what a movable partition can offer

UNTIL recent years, conventional office walls have always been of either one or two general types. The permanent type of wall offered advantages of privacy and solidity but did so at the expense of movability. Any essential change in office layout necessitated complete and total wreckage with little or no salvage of materials.

Movable partitions, on the other hand, have offered only a partial solution to this problem. Providing only a small degree of privacy, they presented a temporary appearance, offered little in the way of sound resistance and were of course structurally inferior to the permanent type. Neither were they particularly adaptable to the modern need for making quick and extensive alterations with a minimum of expense and disturbance.

Johns-Manville Transite Walls, while retaining all the advantages of the conventional solid type of wall, have completely changed the accepted conception of what a movable partition can offer in the way of adaptability to present-day office demands.



Asbestos, famous for its fire-resistance and permanence, is combined with cement to form Transite.

What is Transite?

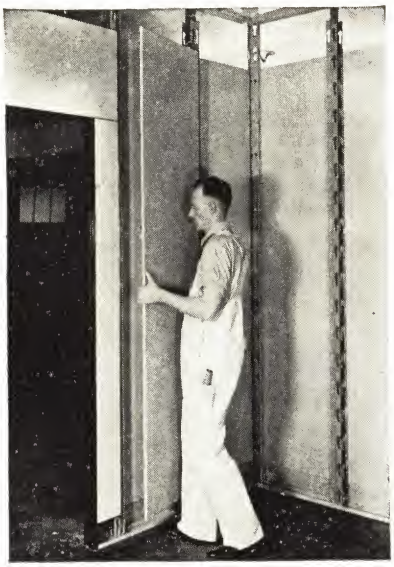
The material Transite is not new in building construction. For over a quarter of a century, this rugged asbestos and portland cement product has been giving satisfactory service in hundreds of industrial plants, where it has withstood virtually every condition destructive to ordinary building materials. Johns-Manville engineers have taken this proved material — Transite — and combined it with an ingenious construction method to produce what may truly be called the first all-purpose partition.

Easily erected and re-located

One of the outstanding features of Transite Walls is their ease of installation. The use of small, interchangeable

units erected over concealed steel studs not only eliminates much of the bothersome dirt and disturbance ordinarily associated with interior wall construction, but reduces the time and labor of installation to a minimum.

And this same ingenious erection method makes relocation equally simple, with 100% salvage! No other type of wall construction, in fact, can approach Transite Walls in their adaptability to the requirements of future change or expansion. Whether the problem involves the simple relocation of an existing Transite Wall, or extensive revisions in its construction, such as the introduction of doorways or the substitution of a combination Transite and glass wall in place of a solid Transite wall to provide borrowed light, the change can be made with an economy and speed hitherto unknown.



This photograph shows the ease with which one man handles the largest and heaviest of Transite Wall parts. Note also the clean, dry construction, enabling changes to be made without interrupting office routine.

Permanent and Fireproof

Combined with these features of easy erection, movability and complete salvage are other advantages heretofore associated only with walls of the fixed or permanent type. Ample privacy is assured, practically any degree of sound-resistance required being obtainable. The advantages of permanence and security are also achieved by the use throughout of materials which cannot burn and which are likewise immune to rot and deterioration.

Suited to any decorative scheme

Because their flush, projection-free surfaces can be treated with virtually any finish, Transite Walls also lend themselves perfectly to a wide variety of decorative treatments. Private offices, for example, may be finished with lacquers, leather, cork, fabrics, or wood veneers, while general offices may be left unpainted or finished in any practical manner desired. A variety of panel arrangements is also possible by using the standard size Transite panels in various ways. Where desired, both the decorative finish and the panel scheme may be varied on opposite sides of the same wall, as shown in the sketch on page 4.



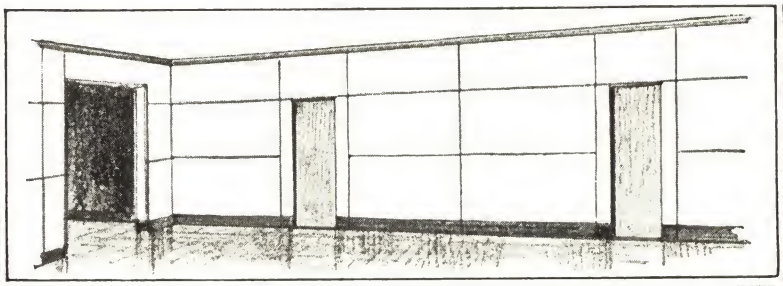
The adaptability of Transite Walls to modern office needs is exemplified by this installation at the Aluminum Company of America's plant at Massena, N. Y. A solid ceiling-high wall forms one side of the large general office in the foreground, while a ceiling-high wall into which clear glass has been incorporated permits adequate visual control from the private offices in the rear.

JM TRANSITE WALLS by JOHNS-MANVILLE JM

TRANSITE WALLS PERMIT *unlimited* FREEDOM OF DESIGN

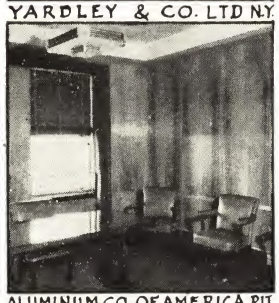


YARDLEY & CO. LTD N.Y.

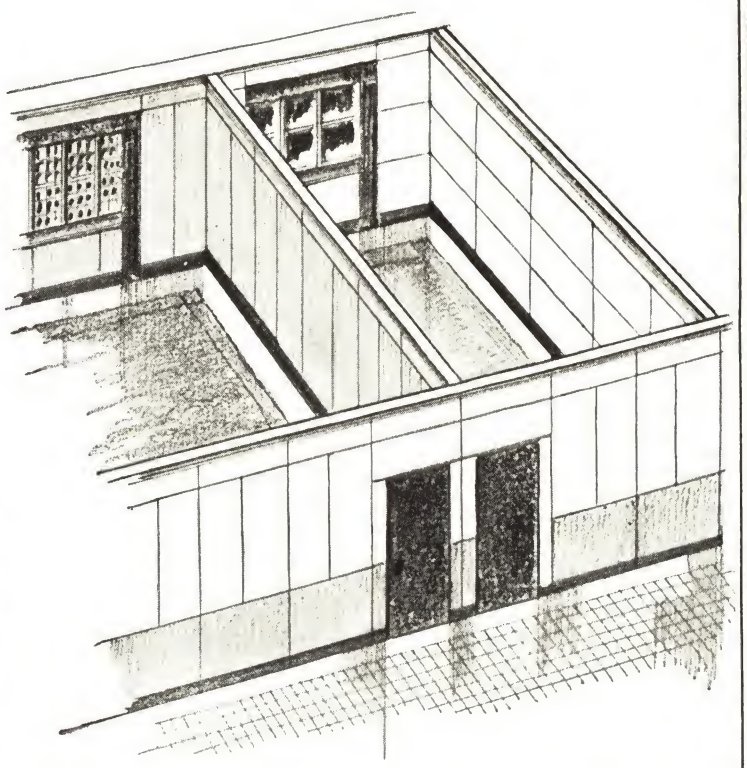




WALDORF ASTORIA HOTEL



ALUMINUM CO. OF AMERICA PIT





ELI LILLY INDIANAPOLIS



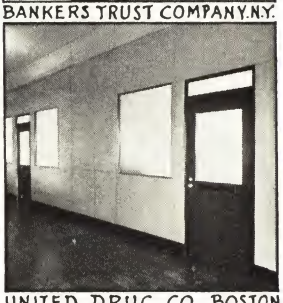
HOWARD CLOTHES BROOKLYN



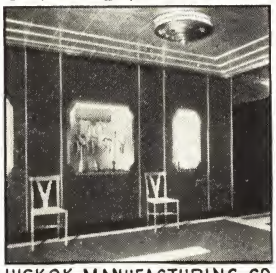
BANKERS TRUST COMPANY N.Y.



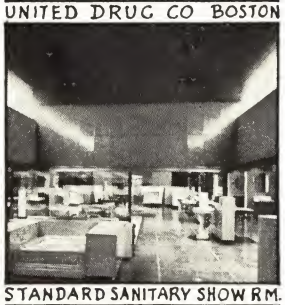
LEHMAN BROTHERS N.Y.



UNITED DRUG CO BOSTON

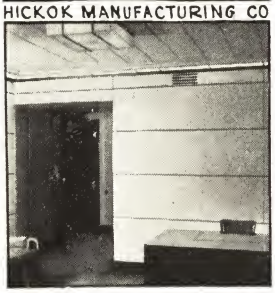


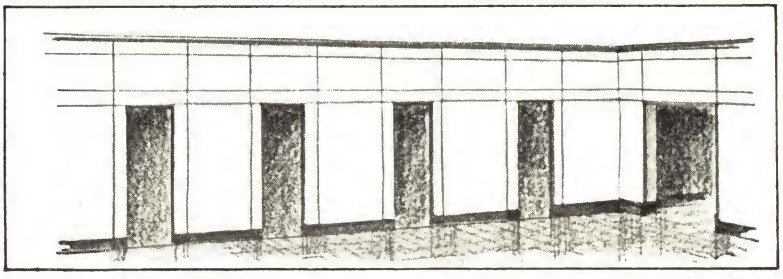
HICKOK MANUFACTURING CO

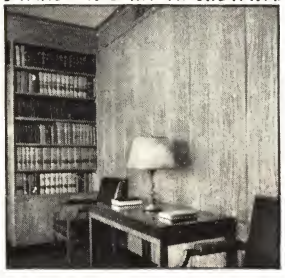


STANDARD SANITARY SHOW RM.

The above sketch illustrates an advantage of Transite Walls not practical with any other movable partition—the use of a different finish and a different panel arrangement on opposite sides of the same wall. The photographs on this page show a few of the wide variety of finishes and panel arrangements possible. Only a wall construction offering complete interchangeability of parts can provide such unlimited freedom to the architectural designer.

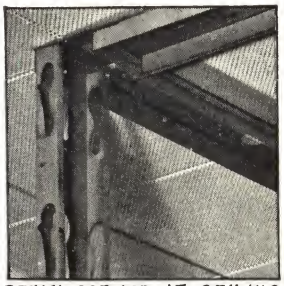






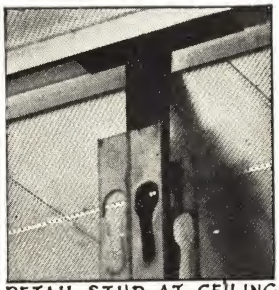
JM TRANSITE WALLS by JOHNS-MANVILLE JM

TRANSITE WALLS ARE EASILY *and* QUICKLY ERECTED



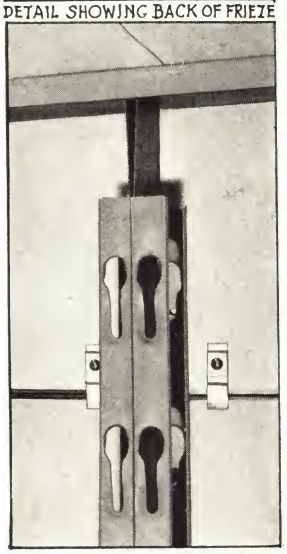
DETAIL CORNER AT CEILING

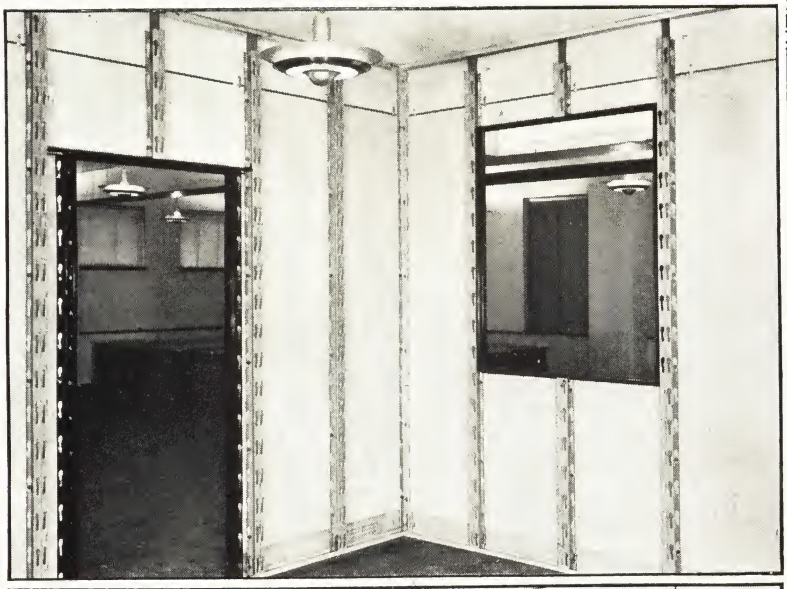
Below: A typical ceiling-high Transite Wall installation in course of erection, with standard hollow metal door buck and borrowed light frame in position and the sheets on one face of the wall fastened to the steel studs with patented concealed spring expansion bolts.



DETAIL STUD AT CEILING

DETAIL SHOWING BACK OF FRIEZE



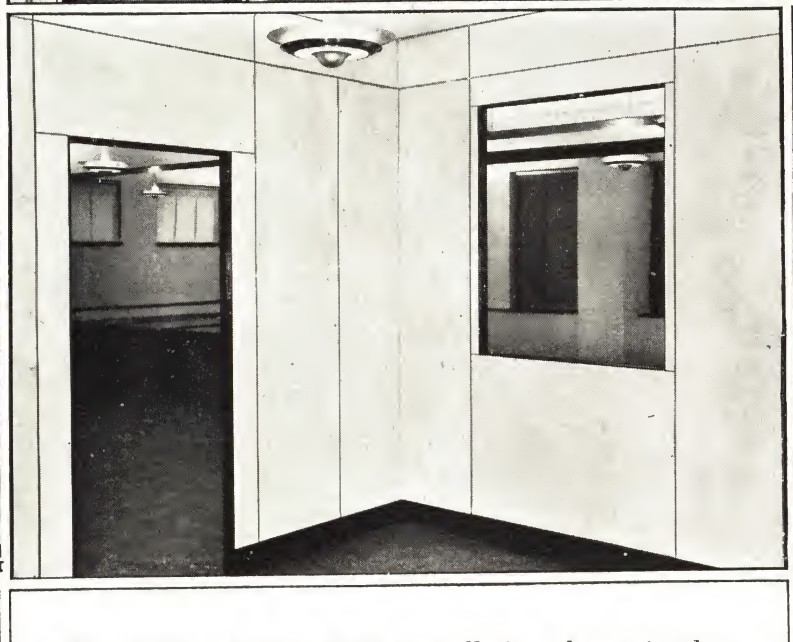


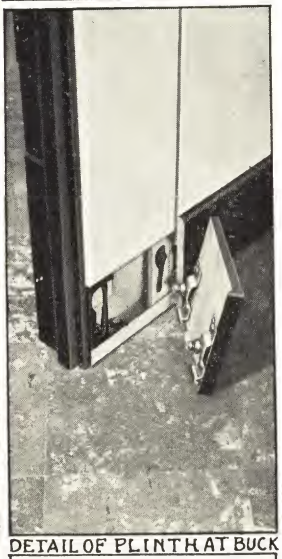
DETAIL OF BUCK AT HEAD





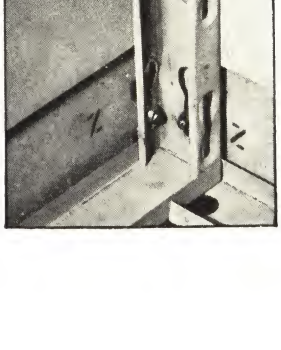
DETAIL OF CORNER AND PLINTH





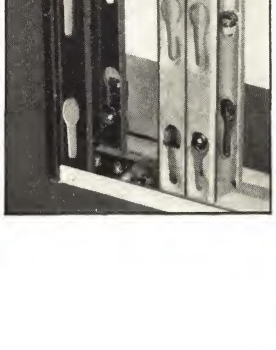
DETAIL OF PLINTH AT BUCK

DETAIL CORNER AT FLOOR

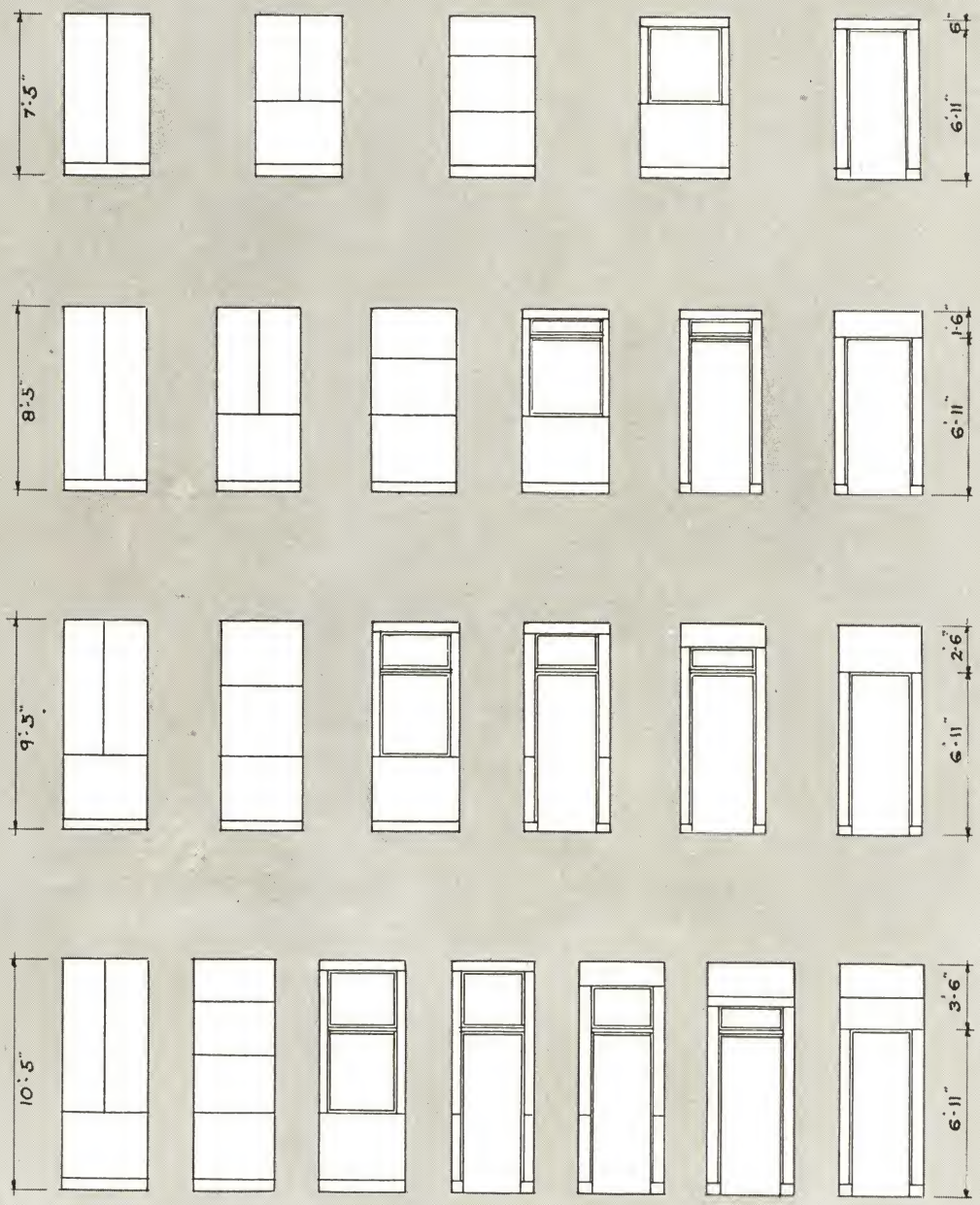


Above: Completion of the installation shown in the upper photo. The Transite sheets have now been hung on both sides of the steel studs, the Transite base has been snapped into place, and the walls are ready for immediate painting or other decorative treatment.

DETAIL DOOR BUCK AT FLOOR



BASE YOUR LAYOUT *on* THESE SUGGESTED ARRANGEMENTS

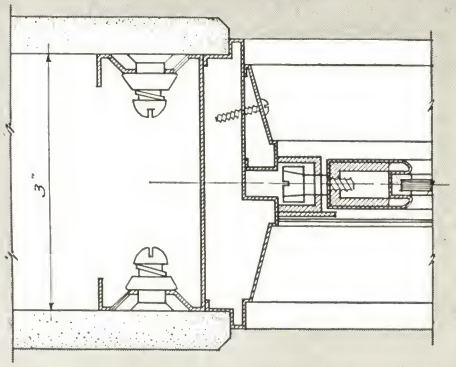


STANDARD TRANSITE PANELS · LIGHT FRAMES · BUCKS IN 4'-0" WIDE UNITS

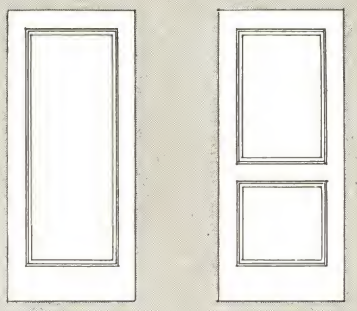
THE ABOVE ELEVATIONS SHOW VARIOUS ARRANGEMENTS OF STANDARD TRANSITE PANELS · LIGHT FRAMES DOOR BUCKS AND TRANSOMS IN FOUR FOOT UNITS AT THE FOUR MOST GENERALLY USED HEIGHTS · THESE UNITS ARE ALL INTERCHANGEABLE WITH ONE ANOTHER GIVING GREAT LATITUDE IN PANEL ARRANGEMENT AND WALL DESIGN PERMITTING UNLIMITED FLEXIBILITY IN RELOCATING DOORS AND LIGHT FRAMES IN ANY FOUR FOOT WALL UNIT · THESE HEIGHTS CAN BE USED AS FREE STANDING WALLS · STANDARD TRANSITE PANELS CAN BE ADDED ABOVE THESE WALLS TO HEIGHTS AS GREAT AS FORTY FEET ·

TRANSITE WALLS by JOHNS-MANVILLE JM

DETAILS OF CONSTRUCTION of TRANSITE WALLS

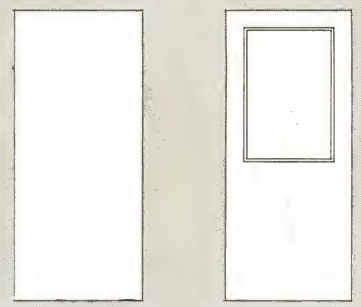


PLAN SECTION PIVOTED TRANSOM SASH



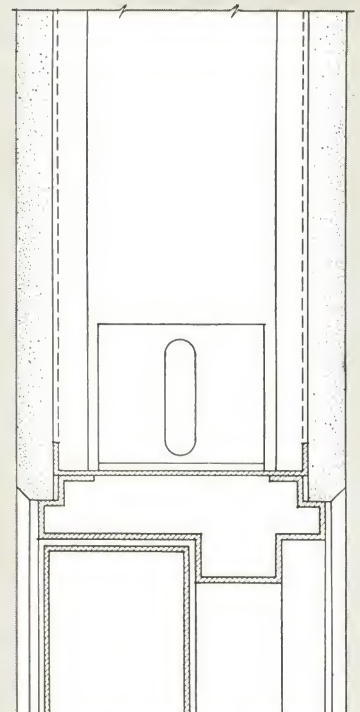
SINGLE PANEL TWO PANEL

STANDARD PANEL TYPE DOORS

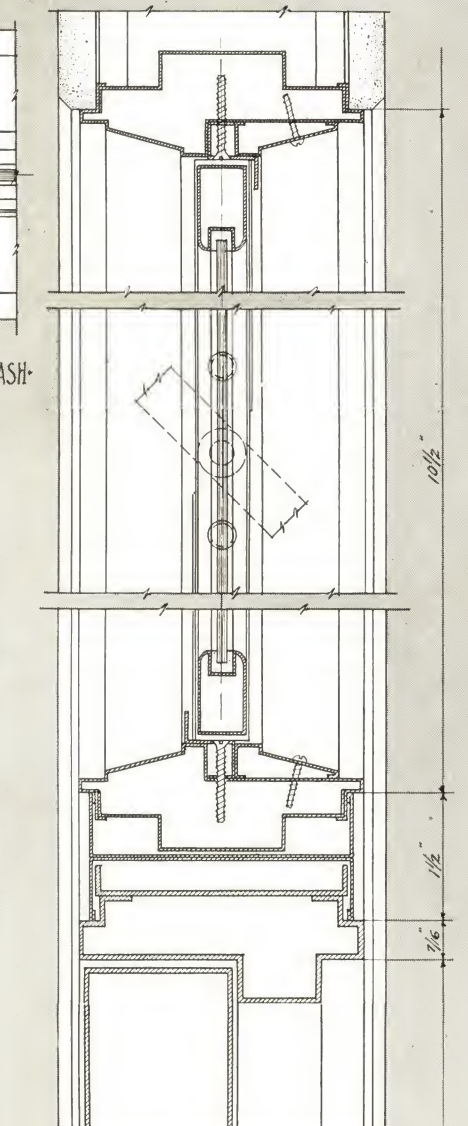


FLUSH DOOR GLASS PANEL

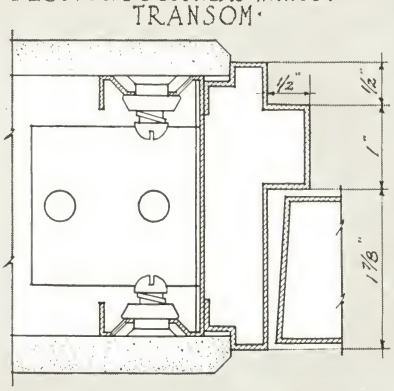
STANDARD FLUSH TYPE DOORS



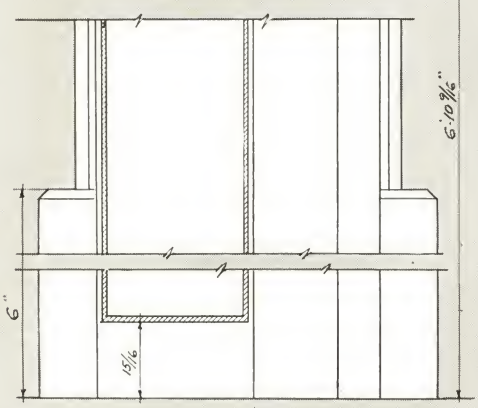
SECTION DOOR HEAD WITHOUT TRANSOM



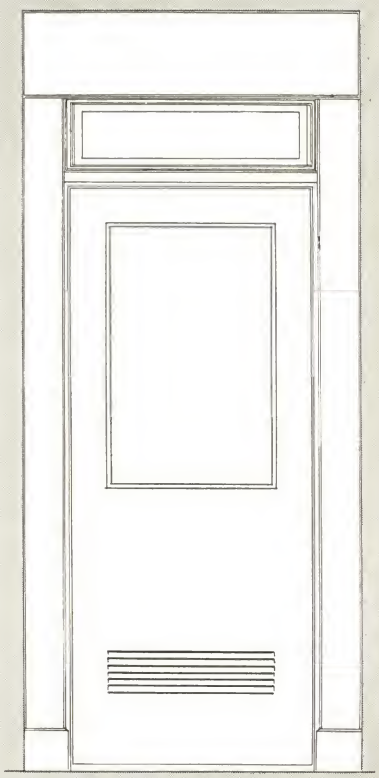
SECTION DOOR HEAD WITH TRANSOM



PLAN SECTION DOOR BUCK



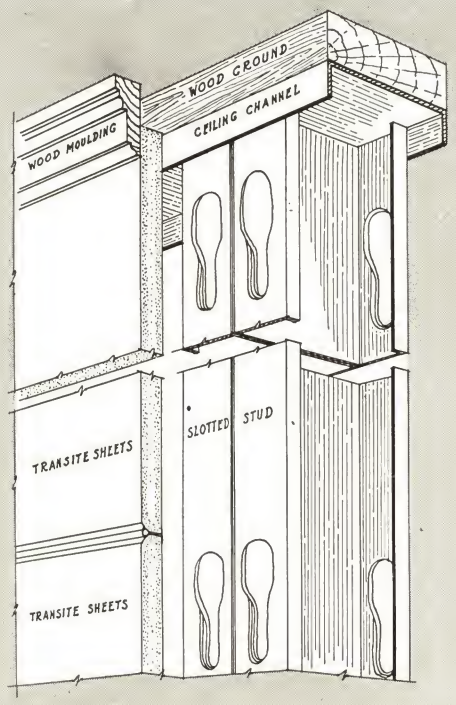
DETAIL SECTIONS DOOR BUCK AND TRANSOM SASH



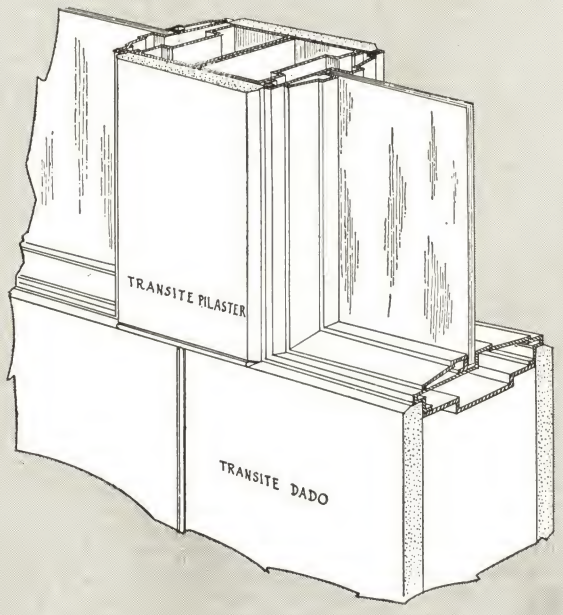
SCALE ELEVATION DOOR UNIT

JM TRANSITE WALLS by JOHNS-MANVILLE JM

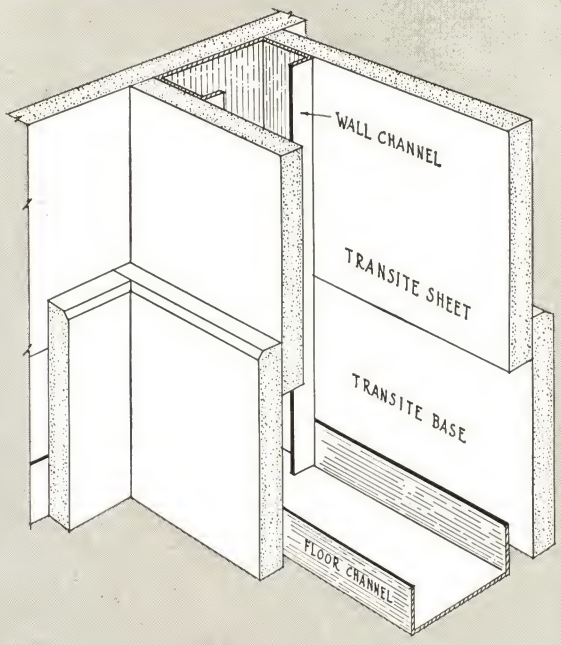
DETAILS OF CONSTRUCTION of TRANSITE WALLS



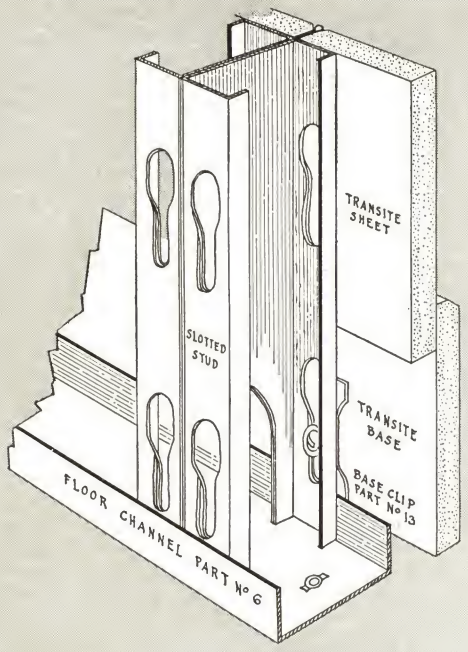
DETAIL OF CONSTRUCTION
TRANSITE WALL AT CEILING



DETAIL OF CONSTRUCTION
BORROWED LIGHT FRAME



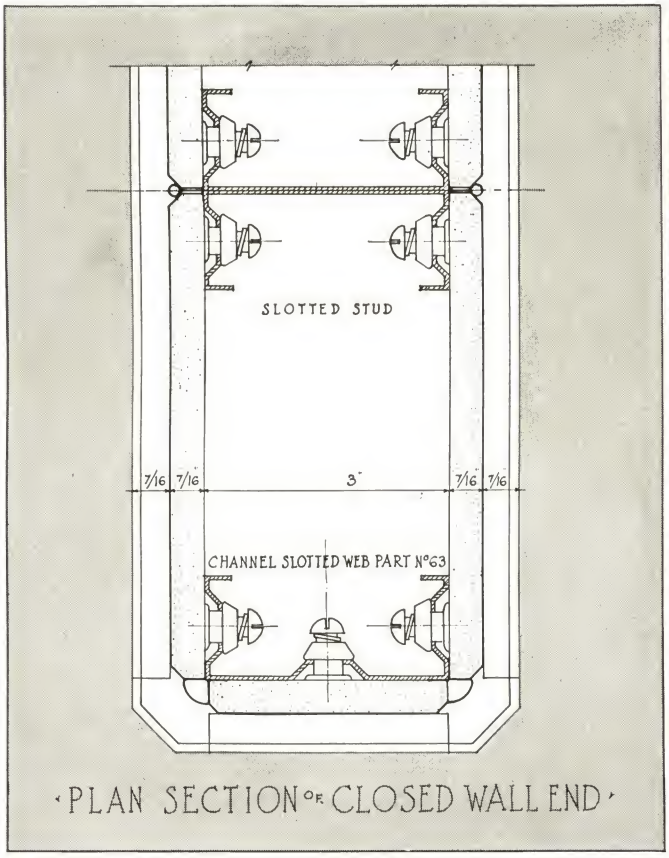
DETAIL OF CONSTRUCTION
INTERSECTING WALL FORMING T



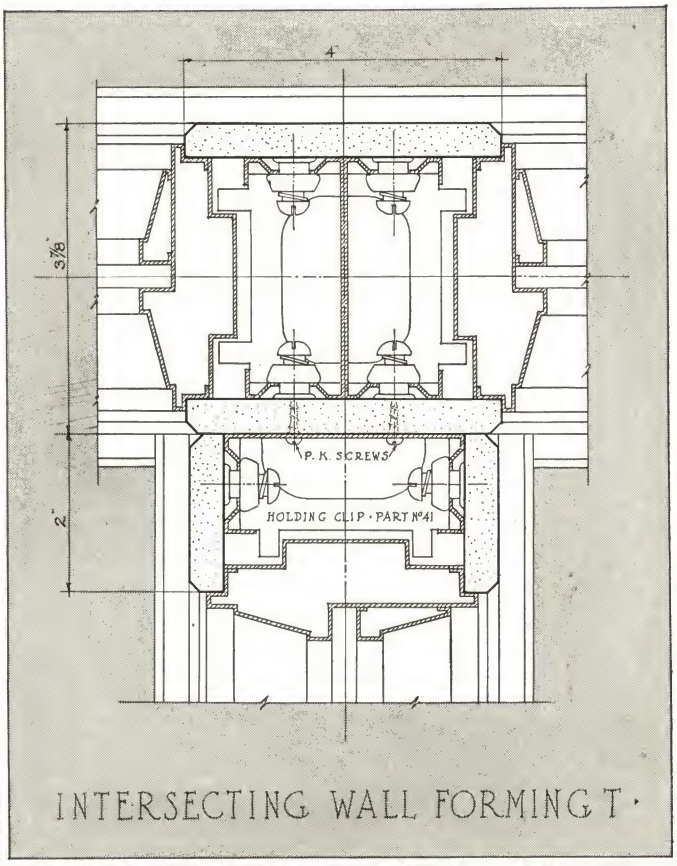
DETAIL OF CONSTRUCTION
TRANSITE WALL AT FLOOR

JM TRANSITE WALLS by JOHNS-MANVILLE JM

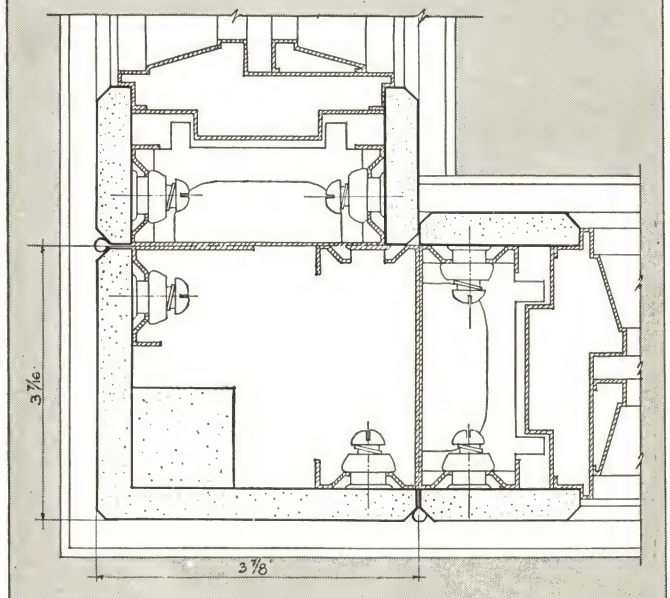
DETAILS OF CONSTRUCTION of TRANSITE WALLS



PLAN SECTION OF CLOSED WALL END

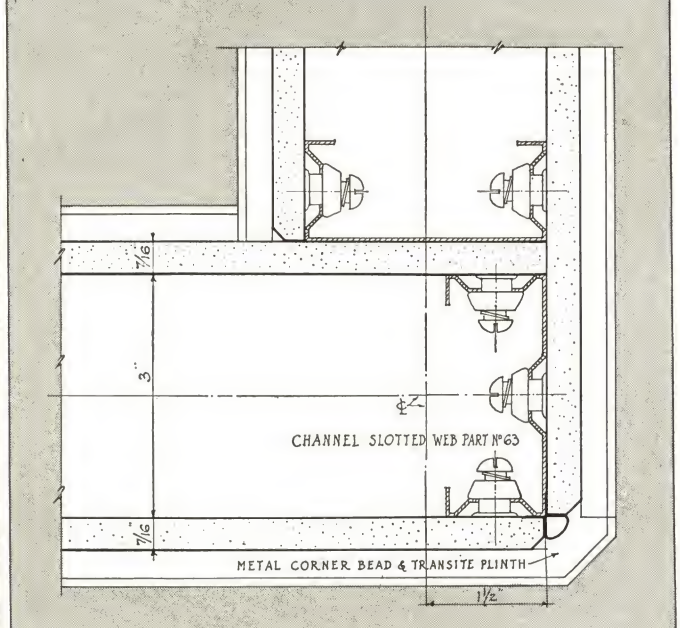


INTERSECTING WALL FORMING T



PLAN SECTION OF STANDARD CORNER

TRANSITE CORNER MARK "A.C. 96"



PLAN SECTION OF CORNER STANDARD DESIGN

CORNER FORMED BY STANDARD TRANSITE PANELS

JM TRANSITE WALLS by JOHNS-MANVILLE JM

TRANSITE WALLS COMBINE MOVABILITY *with* PERMANENCE



Re-located 4 times—with complete salvage of materials

The most careful planning cannot predict the changes that progress in an organization will require. Often, however, inefficient office layouts are tolerated at a loss, because of the time and expense involved in making changes. Transite Walls, because of their flexibility and ease of relocation make such false economy unnecessary. The installation at the left, for example, has been re-located four times with complete salvage of materials — and each time without any of the litter and inconvenience necessary with plaster walls.

●

Standard Oil Company (N. J.)
Rockefeller Center,
New York, N. Y.



All the privacy and permanence of fixed walls

There is nothing in the appearance of the attractive Transite Walls in the offices at the left to indicate that they could be taken down and relocated with scarcely any interruption to the daily routine. Yet such is actually the case, and with this desirable feature is combined advantages of privacy and permanence that have hitherto been associated only with fixed walls. The sound resistance of the Transite Wall separating the secretarial office from the executive office in the background is unequalled by that of any other type of movable partition.

●

Shreve, Lamb and Harmon,
Architects

JM TRANSITE WALLS by JOHNS-MANVILLE JM

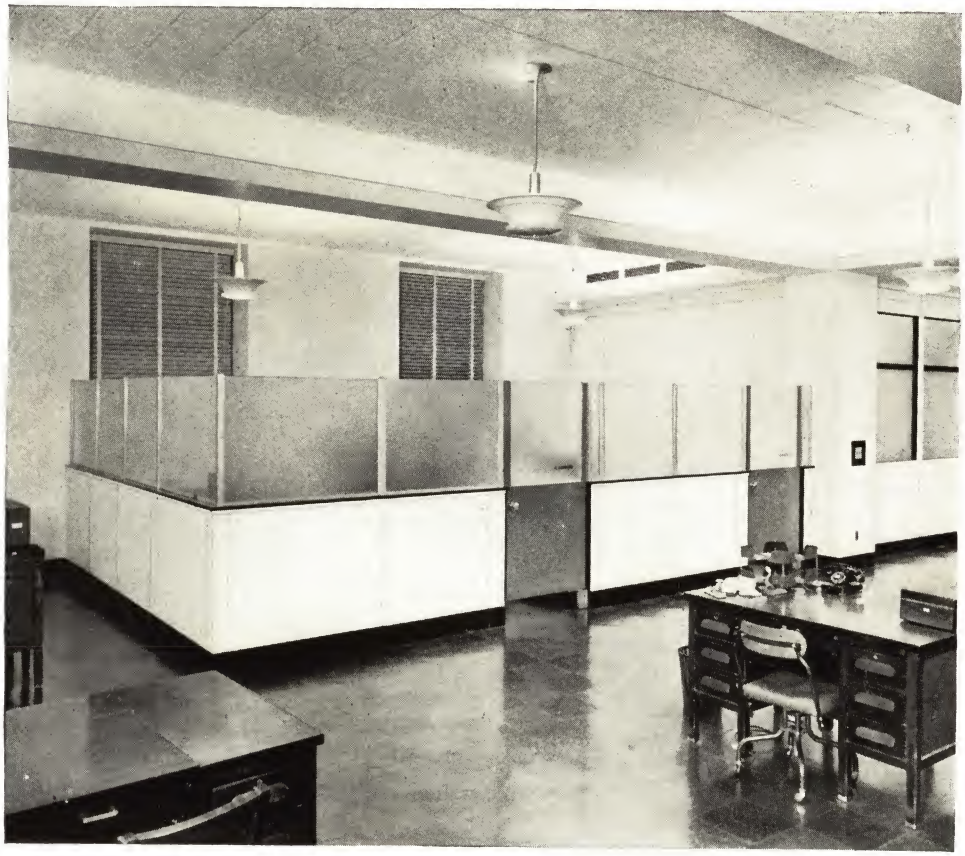
ANY PARTITIONING PROBLEM SOLVED *with* STANDARD PARTS

An efficient layout provided by 3 forms of Transite Walls

To meet present-day standards of efficiency and to provide for better lighting and ventilation, the modern business office frequently requires several modifications of the conventional solid wall of ceiling height. Transite Walls meet these requirements without resorting to non-standard construction and without sacrificing the advantages of movability and 100% salvage. A typical example is the installation at right in which three forms of Transite Walls —a bank screen, a solid ceiling-high wall and a Transite and glass wall have been installed in the same office.

●

Liberty Mutual Insurance Co., Boston, Mass.
Chester Lindsay Churchill, Architect



A wide range of decorative finishes possible

Transite Walls place no limitations on interior decoration — from the rich wood paneling so expressive of the dignity of a private office to the bright, light-reflecting surfaces of the modern general office, virtually any finish may be chosen. Wood, leather or cork veneers, lacquers or fabrics are available, factory-applied. In most cases, however, Transite Walls are painted on the job to match the structural building walls. Frequently the Transite is only waxed, which brings out the pleasing natural beauty of the material.

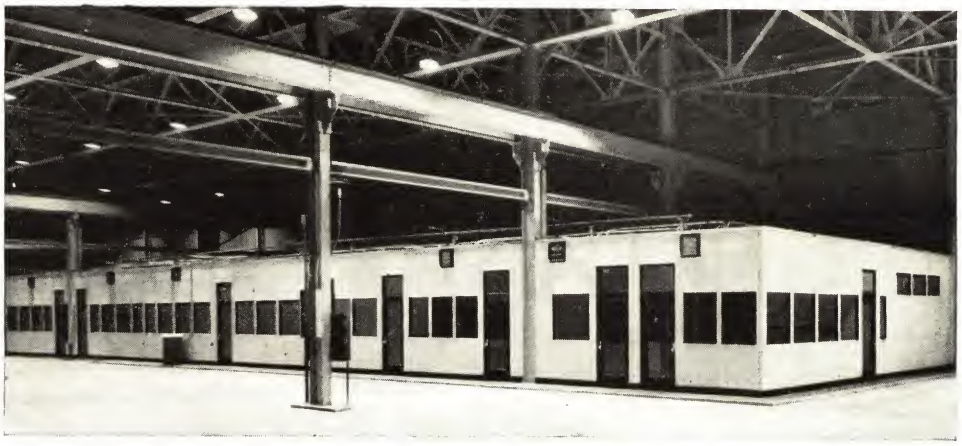
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Walnut-veneered Transite Wall installation at Eli Lilly & Co., Indianapolis, Ind.
Robert Frost Daggett, Architect

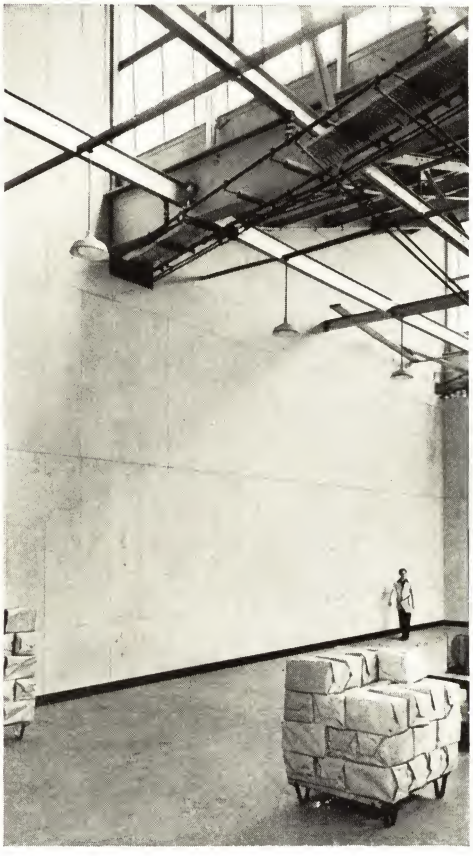


JM TRANSITE WALLS by JOHNS-MANVILLE JM

TRANSITE WALLS *meet* SEVERE FACTORY REQUIREMENTS TOO



One of the country's largest metal producers, the Aluminum Company of America, has used Transite Walls in various locations over a period of five years. The first installation, made in their headquarters offices at Pittsburgh, Pa., was later followed by installations in their plants at Massena, N. Y., and Alcoa, Tenn. In their newest plant, at Lafayette, Indiana, this versatile wall construction was again used, this time as load-bearing walls to carry Sanacoustic ceilings, conduits, heating pipes, walkways, etc. Photo at left shows part of factory offices, machine shops and laboratories so constructed.





EXTREME LEFT: The Transite Wall shown here is, to the best of our knowledge, the highest movable partition ever built. Erected with only standard Transite Wall parts, it reaches a height of over 36 feet and demonstrates the practicability of this modern wall construction in meeting unusual factory requirements. This installation separates the pressroom from the shipping room in the plant of the Alco Gravure Division of Publication Corporation, Hoboken, N. J. The Ballinger Co., Engineers.

●

LEFT: Converting a factory building into executive offices was the difficult problem which Transite Walls helped solve for the General Electric Company, Schenectady, N. Y. Differences in floor elevation as great as 8″ were overcome by the adjustable features which are a standard part of Transite Wall construction. The illustration shows a portion of the 20,000 square foot installation.

SPECIFICATIONS—SHORT FORM

GENERAL: The work contemplated under this specification shall include all material, labor, equipment and services necessary for the installation of interchangeable Johns-Manville movable Transite Walls, (state in detail work to be done) as shown on drawings herein specified.

SHOP DRAWINGS: Shop drawings showing details of construction, layout, standard hardware, fittings, anchors, etc., shall be submitted for approval.

MATERIAL: Concealed structural members shall be 20 gauge steel. All exposed Transite sheets shall be hung with concealed fastenings to permit the removal and replacement of sheets. Transite shall be 7/16″ thick with smooth, true surfaces. Mineral Board, when specified for top fillers, shall be at least ¼″ thick. All material shall be of Transite Wall Standards including bucks, light frames, doors, and hardware.

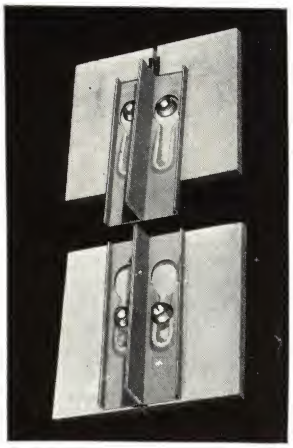
CONSTRUCTION: Anchor floor and ceiling channels. Apply stud extensions to studs to proper length. Install studs in floor and ceiling channels, ready to receive Transite sheets, all in accordance with Transite Wall standard details and methods of erection, with finish as required (state in detail finish desired).

WORKMANSHIP: The finished work shall be strong, rigid, neat in appearance, and free from defects or buckles. Walls or partitions shall be erected in a rigid, substantial manner, straight and plumb, and with horizontal lines level. Hardware shall be carefully adjusted, and entire work completed and left in perfect condition.

TRANSITE WALLS by JOHNS-MANVILLE

Some Important Advantages of Transite Walls

EASILY AND QUICKLY ERECTED—Made possible by exclusive patented features and by the use of easily handled units which can be transported from floor to floor inside elevator cabs. Only ordinary carpenter's tools are required; no specially trained labor is necessary. Mechanics accustomed to other types of movable partitions testify to the ease of making changes with Transite Walls.



•

Left: Patented spring expansion bolts sliding down into embossed slots in the steel studs wedge the Transite slabs securely against the studs, provide self-leveling and insure ease of installation. Reversal of the process makes dismantling equally simple.

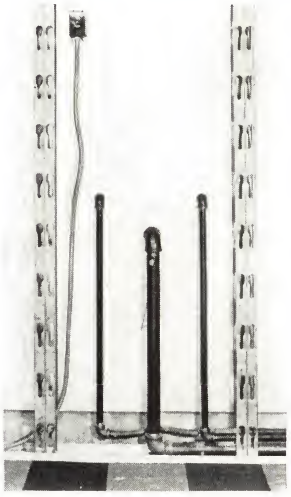
ENTIRELY DRY CONSTRUCTION—Permits walls to be painted immediately if desired—no long delays for drying out before the decorative plan can be completed.

100% SALVABLE—The use of interchangeable parts assures maximum re-use of all materials in the event that offices are re-located or wall changes are made subsequent to the original installation.

NO LIMITATION ON PLACING OF WIRES AND PIPES—Wiring and piping concealed within Transite Walls do not have to be confined to vertical or horizontal members. It may be carried anywhere within the walls, thus permitting great flexibility in the placing of outlets, piping, etc.

WIRING AND PIPING EASILY ACCESSIBLE—This is an important advantage when changes or repairs are necessary. Wiring and piping concealed within Transite Walls can be exposed with a minimum of disturbance and without any of the litter necessary with plaster walls.

SOLID CONSTRUCTION—Although Transite Walls are movable, they approach structural building walls in their solidity of construction. But unlike such walls with exposed plaster surfaces, they never show unsightly cracks as a result of vibration, expansion or contraction.



When the simple removal of the Transite base does not expose sufficient wiring or piping to permit repairs or alterations, it is an easy matter to remove a sheet from one side of the studs, as has been done here. This photograph also illustrates the simplicity with which the wiring and piping were originally installed.

VIRTUALLY ABUSE-PROOF—Made of asbestos and portland cement combined into a homogeneous slab, Transite is a material of great structural strength and rigidity. Its surface is highly resistant to shock and abrasion and will not crack or dent under severe abuse.



Transite, a pre-cast slab of asbestos and cement, is highly resistant to impact.

The use of Transite for table-tops in chemical laboratories for years testifies to its unusual resistance to the action of corrosive and destructive acids and alkalies. Unsightly mop marks are not found on Transite base. The original lustre of its Vinyl lacquer finish is not dimmed by daily mopping with cleaning compounds.

ADAPTABLE TO CHANGING CONDITIONS—Transite Walls are unequalled by any other type of wall in this respect. For example, a solid Transite Wall can be changed to one of Transite and glass, door openings can be re-located or eliminated and similar extensive alterations made after installation with minimum investment in new materials and with minimum labor and disturbance. The smaller number of parts used permits storage in a fraction of the space required for sectional type movable partitions.

FIREPROOF AND PERMANENT—Transite, composed entirely of asbestos and portland cement, is fireproof, as are all accessories used in the construction of Transite Walls. As a fire-retardant, Transite Walls have been tested by the Testing Laboratories of Columbia University and accepted by the Bureau of Buildings of New York and the Building Commissioners of other large cities for use where walls capable of passing a one hour fire test are required.



Even the white heat of a blow-torch flame cannot burn Transite.

MAXIMUM SOUND RESISTANCE—Knowing that light wood and metal sections in full wall dimensions were poor substitutes for the heavy masonry walls which for years had been accepted as the standard of soundproofness, Johns-Manville developed Transite Walls. J-M's 25 years of experience as pioneers in the field of acoustics was drawn upon to the fullest in achieving this modern wall construction that offers unique advantages in privacy and quiet. Today, both laboratory tests and the experience of users all over the country prove Transite Walls superior in sound resistance to any other type of movable partition.

JM TRANSITE WALLS by JOHNS-MANVILLE JM

SOME TYPICAL INSTALLATIONS OF

TRANSITE WALLS

Allis Chalmers Manufacturing Co.
Aluminum Co. of America
American Sugar Refining Co.
Bakelite Corporation
Bankers Trust Co.
Barrett Company
Beechnut Packing Co.
Boston Consolidated Gas Co.
Carbide & Carbon Chemical Corp.
Chamber of Commerce Bldg. (New Haven)
Chase Brass & Copper Co.
Chemical Bank & Trust Co.
Cincinnati Gas & Elec. Co.
Colgate-Palmolive Peet Co.
Columbia Broadcasting System, Inc.
Commodore Hotel (New York)
Commonwealth Edison Co. (Chicago)
Consolidated Chemical Industries, Inc.
Consolidated Gas Co. (Baltimore)
Corn Products Refining Co.
Crown Can Co.
E. I. du Pont de Nemours & Co., Inc.
Eli Lilly & Co.
E. R. Squibb & Sons
Federal Land Bank (Baltimore)
Federal Reserve Bank (New York)
Fidelity & Guaranty Fire Co. (Baltimore)
Flintkote Company
Forstmann Woolen Co.
General Dyestuff Corp.
General Electric Co.
Guaranty Trust Co. of New York
H. J. Heinz Co.
Hercules Powder Co.
Hickok Manufacturing Co.
Hospital for Chronic Diseases (New York)
Hostess Cake Co.
International Business Machines Corp.
International Nickel Co.
International Printing Ink Co.
Intertype Corp.
S. H. Kress & Co.
Lehman Bros.
Lever Brothers Co.
Liberty Life Insurance Co. (Topeka)
Liberty Mutual Insurance Co.
Long Island Lighting Co.
Marshall Field Estate
Massachusetts Bonding & Insurance Co. (Boston)
Metropolitan Edison Co. (Reading, Pa.)
Metropolitan Life Ins. Co.
Monarch Life Insurance Co.
Morgan Stanley & Co., Inc.
Mutual Chemical Co.
National Board, Y. W. C. A.
National Broadcasting Co.
National City Realty Co.
National Electrotype Co.
New England Tel. & Tel. Co.
Norfolk Newspapers Inc.
Northwestern Bell Tel. Co.
Northwestern University
New York Stock Exchange
Ohio Oil Co.
Paine Webber & Co.
Pittsburgh Post-Gazette
Porcelain Enamel and Mfg. Co.
Procter & Gamble Co.
Publication Corp. (Hoboken)
Radio Station WOR
Richmond Health Center (New York)
Rochester Telephone Co.
Rockefeller Center, Inc.
Jacob Ruppert (Brewery)
Schenley Distillers Corp.
Sealed Power Corp.
Second National Bank Bldg. (Toledo)
Shell Union Oil Corp.
Simmons Company
Southern New England Tel. Co.
Sperry Gyroscope Company, Inc.
Standard Oil Co. of New Jersey
Standard Sanitary Mfg. Co.
State of W. Va., Dept. of Unemployment Compensation
Stone & Webster Realty Co.
Standard Ultramarine Co.
Trenton Trust Co.
Underwriters' Laboratories, Inc.
Union Dime Savings Bank (New York)
United Drug Company
U. S. Envelope Co.
U. S. Industrial Alcohol Co.
U. S. Treasury Dept.
Wagner Electric Corp.
Waldorf-Astoria Hotel
West Penn Power Co.
Western Electric Co.
Williamsburg Savings Bank Bldg. (Brooklyn)
The Wm. S. Merrell Co.
Yardley & Co., Ltd.
Y. M. C. A. (Detroit)

J O H N S - M A N V I L L E

EXECUTIVE OFFICES: 22 EAST FORTIETH STREET, NEW YORK

There is a Transite Walls Representative at each of the J-M offices below:

BALTIMORE, St. Paul and Franklin Streets
CINCINNATI, Central Parkway at Walnut Street
DETROIT, 832 Fisher Bldg.
HARTFORD, 29 Bartholomew Avenue
KANSAS CITY, 2030 Walnut Street
MINNEAPOLIS, 732 Baker Bldg.
PHILADELPHIA, 1617 Pennsylvania Boulevard
BOSTON, 49 Federal Street
CHICAGO, 222 North Bank Drive
CLEVELAND, 45 Prospect Avenue, N.W.
INDIANAPOLIS, 1503 Merchants Bank Bldg.
MILWAUKEE, 757 North Broadway
NEW YORK, 22 East 40th Street
PITTSBURGH, Liberty Avenue and Seventh Street
ST. LOUIS, 1000 Market Street
ST. PAUL, 710 Pioneer Bldg.

1939

SWEETS EDITION

FIREPROOF

SOUNDPROOF

PREFABRICATED



MASTERWALLS

movable partitions

BY HAUSERMAN

HAUSERMAN PARTITION HANDBOOK

IN THIS HANDBOOK you will find descriptions, illustrations and engineering data covering the complete line of Masterwalls by Hauserman. Masterwall quality, speed and service are all possible because over 90% of all Masterwall items described and illustrated in this catalogue are carried in Hauserman stock. (See index inside back cover.) No attempt has been made to substitute this catalogue for the services of our Masterwall Engineers as in most cases the buyer will find consultations with our men long trained in this business both helpful and profitable. Each type of Masterwall and accessories fits a particular service and need and is the result of twenty-five years of experience, research and development. Our Office Planning Book, sent on request, offers many practical suggestions for layout.

SPECIFY HAUSERMAN

BECAUSE it is a complete line. We publish this catalogue so that you may know the whole story and select the partition which best suits your purposes and specify it.

BECAUSE Masterwalls are the STANDARD OF QUALITY, STANDARD OF PERFORMANCE AND STANDARD OF VALUE.

BECAUSE of our facilities for service, our FACTORY BRANCH OFFICES, FACTORY TRAINED SUPERVISORS AND EXPERIENCED ERECTION CREWS CONSTANTLY IN OUR EMPLOY, our adequate stock: make possible intimate study and smart performance on each individual installation.

BECAUSE of exclusive features such as — our deluxe construction (steel reinforced, flat steel panels solid packed) floating doors — rubber door strikes — telescopic glazing — acoustic service — photographic wood grained finishes and impervious lacquer finishes — stock accessories well studied for all needs, as you will see in the 56 pages of this Catalogue.

BECAUSE of your insurance against orphanage-parts and service for all types always available.

BECAUSE our outstanding leadership and facilities are the greatest assurance of value and acceptance.

HAUSERMAN STOCK

meets your requirements accurately



30,000 DIFFERENT STOCK ITEMS



10 MILES OF PARTITION STOCK

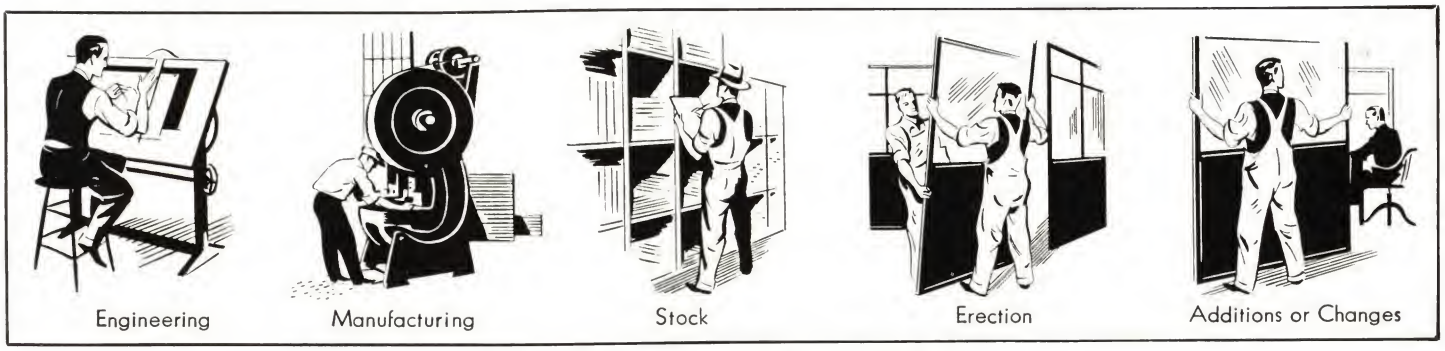
HAUSERMAN STOCK PARTITION parts are ready for finishing, assembly and quick shipment for original installations, or future changes. Adequate stock is an indispensable factor in the saving of time and the maintenance of a reasonable cost for matched parts in the future. Unless the manufacturer is completely organized for furnishing additional matching parts your future savings which justify a higher first cost will be largely lost.

HAUSERMAN STOCK HARDWARE is made by one of the leading hardware manufacturers. It is built to our specifications which correct the deficiencies revealed by twenty years of extensive hardware use. Hauserman hardware is designed so that bitt key, cylinder and communicating locks are interchangeable in our standard mortise in all doors. Standard makes of cylinders of all leading manufacturers fit Hauserman locks, accordingly we can master key to your present hardware system.

THIS CATALOGUE — OVER 90% STOCK

WHY HAUSERMAN

• experience is the answer



HAUSERMAN COMPLETE SERVICE

A GOOD WORKING SPACE IS A GOOD INVESTMENT. A fine office environment contributes to the exercise of good judgment. Hauserman Masterwalls provide any degree of decorative treatment, soundproofness or flexibility. They are distinctive and have true economy. The Masterwall line includes a fine partition for every sub-dividing or decorative purpose and is produced by the outstanding leader of the partition industry. Masterwall smartness of design and built-in facilities for up-to-the-minute service makes them pay constant dividends indefinitely.

MASTERWALLS ALWAYS COST LESS IN THE END. Although they may cost more in the beginning, Masterwalls are always a sound investment through making possible at low cost those unpredictable changes which every business that lives and grows must eventually make. There is an even greater saving in the elimination of loss of time and of the annoyance incident to dust, water, muss, etc., all unavoidable with partitions that cannot be easily salvaged. The unseen costs are also substantial. These are the costs of "NOT MAKING CHANGES" when new conditions demand such changes. Such changes are usually NOT MADE because most partitions DO NOT PERMIT THEM TO BE MADE in a comfortable and practicable way.

WHILE WE MAY CAPITALIZE OUR EXPERIENCE we know it is difficult to predict the future. We must be prepared for change. We know new conditions create new possibilities and new problems, many of which, strangely, come to light only after partitions are in use. This holds regardless of careful planning and study. Such changes can be met quickly and inexpensively. Hauserman Masterwalls can be moved frequently and quickly (often outside of working hours) and still be like new, as the lacquer finish is almost indestructible. Hauserman De luxe constructed walls will never warp, swell, buckle, crack or shrink. They have an appearance of permanence, yet are easily moved and do not wear out.

THE ONLY VALID REASON for not using Masterwalls might be the lack of capital to finance any additional initial cost. But the high ultimate cost of tile and plaster, because of its high maintenance and moving cost soon converts any hoped for saving into a liability. The outstanding businesses of the country have found through experience that practically all partitions are ultimately moved for one reason or another, many from building-to-building and some from city-to-city.

THERE ARE ORPHAN PARTITIONS as well as orphan cars. During the past 30 years over fifty companies have advertised and later abandoned the manufacture of steel partitions. Some of these companies are still in business but their partitions are orphans nevertheless. Remember that the life of a steel partition is from 25 to 50 years. Can you afford to take chances with a product, the life and ultimate value of which largely depends upon continuous service involving inevitable additions and changes?

HAUSERMAN SERVICE IS COMPLETE. This means many direct factory branches with sales, engineering and erection service. All are owned and operated by The E. F. Hauserman Company. Masterwall Service means all the facilities to deliver a complete job of best quality on time.

FORESIGHTED USERS CHOOSE MASTERWALLS AND FIND THAT THEY COST LESS IN THE END.

FOR ARCHITECTS: Complete engineering and specification information quickly available. Experienced counsel is always on call.

FOR BUILDING MANAGERS: Save time and money with better tenant service assured — more profit and less grief.

FOR CONTRACTORS: Prefabricated Masterwalls cut overhead at end of the job, through speed, flexibility and coordinated service.

FOR INDUSTRIAL AND OFFICE MANAGERS: Departmental divisions and rearrangements, soundproof and sound absorbing offices, test rooms and laboratories, draft and temperature control, quickly planned and erected in old or new buildings any place. QUIET assured for workrooms located in noisy departments.

Rearrangements required for expansion quickly completed. We assume full responsibility for a finished result.

THERE IS NO SUBSTITUTE FOR MASTERWALL QUALITY

MASONRY VS MASTERWALLS

• facts and figures prove Masterwall advantages



BUSINESS AT A STANDSTILL

This Dirt, Muss and Fuss is entirely eliminated by the use of Masterwalls. Compare this picture with "Business as Usual" on the opposite page. Compare the tearing down and carting out of 300 lbs. of debris per lineal foot of masonry with the simple shifting of panel units. Masterwalls eliminate time loss, dust, grit, damage to typewriters, other mechanical equipment and furniture, and cleaning of drapes and carpets all incident to the putting up or moving of masonry walls.

MASTERWALLS PROVE A SOUND INVESTMENT

The attractive and permanent appearance of Masterwalls has created an erroneous impression of high cost. Value considered, first costs are surprisingly low. Ultimate costs are lower than any other partition.

The initial cost of Masterwalls may exceed masonry but any differential is returned many times, in longer life, greater usefulness and better service. The following facts and the charts below, only cover a ten year period, while, actually, the life of a Masterwall is at least 25 to 50 years.

(1) Masterwalls cost the same as masonry walls at the end of a ten year maintenance period because masonry walls require repainting, plaster patching and general up-keep. Masterwalls require none.

(2) Masterwalls cost only 55% as much as masonry walls with 2 changes in a ten year period. There is only about 2% to 3% salvage value to tile and plaster walls outside of doors and frames, all of which salvage is far offset by cost of debris.

(3) Masterwalls cost only 46% as much as masonry walls with 4 changes in a ten year period.

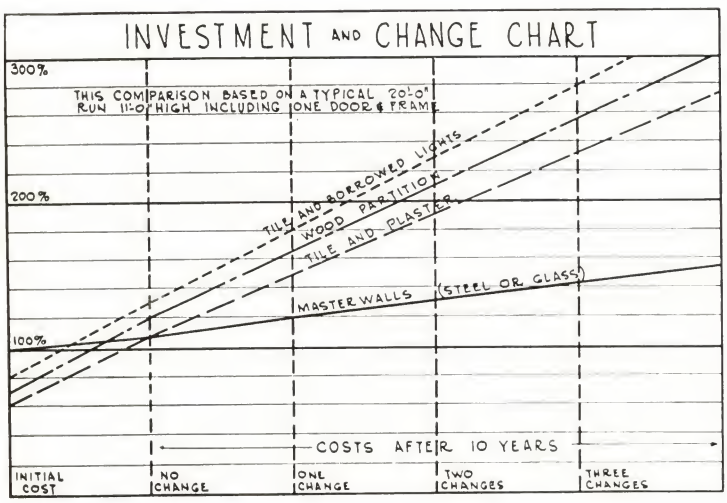
(4) Masterwalls will save over 15 days' use of space on any new installation or subsequent change.

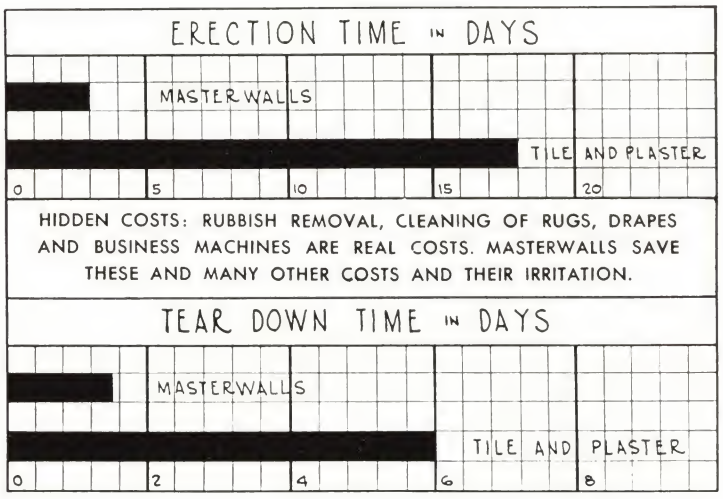
(5) Masterwall comparative costs show to a still greater advantage when compared with tile and framed glass lights.

(6) A 4½" tile and plaster wall weighs 30 lbs. per sq. ft. wall area compared to 8 lbs. for a 3" Masterwall. The tile and plaster partition load for an average floor is 46 lbs. per sq. ft. floor area. Compare this to Masterwalls of only 13 lbs. per sq. ft. floor area. This means saving thousands of lbs. of floor load on the average office floor and real economy in design of any new building.

This data has been compiled from a survey of experience in the Chrysler Building, checked and verified by 13 other users keeping cost and experience records.

COMPARE THIS YEAR'S MASTERWALL COST WITH FUTURE YEARS MASONRY COST





CHANGES ARE INEVITABLE

• movability, a sound investment

EXAMPLES PROVE THAT MOVABILITY PAYS

Office facilities must not only keep step with present business expansion but must be prepared to meet any future depression. This means frequent change in layout, location, and use of office and manufacturing space. Whatever the cause may be . . . general expansion, consolidations or reorganizations, new departments, new personnel, new methods or new tenants . . . alterations and extensions of partitions must be handled efficiently and with the least possible interference with business.

Here are a few instances where Masterwalls have been used to great advantage.

A large corporation using over 1,000,000 sq. ft. of Masterwalls, in over a hundred different cities . . . with installations running from a few feet to tens of thousands . . . has expanded, rearranged and added to them, moved them from building to building and from city to city. They expanded up to 1929. Then contracted their space and layouts up to 1932, putting surplus partitions in stock. Then expansion began. Stocks were used again, moving some from as many as three cities to one location for additions. Over 300,000 sq. ft. has since been purchased for new buildings, for additions and changes to meet a national program of rearrangement.

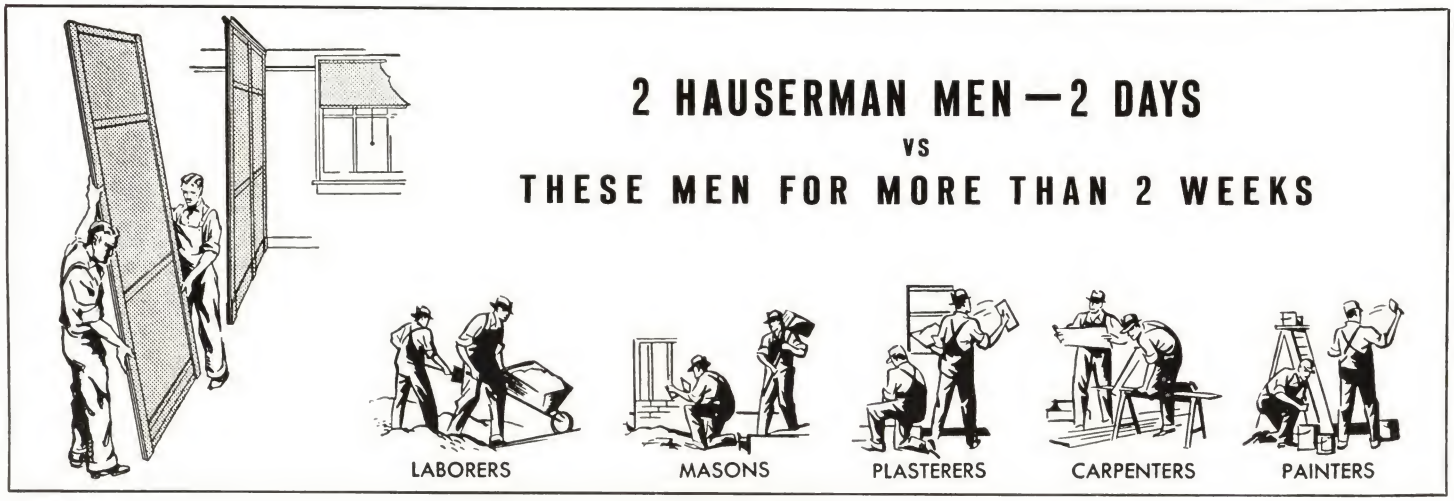
In another instance a user made 1,200 alterations on an installation of 225,000 sq. ft. during its first three years because of unpredictable changes. These changes have already absorbed the difference in cost between plaster and tile partitions and Masterwalls, plus an additional $25,000.00 savings, and these Masterwalls still have at least "25 years to go."

Experience has shown that all partitions must be moved sooner or later. It is the unavoidably high cost and inconvenience of moving plaster and tile as well as inadequate and combustible wood partitions that have started a definite trend toward modern types of movable steel partitions . . . toward Masterwalls.



BUSINESS AS USUAL

Masterwall alterations are made expeditiously quietly and quickly. Many progressive owners of Masterwalls keep up-to-date by improving their office layouts frequently with little interference with business routine (*as illustrated above*), in comparison with tile and plaster changes on the opposite page. Economies are effected not only by increased efficiency, but also through reduced maintenance costs and a better use of office space.



A MASTERWALL FOR EVERY PLACE AND PURPOSE

MODERNIZATION PAYS DIVIDENDS

• reclaim "forgotten" spaces with Masterwalls



BEFORE

One entire floor of the Real Estate Trust Building, Philadelphia, Pa., was recently modernized for the General Refractories Company. Before and after illustrations show the elevator lobby with new walls of Flush Steel "AA" Masterwalls in flat grey finish with stainless steel trim, and elevator doors finished blue. The balance of General Refractories' Offices are completely modernized in Semi-Flush Steel, Soundproof "CC" Masterwalls. This type of modernization can be done in your building at a comparatively small cost.

AFTER



UNSIGHTLY SPACES in old office buildings, in factory buildings, in warehouses and in stores, have been most economically turned into modern offices by the use of Hauserman Masterwalls. In the same way, many other attractive and useful rooms have been built into spaces that were formerly not used, or brought low rental returns.

In every instance the change has been phenomenal. The attractiveness, the appearance of permanency and the convenience of these new rooms have been almost unbelievable . . . when compared with the old spaces before the modernization work had been started. And besides the business advantages gained, these improvements often save the cost of new buildings or additions.

It is no longer necessary to give up desirable locations and move out of old unsightly interiors when these spaces can be so easily and quickly modernized with Masterwalls.

Building managers are holding old tenants and gaining new ones by providing new, efficient and fine appearing offices with Masterwalls.

Below are shown, "before and after" modernizing illustrations of one entire wing of the General Electric Company's offices at Schenectady, N. Y. This rearrangement plan furnished each of 22 patent attorneys with private offices. Well-lighted stenographic space was also furnished outside of each office. These changes and alterations were handled with minimum interruption to business. After the installation was completed it

BEFORE



MASTERWALLS FOR LONG SERVICE

• durability that resists all the elements

THE LIFE AND DURABILITY that have always been built into these better steel partitions have long ago proved the soundness of a Masterwall investment. "Still going strong" is what hundreds of users are saying, after having made many alterations, every one of which brought worth-while savings, along with practical advantages.

The basic reason is: "THEY'RE BUILT OF STEEL," and steel gives them the sturdiness, the appearance of permanency, the ability to withstand the wear and tear of everyday use as well as the repeated moving to meet changing conditions. It is "Steel" as well as the way "Steel" is designed and built into Masterwalls that assures permanent appearance and long life.

Old style partitions are fuel for fires. Not so with Masterwalls. Steel resists fire. In one instance a Masterwall installation withstood a fire caused by several thousand gallons of paint which burned intensely for over two hours within a few feet. These Masterwalls were red hot but needed only repainting and are still in use, 11 years later.



BEFORE

These before and after illustrations show how effectively space in an industrial building can be modernized into fine executive offices adjacent to plant with Soundproof Type "CC" Masterwalls. All radiators and piping were nicely enclosed by Masterwall wainscoting and window embrasures. The inside or corridor wall separating private offices from general offices has double glazing (*see page 28*) which facilitates soundproofing and provides light in the interior general offices. Masterwalls answer all modernization needs was found necessary to move a few of the doors. This change, which shows the flexibility of Masterwalls, was easily made overnight. Besides the advantage of attractive and modern offices, better light and a general clean-cut feeling was obtained through the use of light finished Masterwalls. More people and more production at comparatively little cost. Masterwall Type "CC" was used throughout these new offices.

AFTER



AFTER



TIMES ARE CHANGING — MOVABILITY PAYS

NOISE EFFECTIVELY ELIMINATED

• it pays to buy quiet

QUIET — Few investments made by management will pay greater dividends than that for noise elimination. It pays to buy QUIET. In one example where complete records were kept, the results were as follows:

Office efficiency increased 8.8%. Typists' errors were reduced 29%. Business machine operators' errors were reduced 52%. Labor turnover was reduced 47% and absences decreased 37.5%.

There are many other examples where Masterwall offices have been erected in the middle of noisy factory departments with remarkable results. Cases such as these prove the value of soundproof Masterwalls.

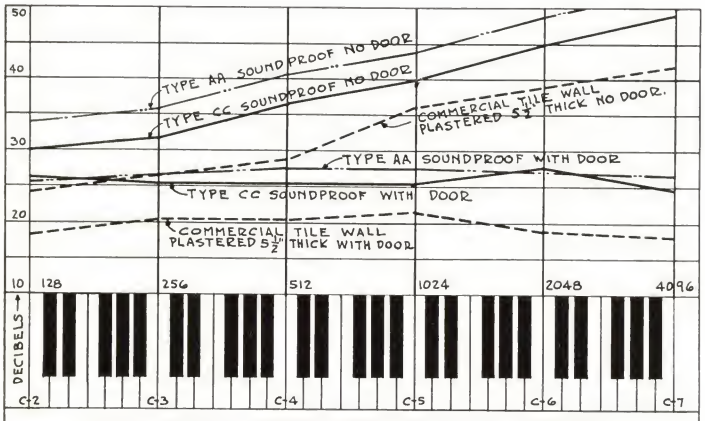
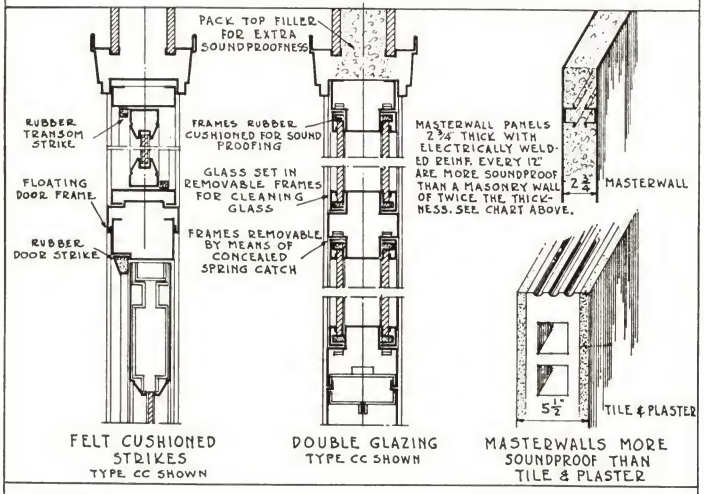
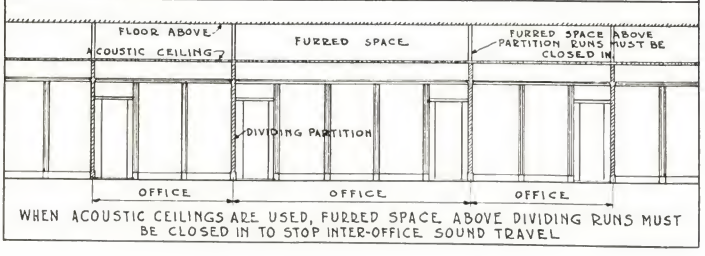


CHART SHOWING SOUNDPROOFING (VALUE IN DECIBELS) OF HAUSERMAN MASTERWALLS TYPE AA & CC WITH & WITHOUT DOORS COMPARED TO PLASTER WALLS OF TWICE THE THICKNESS.





WHEN ACOUSTIC CEILINGS ARE USED, FURRED SPACE ABOVE DIVIDING RUNS MUST BE CLOSED IN TO STOP INTER-OFFICE SOUND TRAVEL

METHODS OF CORRECTION — To eliminate the distraction of excessive office noise two methods must be followed — (1) isolate excessively noisy departments and provide adequate soundproofing between offices to prevent transmission through walls — (2) lower the loudness level of noise within the office by the use of sound absorbing materials. In small rooms the walls must be used as the ceilings do not provide sufficient surface for sound absorption treatment.

MASTERWALL ACOUSTIC CEILINGS — Sound absorbing ceilings are furnished for the finest offices, laboratories or test rooms from Hauserman complete stock, see details, page 39 for various types. High sound absorption is obtained by use of perforated steel panels (licensed by Burgess) and a sound absorbing core of mineral wool.

Adjacent chart shows the decibel loudness reduction (soundproofing value in decibels) of Hauserman Type CC and AA De luxe Masterwalls with and without doors compared to tile and plaster walls of more than twice the thickness. The effect of inserting a door in a partition is readily seen. The decibel reduction is shown for the standard test frequencies. This demonstrates that Masterwall types CC, AA, BB and EE when packed with insulation are all more soundproof than a tile and plaster wall of greater thickness.

MASTERWALL DOORS — Hauserman flush steel doors are much more soundproof than the average paneled door in wood or steel. The over-all soundproofness of a De luxe Masterwall with a door in it is much greater than a tile and plaster wall with the ordinary wood or steel doors. Hauserman doors with rubber strikes and floor seals substantially increase this soundproofness. (Details page 20.)

MASTERWALL TRANSOMS — It must be recognized that open transoms, offset the soundproof values of partition walls and are not recommended. However a rubber sealed transom provides some sound reduction. Ventilation if possible should be provided through a sound absorbing air duct, built into panel units on thick types.

DOUBLE GLAZING — Where soundproofness is desired and either vision or light are necessary, either double glazing or extra thick glass must be used. See page 20 for Hauserman Double Glazing Construction.

SOUND TRAVEL — Where a series of soundproof offices are planned under a suspended ceiling, caution should be exercised to run dividing walls completely to underside of slab or close off space between ceiling and underside of slab with packed top fillers, directly over each dividing wall. This prevents sound travel from one room to another in space above suspended ceilings. See detail at left.

ACOUSTIC MASTERWALLS

• for quiet rooms, test rooms and offices

ACOUSTIWALLS — The Hauserman answer to this growing problem of office and industrial noises is complete — worked out by extensive research and proven under exacting conditions of actual usage. The Hauserman Acoustiwall is a soundproof movable steel partition with absorbing surfaces either or both sides for reduction of noise levels to any desired degree.

Acoustiwall Units are intended for use wherever acoustic treatment is needed for reducing noise levels. They are needed in stenographic rooms, and in all offices where noisy business machines are used. Special rooms for industrial testing and quiet conditions despite surrounding noise can be made with Masterwalls. They are extremely important in executive offices where quiet is valuable. The movability feature permits location or relocation of acoustic treatment as an integral part of the wall in any quantity desired. Acoustiwall units make possible adequate quieting of small offices due to the large area of wall surface available — which is unobtainable with ceiling treatment only. A complete description of these Hauserman types will be found on this page and page 20.

The keynote of today's business tempo demands efficiency. Everyone is becoming sound conscious. Efficiency means quiet whether in the office, school or workroom. Isolated quiet rooms in noisy factories increase production. Test rooms (see details page 20) of various types may easily be installed or moved in your factory.

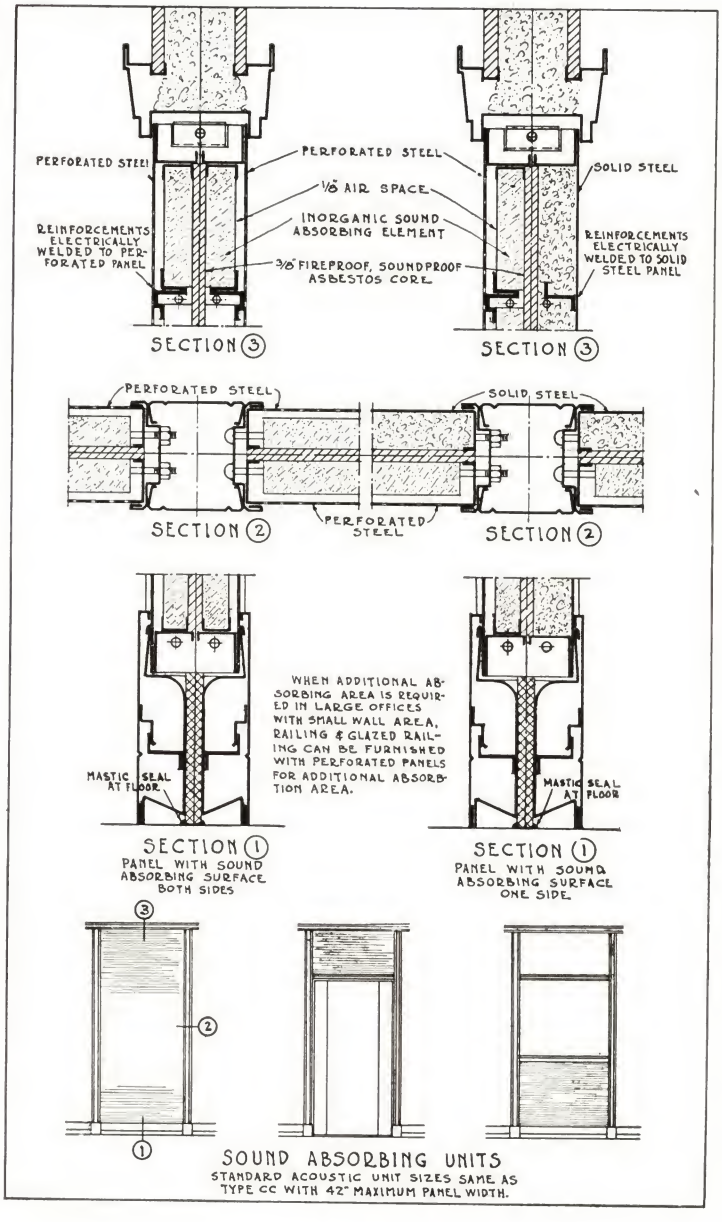
HAUSERMAN ACOUSTIC SERVICE — Competent, experienced acoustic engineers with latest electrical noise level and sound transmission recording apparatus are available. Accurate field data permits definitely determining the means necessary for securing a desired result. This insures your investment in soundproofing or sound absorbing facilities actually delivering the quiet you pay for.

ACOUSTIWALL FEATURES — (Type CC illustrated). This Acoustiwall treatment applies to types AA and BB as well as to type CC (s) illustrated and preserves all of the features and characteristics of each type permitting the mingling of Acoustiwall and solid steel panels in the same wall interchangeably. Acoustiwalls supply to acoustic treatment the same advantages of re-use, movability, flexibility and salvage value, that have made Masterwalls the most economical form of partitioning.

CONSTRUCTION — This type of partition consists of a fireproof soundproof core, with a layer of sound absorbing mineral wool, covered by a perforated steel panel (licensed by Burgess).

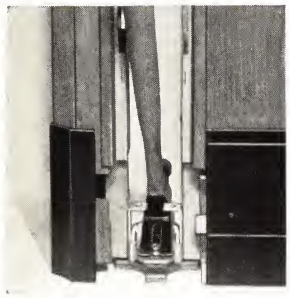
It is furnished with either one or both sides sound absorbing. Where only one side is desired with sound absorbing properties, the opposite face is solid. Exterior appearance aside from the perforated steel panel faces is identical with its corresponding type.

HEAT INSULATION — The same inorganic packing that is used for sound reduction in panel units, will insulate walls for air conditioning. Heat conductivity of packed panel units is 0.10 B.t.u. per hour per sq. ft. per degree Fahrenheit. Air conditioning manufacturers state that these walls save as much as 20% in cost of air conditioning. This means real economy in heating or cooling costs when separating air-conditioned offices or when used as vestibules. These facts are applicable to types AA, BB, CC and EE.



MASTERWALL EXCLUSIVE FEATURES

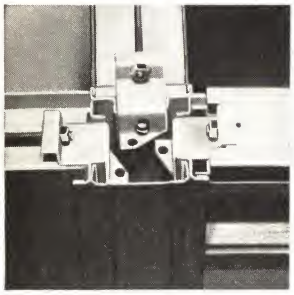
• insure built-in value



FLOOR CONNECTIONS (Patented)— Floor stampings are held in place with a removable double-headed drive nail or lag screw. Any panel removed or replaced without disturbing adjoining units. Weight of panels rests directly on floor through one or more patented interlocking shims. Provides a solid foundation despite usual variance of floor level.

RIGID CLIP ASSEMBLY (Patented) — Panel units, door units, and ends are assembled with Patented Interlocking clips. No exposed screws. Concealed clips 18" to 24" on each side lock units rigidly together. Post caps are snapped over clips like the back of a watch. Used in types BB, CC, FF, R, W, WW.

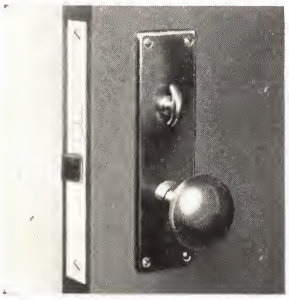




UNIVERSAL POST (Patented)— Partitions may be run in any one, or all, four directions from a single point at any time. There is no necessity for disturbing original installations for making additions or changes. No adapters or special connections are required. All methods of assembly and access are concealed with snap-on post caps. Above applies to all types, except AA, DD and TE.

TIE ROD ASSEMBLY (Patented)—No welding. Permits entire assembly of the panel unit. Provides for field cut down of one panel to make one or more smaller or special panels without refinishing. Permits repairing or replacing a single damaged part. Adapts material on hand to new layouts. Eliminates all waste. Used in types CC, FF, WW, R, W.

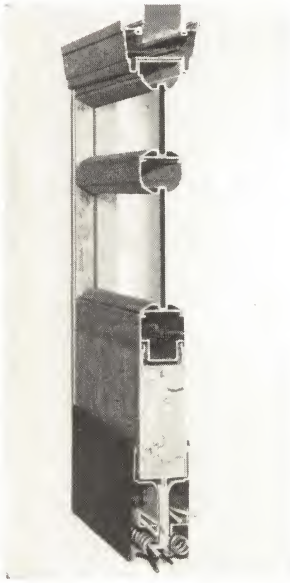




INTERCHANGEABLE HARDWARE Doors are mortised to accommodate any type of Hauserman lockset with complete interchangeability. A complete quality line of hardware is stocked. All made to fit the same mortise. Bitt key, latches and cylinder locks are stocked in Brushed Bronze (U. S.-10) or genuine Bauer Barff (U. S.-18) Finish. See pages 42, 43, 44.

LAYIN WIRING DOOR FRAME — Layin wiring raceway for high and low tension wiring is provided around door in types AA and BB, and is covered by removable snap-on trim. Wiring is entirely layin and does not require fish wiring across door head. Switches can easily be installed in door trim when desired. (See fittings page 45).





WIRING FACILITIES — CORNICE — Buzzer or telephone wires may be laid in the outer edge of the cornice and effectively concealed, in types AA, BB, CC and FF. Removable layin picture mould is available with steel tops both sides of partition on types AA and BB.

LAYIN WIRING BASE (Patented) — The hook on base is easily removable for convenient access to the two layin wire chases on each side. Available in types AA, BB, CC, FF, W, WW.

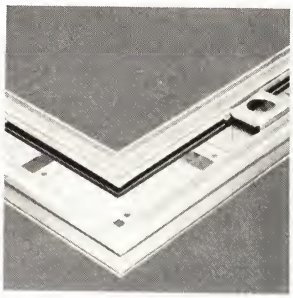
POSTS — Posts provide for wiring between base and any of the upper rails or cornice, except past transom operator in type FF. (use adjacent post, see details page 46) Electrical fittings are readily installed on any post or base and are carried in stock. See pages 45, 46, 47.

REMOVABLE LAYIN WIRING END FILLER — Types AA and BB are provided with a removable layin wiring end filler. Each side is removed independently and provides easy interconnections between base and picture mould. All wiring in types AA and BB is completely layin on each side of partition. Base, end fillers, door trim and picture mould are all removable, enabling whole face of one side of partition to be wired easily and without use of fish wiring at any place. Sufficient space is provided in base, door frame and end fillers for carrying suction and/or drain lines for air-conditioning units. It is very easy to run these pipes concealed. For further electrical and air-conditioning details, see pages 46, 47.



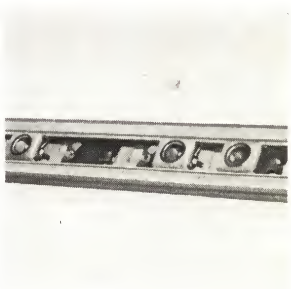
MASTERWALL EXCLUSIVE FEATURES

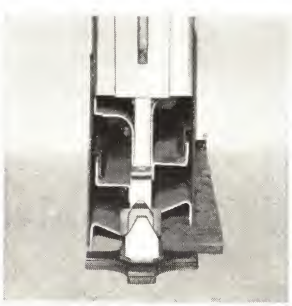
• add many practical advantages



CORNICE DETAILS (Patented) — Cornice can be rearranged in any combination of corners and intersections. Two-way corners are mitered, welded and fully finished at the factory. Cross runs added at any point. Wiring and post connection holes on 5″ or 6″ O. C. Welded tie bars make cornice a rigid tubular member. All types except when removable picture mould is furnished on types AA and BB.

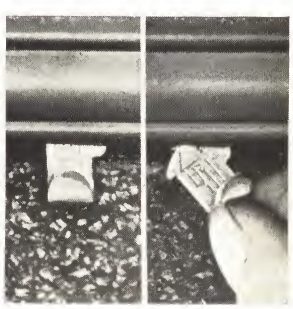
CORNICE SPLICE (Patented) — The Hauserman cornice splice expands the adjoining ends to exactly the same size and draws them together with the diagonal bolts. Cornice is manufactured in a number of standard lengths punched in multiples of 5″ and 6″ according to type to meet the requirements of any partition layout or rearrangement.





ADJUSTABLE BASE & PLINTH (Patented) — The outer bases and plinths are adjustable to the floor level independently of the panel unit and each other. Provides contact with the floor despite irregularities on either side. Floor coverings inserted without disturbing the partition when necessary. On types AA, BB, CC, FF, WW and W. Each side is adjustable separately permitting different thickness of floor covering.

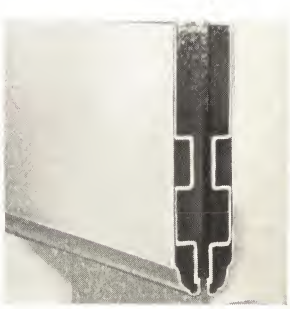
PICTURE HOOK SLOTS (Patented) — Picture hooks for hanging pictures, charts, racks and maps on any panel are inserted in inconspicuous slots under transom rail. All types except AA and BB steel, which have continuous picture slot in removable picture mould. (See sections, page 14).





ADJUSTABLE STEEL TOP FILLERS — Flush steel, single line or double line joint top fillers to match panel widths are provided for types AA, BB and are easily erected and removed. They are salvable and have the same life and re-use as panel units. Steel top fillers are also available for types CC, FF, WW, R and W. (See details page 39).

DOOR GLAZING (Patented) — Glass for all doors is inserted through slot in top rail. It is taken out by removing and inverting door and jarring on wood blocks. This eliminates all loose moulding, stripped or exposed screws. Doors may be steel glazed in a like manner. For Door Types see page 37.

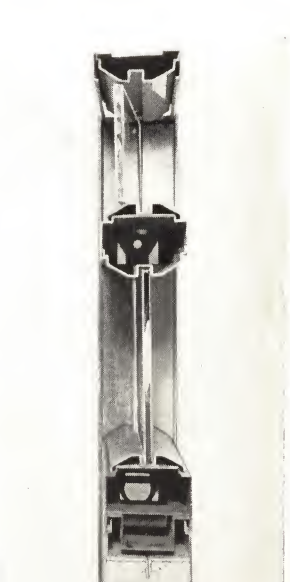




ADJUSTABLE DOORS (Patented) — Floating door frame permits adjusting door clearance to accommodate changes in floor levels or different floor coverings. Adjusted by loosening three bolts each side of door frame. Doors with hardware applied are assembled in their frames at the factory insuring accurate fit. All doors are reinforced for door checks.

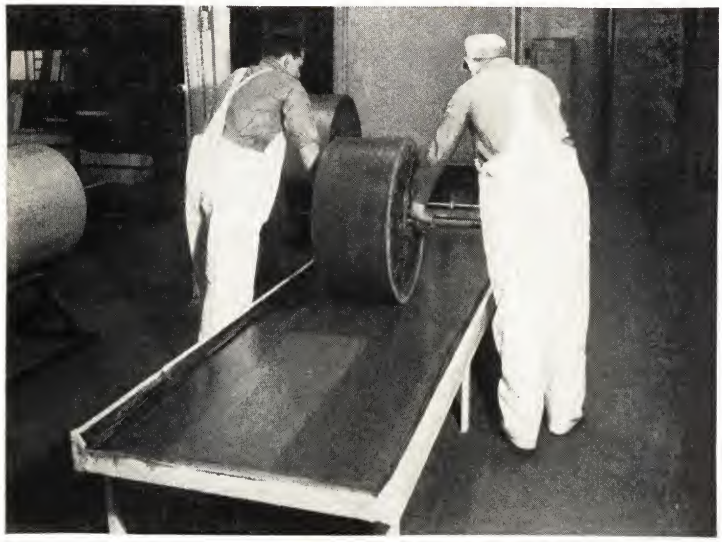
CONCEALED TRANSOM OPERATORS—The exclusive design concealed operator is substantially and compactly built, assuring free and easy operation and long life. It can be installed at any time and concealed within the post or door trim. A small crank handle operates a worm gear which opens the transom to a full 90 degrees, and locks it in any position. Fits all types but HK, K and H.

TELESCOPIC GLAZING (Patented) — The expense and irritations incident to cracked glass caused by compression, warping or binding, are eliminated by use of the Hauserman telescopic method of glazing. To set a lite of glass the grooves are bed puttied. Stop in upper rail is slid up within the rail to admit glass. Glass is inserted to full depth in one vertical groove, then swung into plane and dropped into the bottom groove and centered. Movable stop is lowered by means of a hook inserted in the picture hook slots. Glass is removed by reversing the glazing operations. If putty is hard, drive up telescopic stop, remove nuts from tie-rods, and spread verticals to free glass. Used with all types, except H, HK and K.



ATTRACTIVE FINISHES

• meet each customer's preference

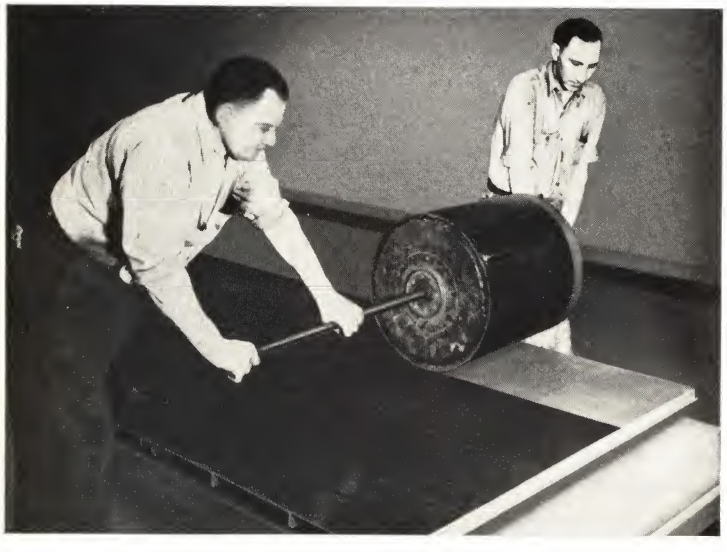


GRAINING METHOD—Rich natural reproductions of fine wood grains are made under license by the exclusive Oxford Varnish Company patented process, in a wide choice of different woods and finishes. The comparatively small extra cost of graining produces a great return in the way of refinement, comfort and permanent satisfaction. These finishes are always admired, the easiest to live with and have the lowest maintenance.

The upper illustration shows graining being transferred from a copper electroplate to a flexible composition roll. The plates are made from carefully selected woods by photograph and are similar to halftone or rotogravure plates. These plates are expensive (costing upwards of $1,000.00 each) but are faithful to the finest detail and we maintain many different plates with different types and character of grains.

The lower illustration shows the graining being transferred from the roll to a panel plate which has been previously ground coated with enamel and sanded. Even when grained from the same plate, no two panels will be alike as different parts of the copper plate will be reproduced on different parts of each panel.

The process provides as much variation of character as actual wood veneering and yet permits of future additions in perfect harmony with the original installation.



MATERIALS — Specifications are given under item 17, page 49. Ground coats are synthetic enamels baked on which make a paint film having many times the toughness, resistance to abrasion, adherence, fastness of color and general wearing qualities of the older types of oil baking enamels. Top coatings are pyroxylin lacquer of the highest grade and these finishes last indefinitely with no maintenance other than periodic cleaning. Our laboratory gives them rigid water, bending, dingeing and abrasion tests.

COLORS — See the Hauserman color book showing actual colors on metal plates. Hundreds of standard colors carefully chosen as background colors, or harmonizing accent colors provide suggestions for any decorating scheme.

GLOSS—Standard finishes are all furnished in an egg shell or satin finish gloss which provides a restful atmosphere without disturbing or distracting high lights and reflections. We discourage the polishing of wall surfaces.

TEXTURES AND SPECIAL FINISHES — Stippled finishes varying from a fine sand effect to a course spatter effect furnished at additional cost. Texture finishes are effective on flush walls. They are easily kept clean and are free from glare.

Special grease and soil proof finishes that stay clean and are easily maintained have been developed. Acid, alkali and moisture resisting finishes in a limited range of colors, also metallic or iridescent finishes in any degree of color may be furnished at additional cost. Call the Masterwall Engineer.

TWO COLORS — Black mop strip 2″ high or black base 6″ high is recommended for any light color job and frequently used with all colors. We discourage bronze mop strip due to unsightly discoloration and maintenance expense. We advocate black mop strip instead. Our improved finishes withstand present-day cleaning materials. Grained or dark color doors are recommended with all light colors. (Specify if door only or door and frame). Different colored rails and panels are available but not generally used.

FIELD PAINT — Masterwalls can be furnished in prime coat for field paint but we do not advocate it as the field finish is more expensive, less uniform and shorter lived. Prime coats are not uniform and will have variation in color and coverage.

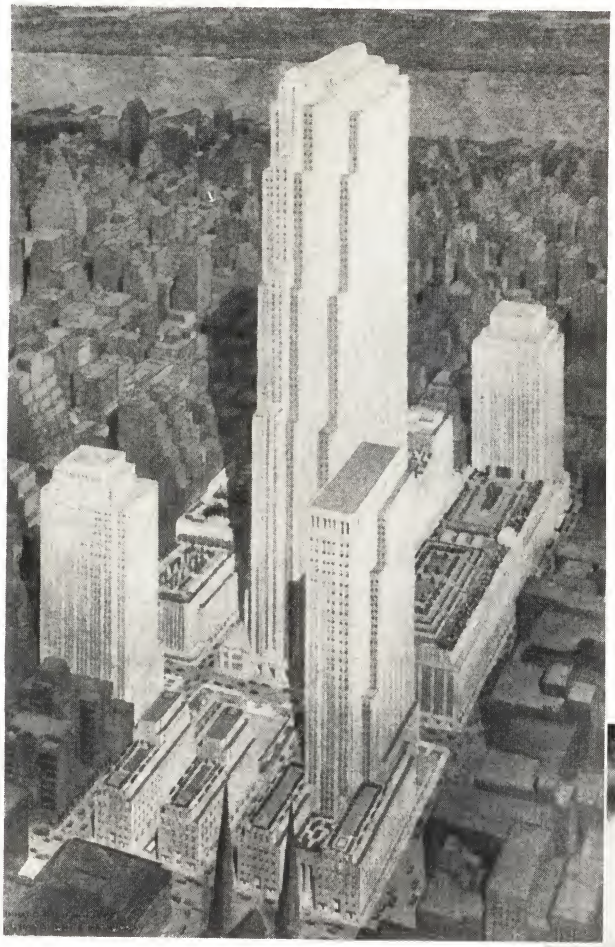
WHITE FINISH — There is no pure white finish and all whites deteriorate and turn yellowish. Always specify off white shades — the further off the better.

CLEANING — A careful washing with Ivory or Lux soap and water well rinsed with clear water is recommended. It is important not to rub severely. If a cleaning fluid is preferred we recommend "Masterwall Cleaner" specially prepared to preserve the satin finish, follow directions on can specifically. Any cleaner should merely remove the dirt without leaving a film or polish or shine the surface.

HARDWARE is stocked in cast or extra heavy wrought bronze in U. S. 10 lacquered brushed bronze finish. Butts are planished steel ball bearing plated to match. Black finish U. S. 18 (Genuine Bauer-Barff) is furnished on cast iron or wrought steel lock trim. Knob shanks and thimbles are cast with machined bearings. All escutcheons are reinforced at the knobs with a special steel collar. Bronze finish is protected with perspiration resistant lacquer, a unique and valuable improvement. Accessories are stocked finished to match hardware. (*See illustration pages 42 to 45.*)

EVIDENCE OF LEADERSHIP

● Masterwalls in the country's greatest skyscrapers



EMPIRE STATE BUILDING

Shreve, Lamb & Harmon
Architects

Type W is being used as building standard in 8′ 5½″ elevation finished 4194 walnut grain.



CHRYSLER BUILDING

William Van Alen
Architect

Type R is being used as building standard in 8′ 8½″ elevation finished 4094 walnut grain.



ROCKEFELLER CENTER

Reinhard & Hofmeister
Corbett, Harrison & MacMurray
Hood & Fouilhoux
Architects

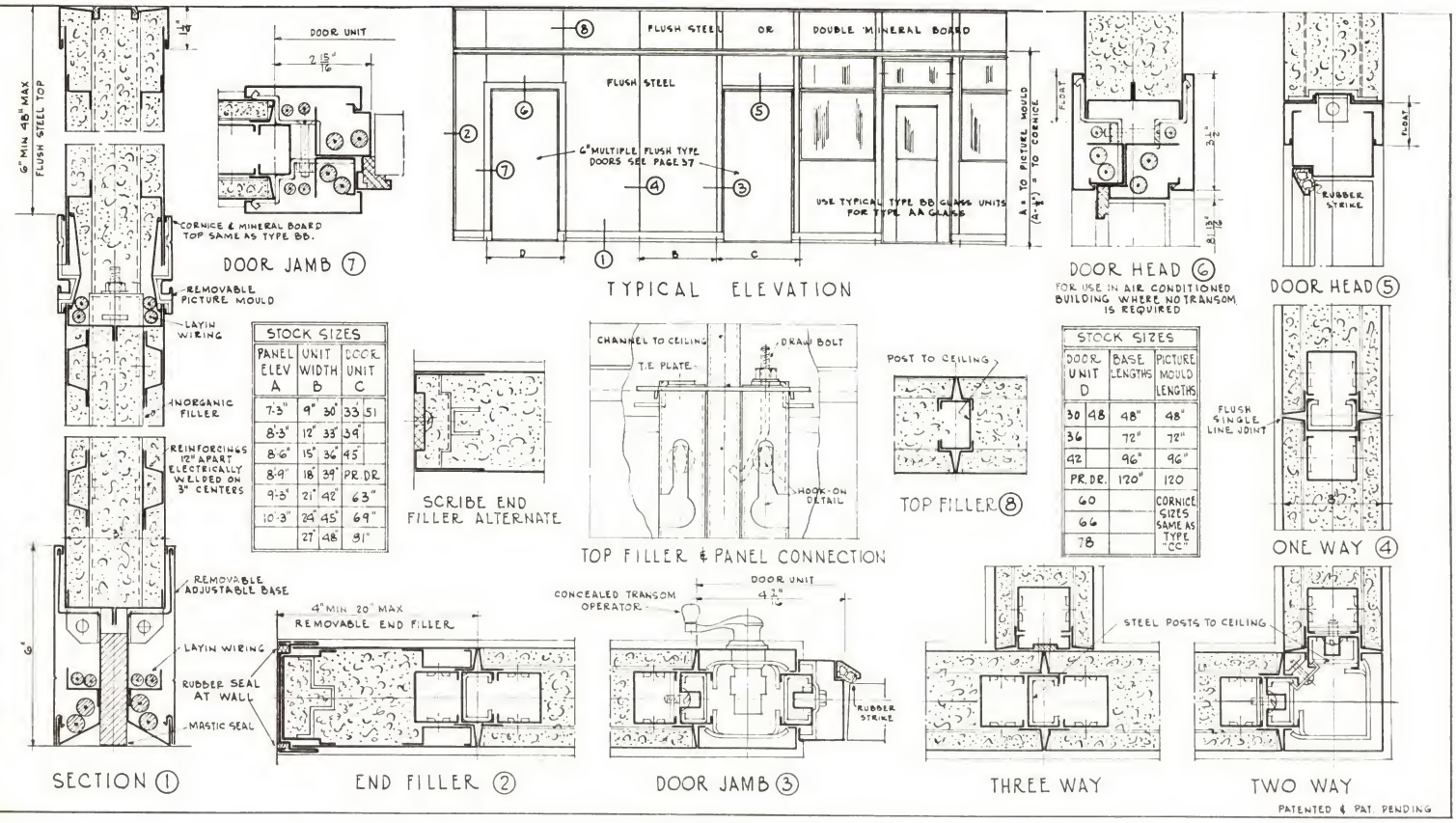
Type WW is being used as building standard in 8′ 2½″ elevation finished 4946 Brown.

New installations, arrangements and tenant changes in the above buildings, as well as in over 100 office buildings in the U. S. A. and in Canada are made from Masterwall stocks with speed and no fuss, muss or dirt.

A HAUSERMAN PARTITION WILL NEVER BE AN ORPHAN

TYPE AA FLUSH STEEL

• 3" thick, De luxe construction, single line joint





Type AA Flush Steel and Steel and Glass De Luxe Masterwalls are 3" thick solid packed and have shop assembled panel units. Type AA flush steel is more soundproof than tile and plaster. These walls are absolutely flush permanently flat steel walls with a straight single hair line joint between all panels and ends. Type BB glass units and details are used for Type AA glass. Type AA glass has absolutely flush steel panels below the chair rail with glass above.

Flush steel panel units are shop assembled and are stocked in 3" multiples 12" to 48" in 6 elevations. Steel and glass panel units are stocked in 3" multiples 12" to 60" in 6 elevations with 42" and 54" chair rail and have patented telescopic glazing throughout. Flush steel panels, both in the all steel and steel to chair rail are 3" solid packed with inorganic sound-deadening filler. De luxe construction, steel reinforced flat steel panels solid packed. Reinforcings spaced 12" apart electrically welded on 3" centers. Panels have deadening coat of mastic on inside. A concealed telescopic steel post at each panel joint anchored floor to ceiling is furnished with steel top filler. Packed double flush steel top filler

Department of the Interior, Washington, D. C.

31,000 lineal feet of walls and closets in this installation.

THE E. F. HAUSERMAN CO., CLEVELAND, OHIO

TYPE AA STEEL & GLASS

○ 3" glazed, De luxe construction, double line joint



Dept. of Interior,
Washington, D. C.

Type AA 9'-3" steel glass ste
elevation single glazed with flu
steel top piller. Gray stipple finis
Closet enclosed by type AA 9'-3
flush steel.

matches the panels and is stock. A double mineral board top with either picture mould or cornice is available. The door and panel units are interchangeable. End fillers have a flat mould at the wall or are strictly flush (at additional cost). The end filler wall channels have a felt seal which takes up all wall irregularities. A felt seal is also available for the bottom of doors, an important item for sound reduction. (See details page 20).

There are lay-in wiring facilities, i. e., in the base, through the end fillers, around the door frames and also through the picture mould. These lay-in facilities are also used for concealing air-conditioning lines and other piping, if desired.

The door trim is absolutely flush. Door frames are full floating type with a rubber strike. Transoms with concealed operators, fixed glass panels, or flush steel panels may be used over doors. A projecting trim door frame is also available for all steel elevations in air-conditioned buildings where no transoms are required.

Double glazing 42" chair rail to transom rail only is carried in stock.

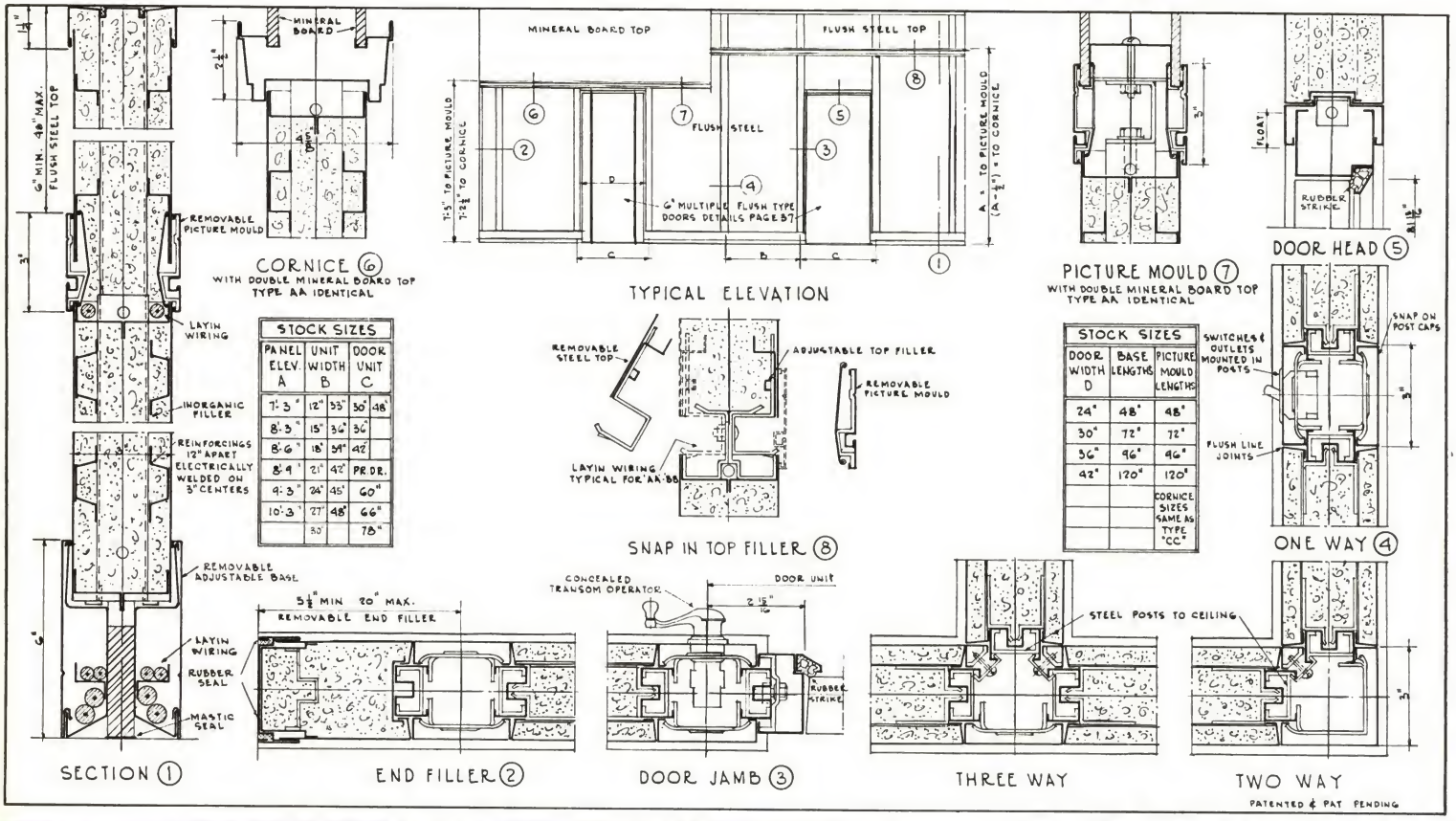
National Steel Co. Lobby
Chrysler Building
New York, N. Y.

Type AA flush steel wainscoat 8-2½" elev. walnut grain finish.



TYPE BB FLUSH STEEL

• 3" De luxe Construction, double line joint, universal post





Type BB Steel differs from type AA principally in that it has a two-line joint, a four-way post assembly and snap on post caps full hight of partition. Type BB Steel is an absolutely flush permanently flat steel wall more soundproof than a tile and plaster wall. Type BB steel and glass has absolutely flush steel panels to chair rail with glass above and is used with type AA steel as type AA steel and glass.

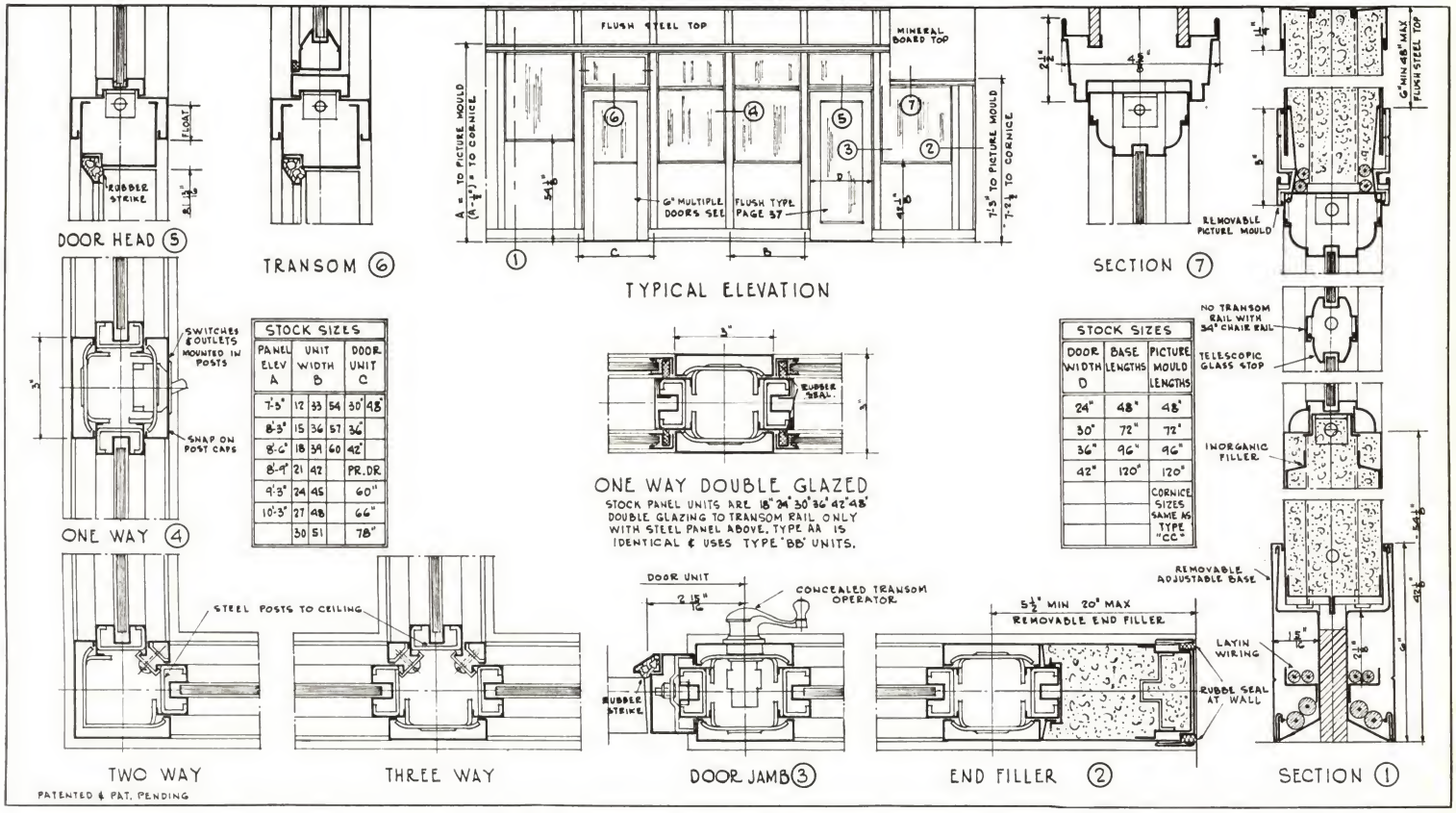
All steel panel units are shop assembled and are stocked in 3" multiples 12" to 48" in 6 elevations. Glass panel units are stocked in 3" multiples 12" to 60" in 6 elevations with 42" and 54" high chair rails and have patented telescopic glazing throughout. Flush steel panels both in the all steel and steel to chair rail are 3" solid packed with inorganic sound deadening filler. De luxe construction, steel reinforced flat steel panels solid packed. Reinforcings spaced 12" apart, electrically welded on 3" centers. Panels have deadening coat of mastic on inside. A universal post provides four-way assembly of

Detroit Edison Co., Detroit, Mich.

Type BB 7'-2½" elevation with double flush steel top fillers. Buff finish black base.

TYPE BB GLASS & STEEL

• 3" glazed, De luxe construction, double line joint, universal post



STOCK SIZES					
PANEL ELEV A	UNIT WIDTH B				DOOR UNIT C
7'-5"	12	33	54	30"	48"
8'-3"	15	36	57	36"	
8'-6"	18	39	60	42"	
8'-9"	21	42			PR. DR.
9'-3"	24	45			60"
10'-3"	27	48			66"
	30	51			78"

STOCK SIZES		
DOOR WIDTH D	BASE LENGTHS	PICTURE MOULD LENGTHS
24"	48"	48"
30"	72"	72"
36"	96"	96"
42"	120"	120"
		CORNICE SIZES SAME AS TYPE "CC"

panel units. The door and panel units are interchangeable. All units are joined by rigid clip assembly which is concealed by snap-on post caps. The flush double steel top filler matches the panels and is stock. A double mineral board top filler either with cornice or picture mould is available. End fillers have a flat mould at the wall or are strictly flush (at additional cost). The end filler wall channel has a felt seal. A felt seal is also available for bottom of doors, an important detail for maximum soundproofness. (Details page 20.)

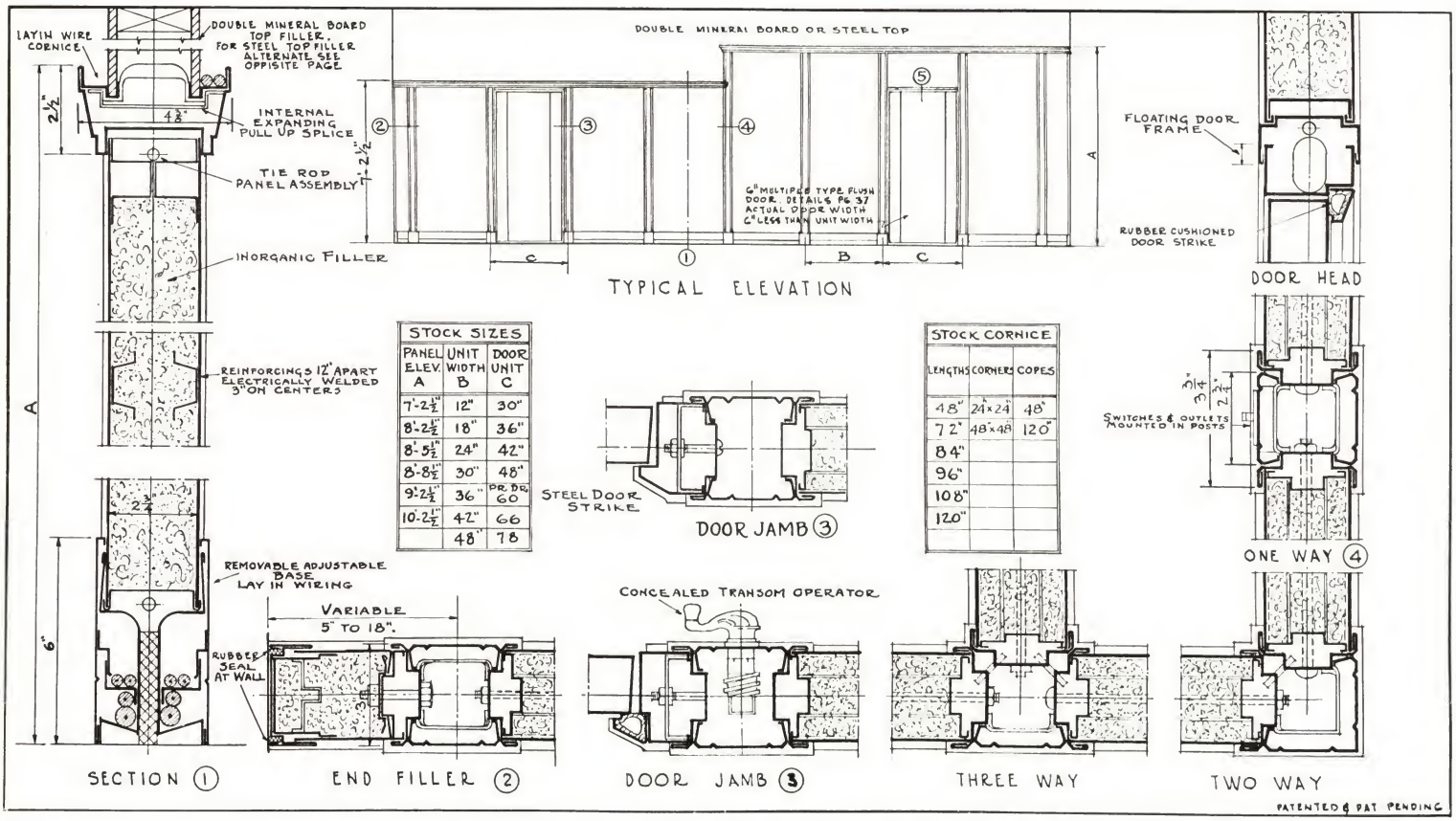
Type BB is provided with layin wiring facilities in base, through the ends, around the door frames and also through the picture mould. These layin facilities are also used for concealing air-conditioning and plumbing lines, if desired. The door trim is flush. Door frames are full floating type with a rubber strike. Transoms with concealed operator are available. Flush steel or fixed glass panels may also be used above doors. Double glazing 42" chair rail to transom only is carried in stock. See pages 32 and 33 for railings and counters.



Type BB 8'-8½" steel glass steel elevation with steel top. Finish mahogany grain.

TYPE CC SEMI-FLUSH STEEL

• 2¾" panel, De luxe construction, 3" universal post



STOCK SIZES		
PANEL ELEV. A	UNIT WIDTH B	DOOR UNIT C
7'-2½"	12"	30"
8'-2½"	18"	36"
8'-5½"	24"	42"
8'-8½"	30"	48"
9'-2½"	36"	PR. DR. 60
10'-2½"	42"	66
	48"	78

STOCK CORNICE		
LENGTHS	CORNERS	COPES
48"	24"x24"	48"
72"	48"x48"	120"
84"		
96"		
108"		
120"		



Type CC differs from BB primarily in that it has semi-flush pilasters instead of flush, a cornice instead of an applied picture mould, with concealed extention post to ceiling, and a 2¾" thick panel instead of a 3" panel. The CC semi-flush steel is a permanently flat Masterwall of de luxe construction, for all office uses. It is more soundproof than tile and plaster. The semi-flush steel and glass is ideal for all general office purposes where visibility or light is desired. Tie rod shop assembled panel units permit field cut down feature.

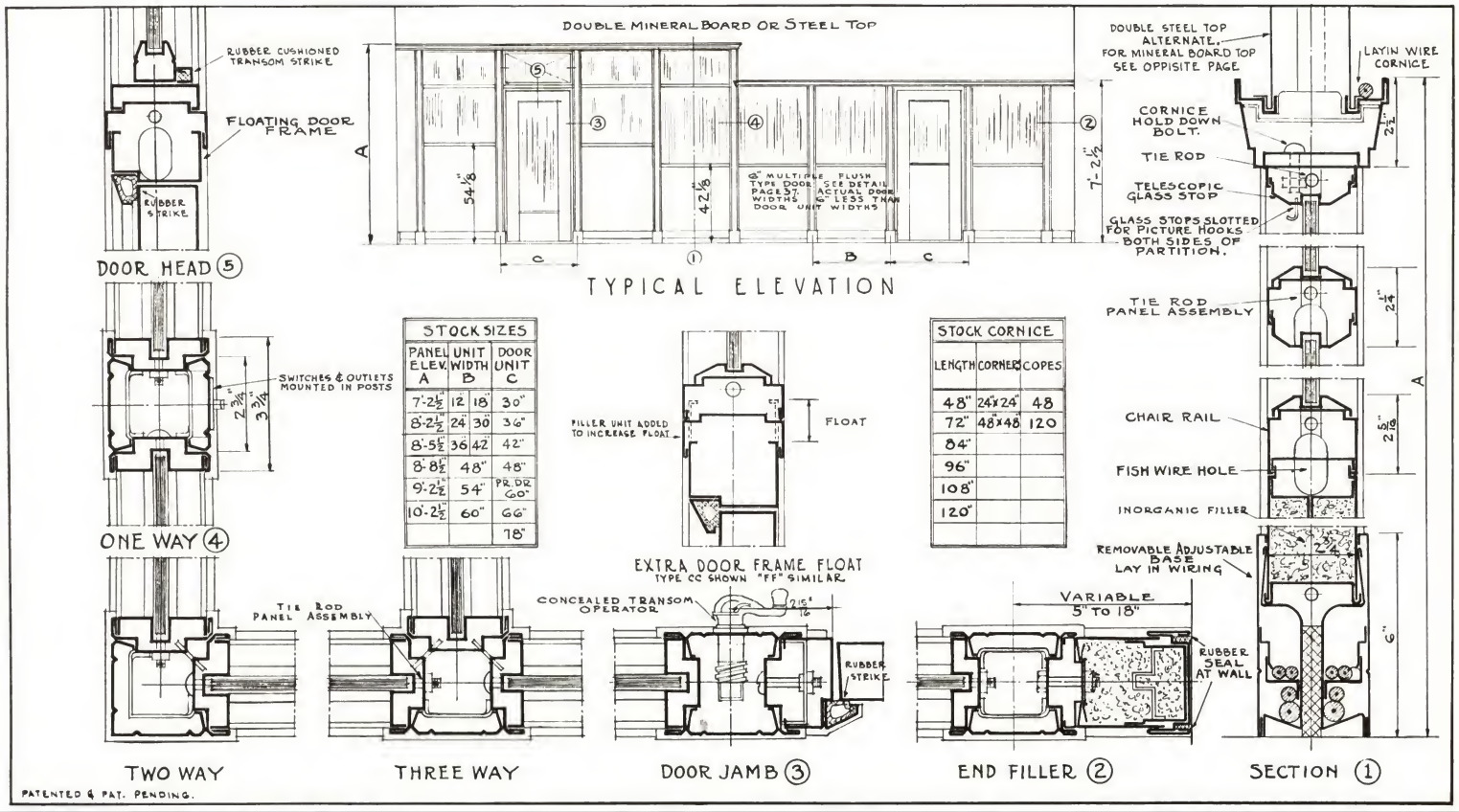
The semi-flush steel panel units are stocked in 6" multiples from 12" to 48" wide and 6 heights. The steel and glass units are in 6" multiples 12" to 60" wide, 6 elevations with 42" or 54" chair rail heights and have patented telescopic glazing throughout. All semi-flush steel panels both in the all steel and steel to chair rail are 2¾" solid packed with inorganic sound-deadening filler. De luxe construction, steel reinforced flat steel

Intertype Corp.,
Los Angeles, Calif.

Type CC 8'-8½" semi-flush steel elevation. Railing 42" high with stainless steel handrail. Grained walnut finish.

TYPE CC-GLASS

• single glazed, 2¾" panel, De luxe construction, 3" universal post



PATENTED & PAT. PENDING.

panels solid packed. Reinforcings 12" apart, electrically welded 3" on centers. Panels have deadening coat of mastic on inside. Type CC has a universal post permitting four way assembly of panel units. The rigid clip assembly of panel units is concealed by snap-on post caps. A double mineral board or double flush steel top filler is optional. Packing is recommended in top filler for soundproofness.

The door and panel units are interchangeable without disturbing cornice, top filler or adjoining units. Layin facilities are provided for wiring or air conditioning lines in base and cornice. The full floating door frame is available in either rubber or steel strike. The doors may be provided with felt seal at bottom for maximum sound reduction. (See details page 20). Transoms equipped with concealed operator or friction device are available. Semi-flush steel panels or fixed glass may also be used over doors. Double glazing 42" chair rail to transom rail only is stocked. See pages 32 and 33 for railings and counters to match.

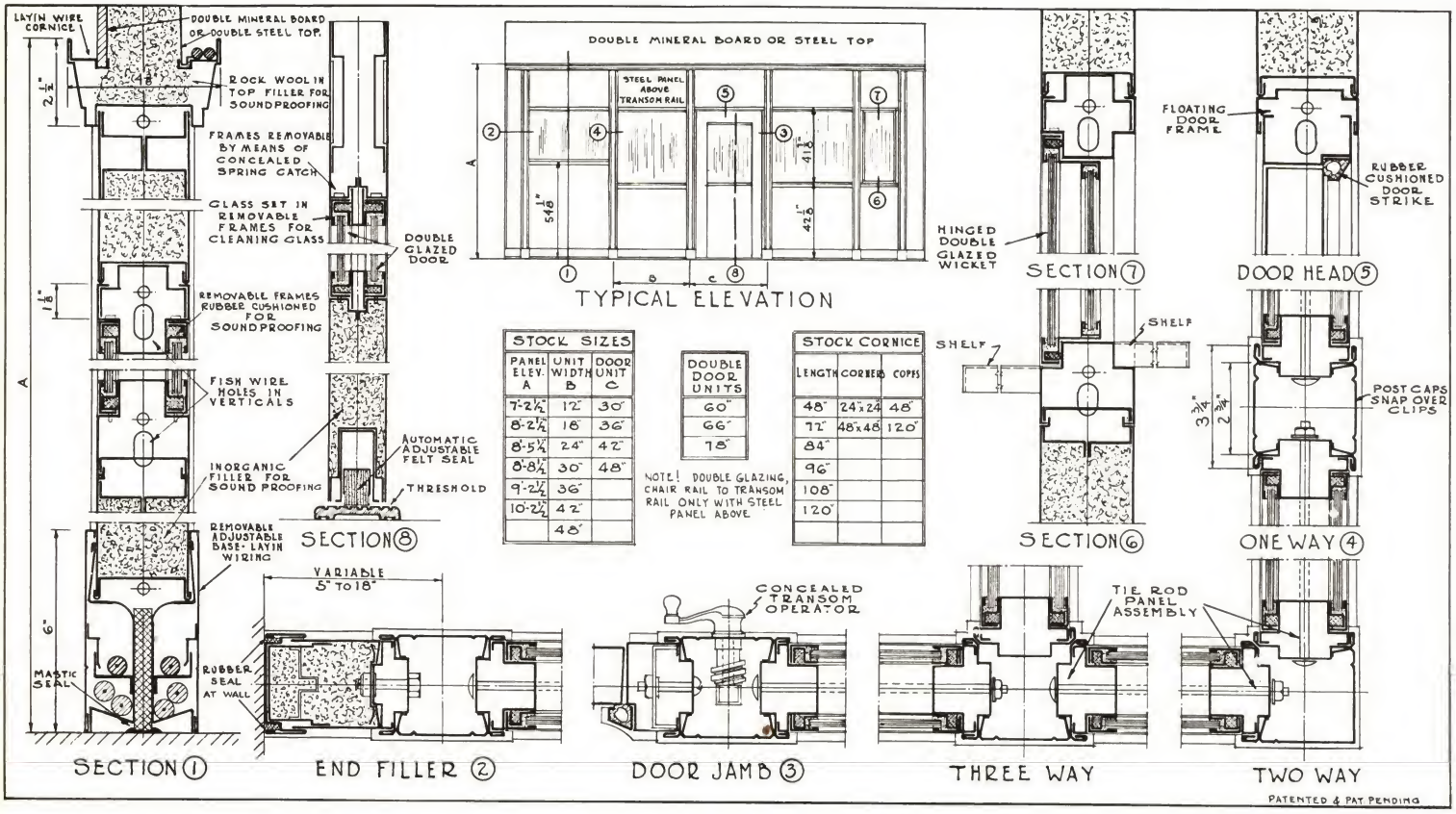
Chrysler Truck Plant,
Detroit, Michigan
Albert Kahn, Inc., Architect



Type CC 9'-2½" elevation cornice high, 54" chair rail. Finish light tan.

TYPE CC-DOUBLE GLAZED

• double glazed, De luxe construction, soundproof, 3" universal post

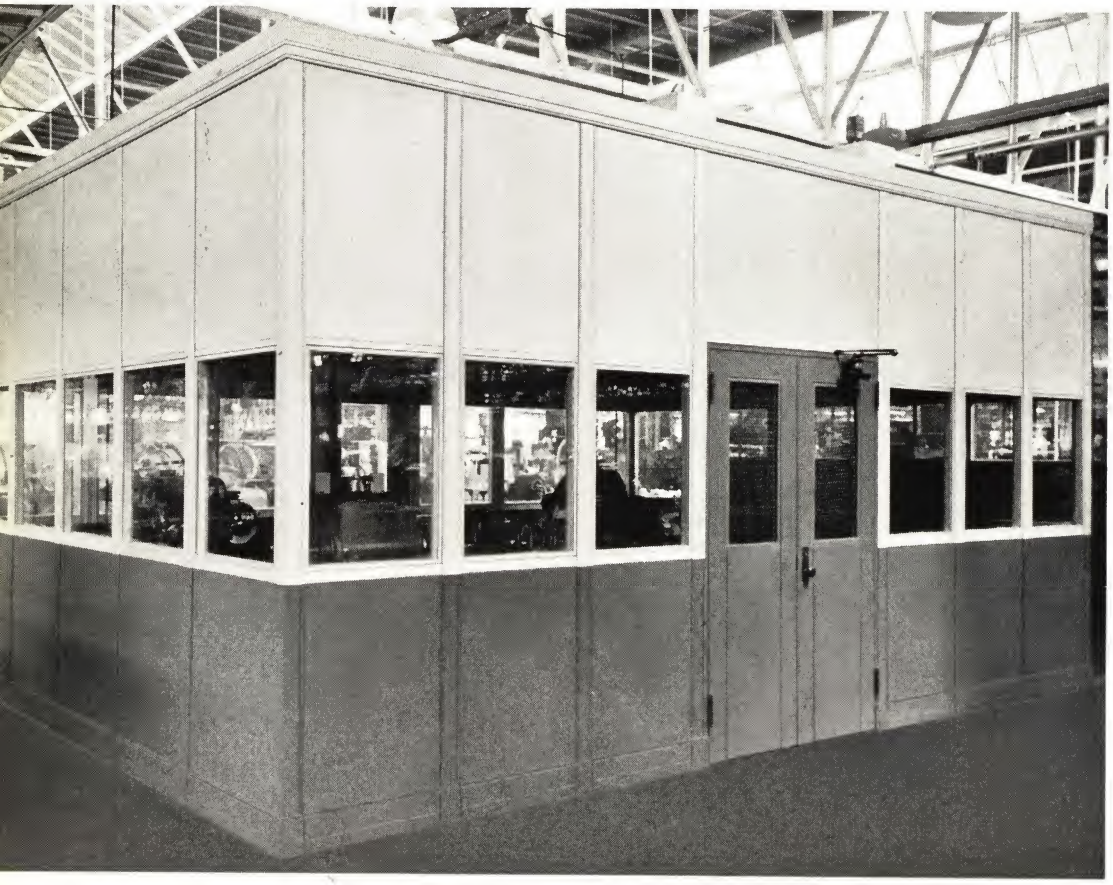


STOCK SIZES		
PANEL ELEV. A	UNIT WIDTH B	DOOR UNIT C
7'-2½"	12"	30"
8'-2½"	18"	36"
8'-5¼"	24"	42"
8'-8¼"	30"	48"
9'-2½"	36"	
10'-2½"	42"	
	48"	

DOUBLE DOOR UNITS
60"
66"
78"

NOTE! DOUBLE GLAZING, CHAIR RAIL TO TRANSOM RAIL ONLY WITH STEEL PANEL ABOVE

STOCK CORNICE		
LENGTH	CORNER	COPES
48"	24"x24"	48"
72"	48"x48"	120"
84"		
96"		
108"		
120"		



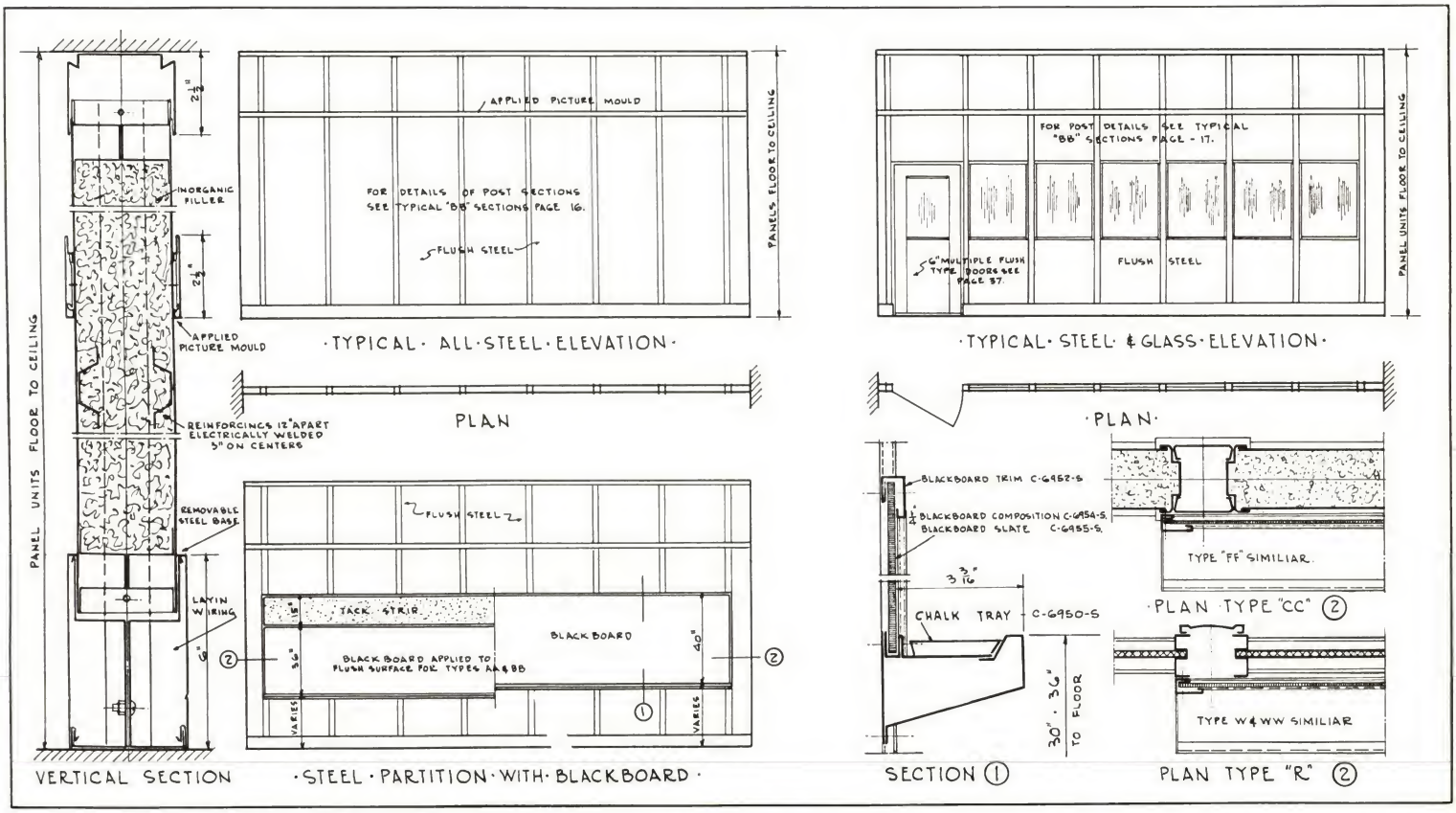
TYPE CC DOUBLE GLAZED MASTERWALLS have double rubber sealed glass frames removable for cleaning the inside of both lights of glass. Double glazing is used for all purposes where light or visibility is essential and where soundproofness is also desired. Similar details are used for double glazing types AA and BB. Panel units are stocked in 6" multiples 12" to 48" wide, 6 heights in steel, glass, steel, elevation only. There is mastic seal at the floor, packing in snap-on post caps, end fillers, cornice and plinths for soundproofness. Packed double mineral board or packed double flush steel top is optional. Tops must be packed if sound insulation equal to double glazing is maintained.

Doors should be provided with felted strike and felt seal at bottom. See details above. Fixed double glazing is used over doors, as transoms are not recommended. SOUNDPROOF TEST ROOM CONSTRUCTION — The illustration shows a soundproof and sound absorbing Test Room installed in the center of a plant. The interior walls and ceiling are acoustically treated for sound absorption while the exterior walls are of solid steel. (See details page 8).

Chevrolet Motor Corp., Tonawanda, N. Y.

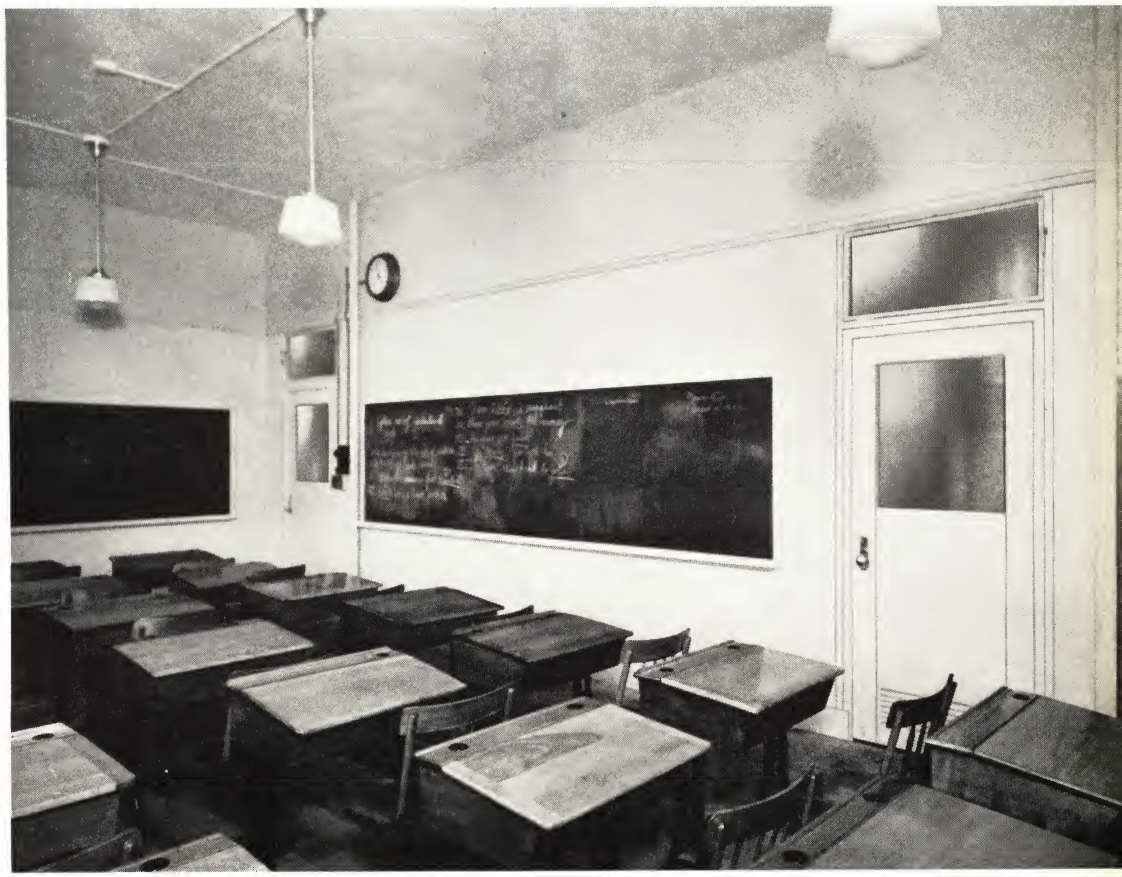
PARTITIONS FOR SCHOOLS

• movable, soundproof, fireproof, low maintenance



EDUCATIONAL training must change with the social and economic conditions which are always changing. School curriculums and methods have had many adjustments in the past ten years. Adjustments will occur with greater frequency in the next ten years as changes in educational systems and training are just now gaining impetus. The future must be considered in schools being planned now to avoid their outmoding by BUILDING IN flexibility.

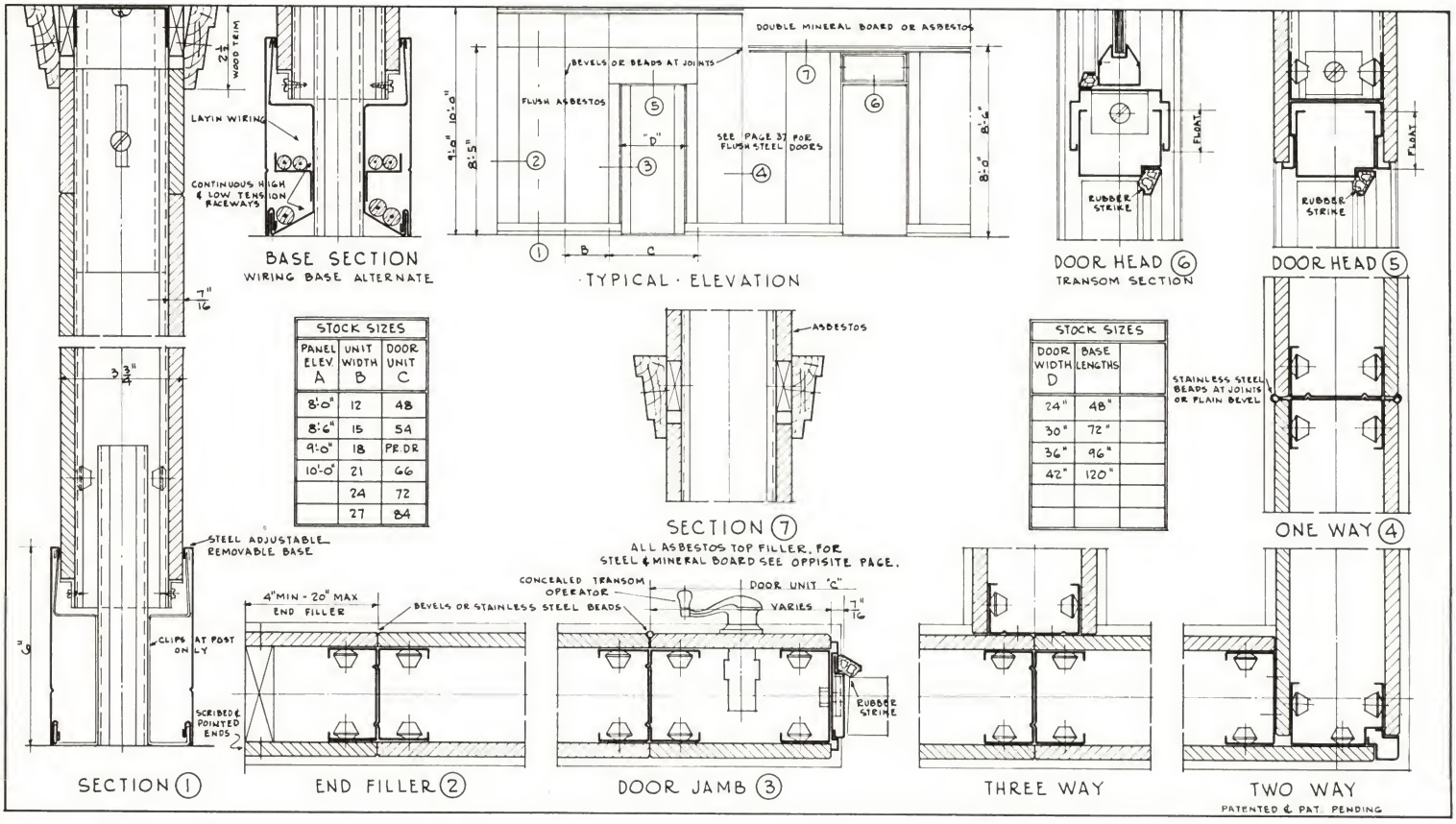
MOVABLE STEEL PARTITIONS provide this flexibility, and are fireproof. Masterwalls 2¾" and 3" thick solid packed with inorganic filler are more soundproof than 4" tile walls plastered both sides. Flush and semi flush types have the steel panel plates held permanently flat by steel reinforcing ribs 12" apart spotwelded 3" o.c. They do not require frequent painting as in the case of plaster walls. Their light weight is desirable in the design of school floor construction as they weigh only 7 lbs. per square foot compared to 33 lbs. for 4" tile walls plastered both sides. Accessible wiring raceways are provided in the base and posts. Flush and panel designs, single or double glazed are available. See page 48 for steel base, picture mould and door bucks.



East Boston High School
East Boston, Mass.

TYPE EE FLUSH ASBESTOS

• 3¾" thick — single line joint, field assembled



STOCK SIZES		
PANEL ELEV A	UNIT WIDTH B	DOOR UNIT C
8'-0"	12	48
8'-6"	15	54
9'-0"	18	PR DR
10'-0"	21	66
	24	72
	27	84

STOCK SIZES	
DOOR WIDTH D	BASE LENGTHS
24"	48"
30"	72"
36"	96"
42"	120"



Type EE Flush Asbestos and Asbestos and Glass are 3¾" thick and have field assembled panel units. When solid packed with inorganic filler these Masterwalls are more soundproof than a tile and plaster wall. Type EE All Asbestos is absolutely flush with single bevel line or stainless steel bead joints. All Asbestos panels are stocked in 12", 15", 18", 21", 24" and 27" units in 8'-0", 8'-6", 9'-0" and 10'-0" elevation. Asbestos panels are 7/16" thick and are secured to posts by means of concealed buttons.

Asbestos and Glass Panel units have flush asbestos with single line bevel V or stainless steel bead joints to chair rail and asbestos faced posts 3¾" wide between glass panels. These units are stocked in 6" multiples 24" to 48" with 42" and 54" chair rail and in an 8'-0", 8'-6", 9'-0" and 10'-0" elevation. Patented telescopic glazing is used throughout.

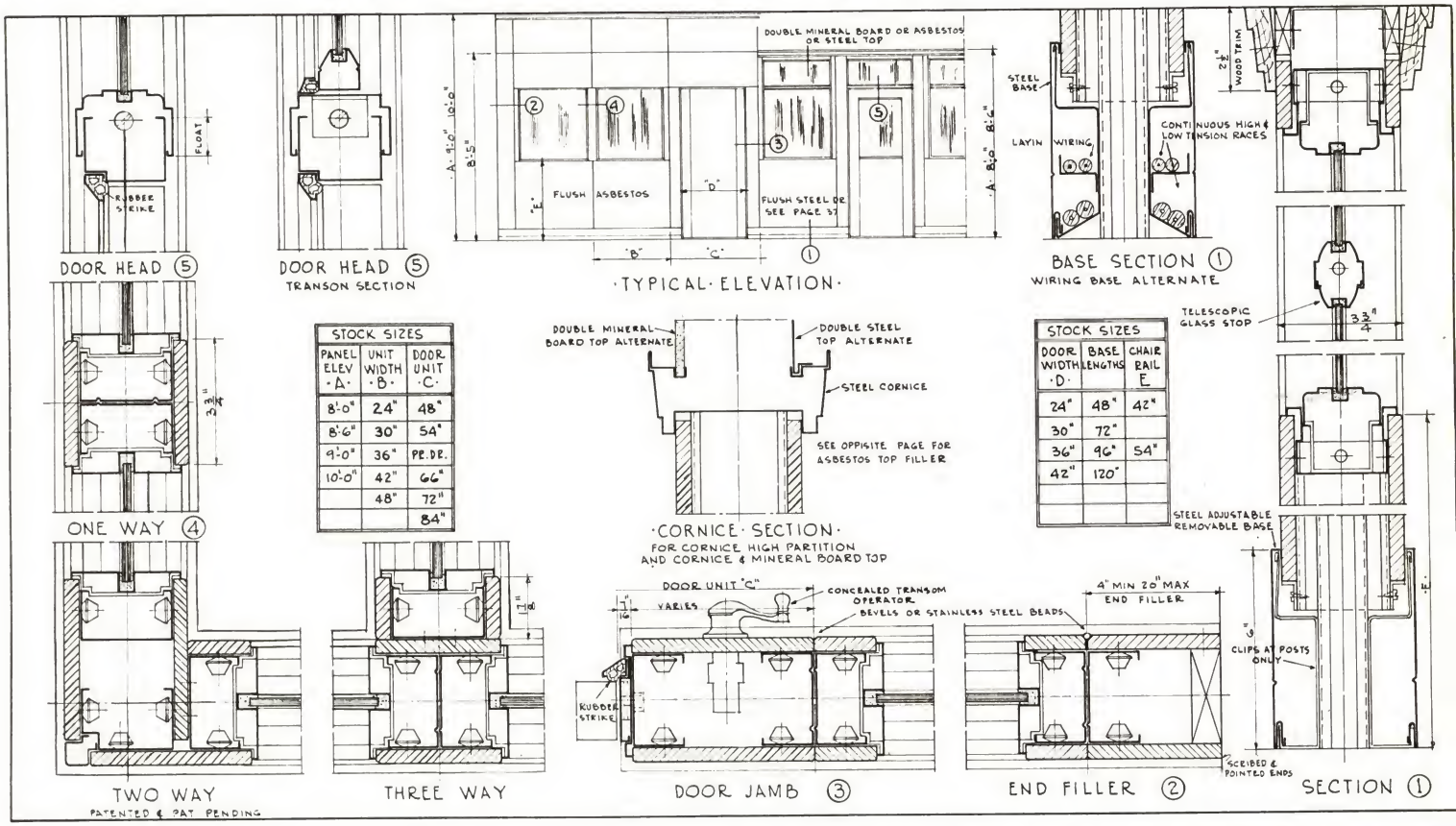
Door and panel units are interchangeable. A double mineral board or asbestos top filler match-

U. S. Tobacco Company,
Rockefeller Center,
New York, N. Y.
Reinhard & Hofmeister,
Architects

Type EE Flush Asbestos 8'-6" elevation, light gray. Type CC 36" high railing with stainless steel hand rail.

TYPE EE-ASBESTOS & GLASS

• 3¾" single glazed—single line joint, field assembled



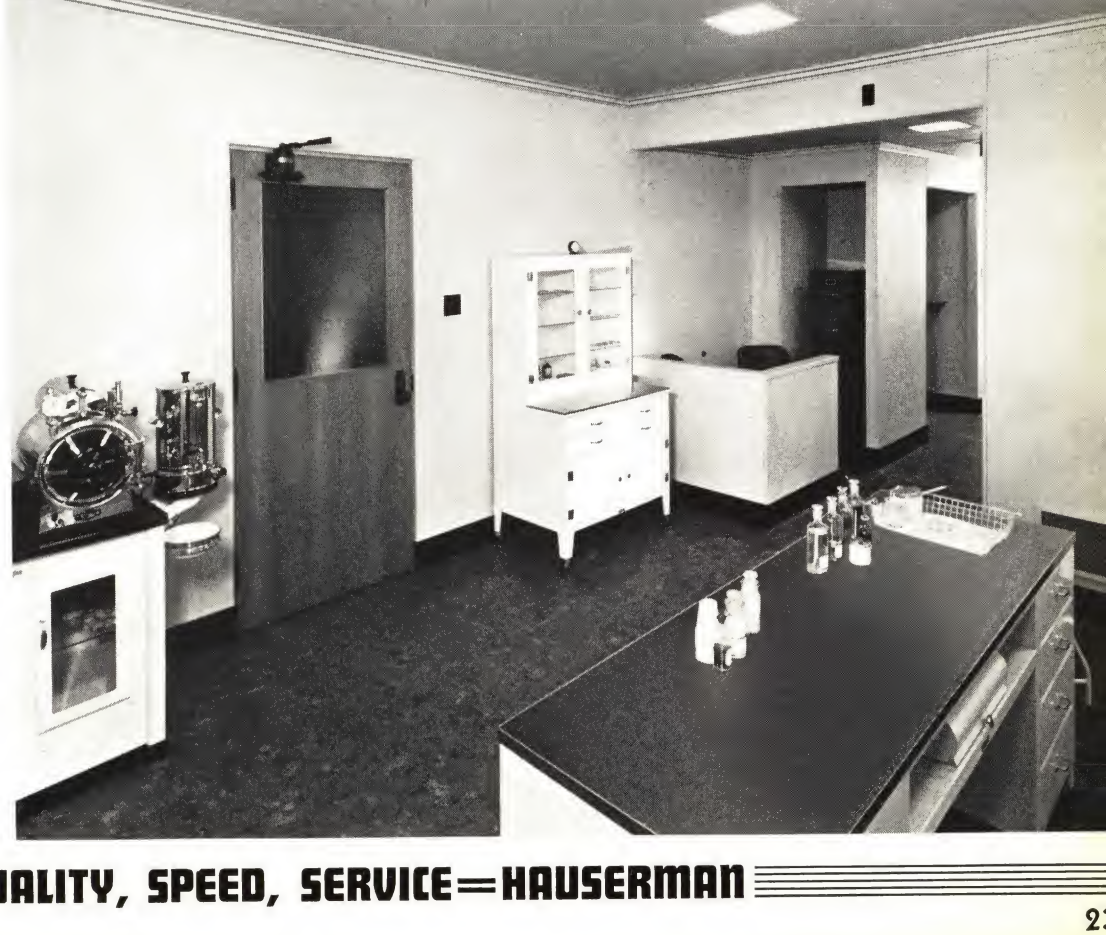
ing panels is available with wood cornice trim mould. End fillers are strictly flush, scribed to the walls and painted. The door frame is full floating with a rubber strike. A felt seal is also available for bottoms of doors, if desired — an important factor for sound reduction (see page 20). All doors are flush steel 1¾" thick.

Steel base is adjustable to floor variations on both sides of partition. Base regularly furnished with clips at posts only but a double continuous raceway wiring base is also available (see details above).

There are lay-in wiring facilities, i. e., in the base through the end fillers and around the door frame. These lay-in facilities are also used for concealing air-conditioning lines and other piping, if desired.

Transoms with concealed operators, fixed glass panels or flush asbestos panels may be used above doors. Double glazed glass units are also available.

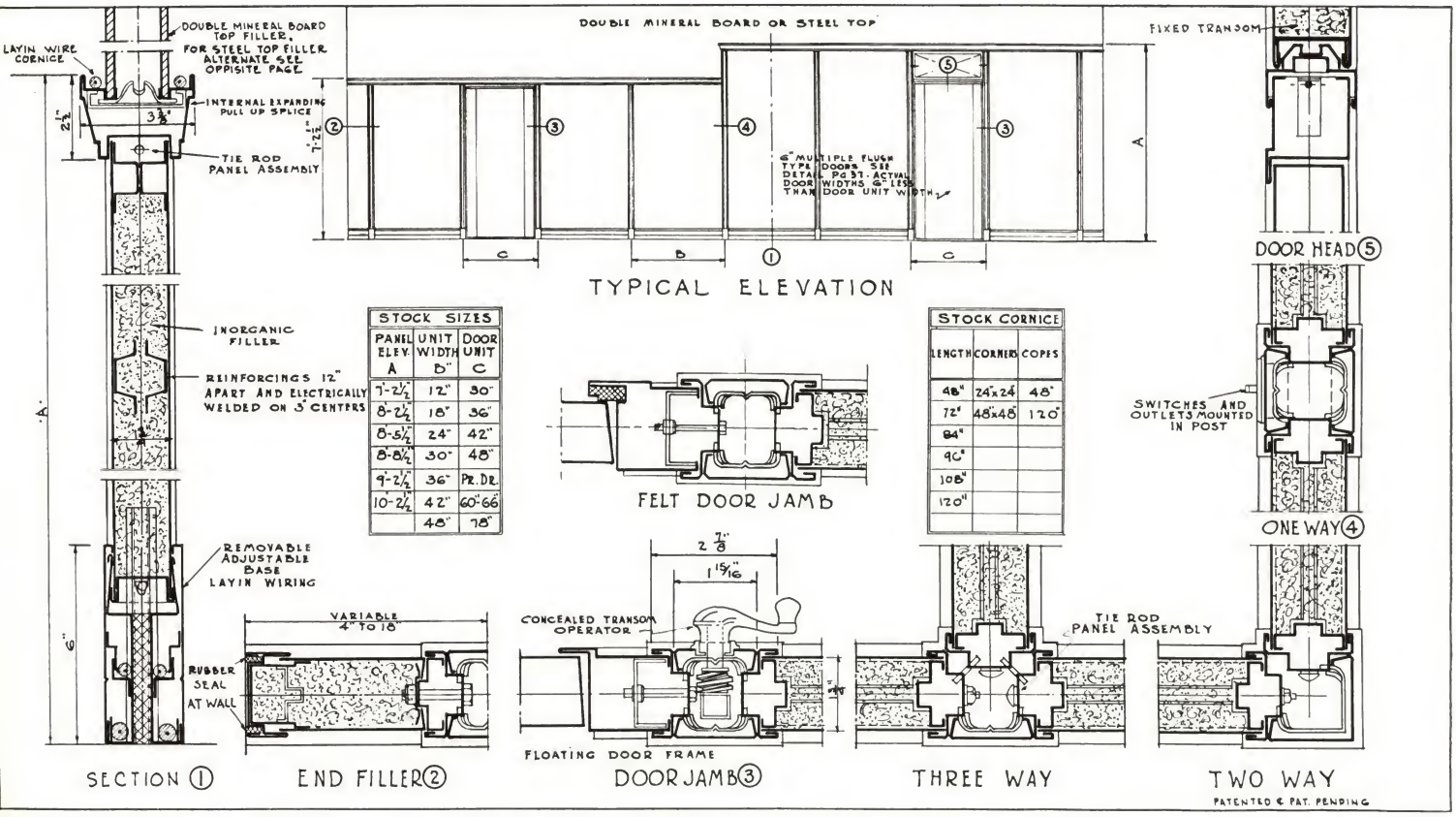
Personnel Building,
Frantz & Spence, Architects



Type EE 9'-0" elevation flush asbestos with asbestos railing to match light gray finish.

TYPE FF-SEMI-FLUSH STEEL

• 1¾" panel, De luxe construction, 2" universal post



STOCK SIZES		
PANEL ELEV. A	UNIT WIDTH B"	DOOR UNIT C
7'-2½"	12"	30"
8'-2½"	18"	36"
8'-5½"	24"	42"
8'-8½"	30"	48"
9'-2½"	36"	PR. DR.
10'-2½"	42"	60"-66"
	48"	78"

STOCK CORNICE		
LENGTH	CORNERS	COPES
48"	24"x24"	48"
72"	48"x48"	120"
84"		
96"		
108"		
120"		



Type FF is essentially a glazed partition of the most refined detail. It is furnished in solid steel where desired in connection with installations largely glass and steel. The thinner panel provides a shallower reveal at the glass line and a more slender post with consequent greater glass area. It is a De luxe Masterwall of the finest type with neat, well proportioned lines. Tie rod shop assembled panel units permit field cut down feature. Type FF 2" semi-flush steel has maximum soundproofness for its panel thickness.

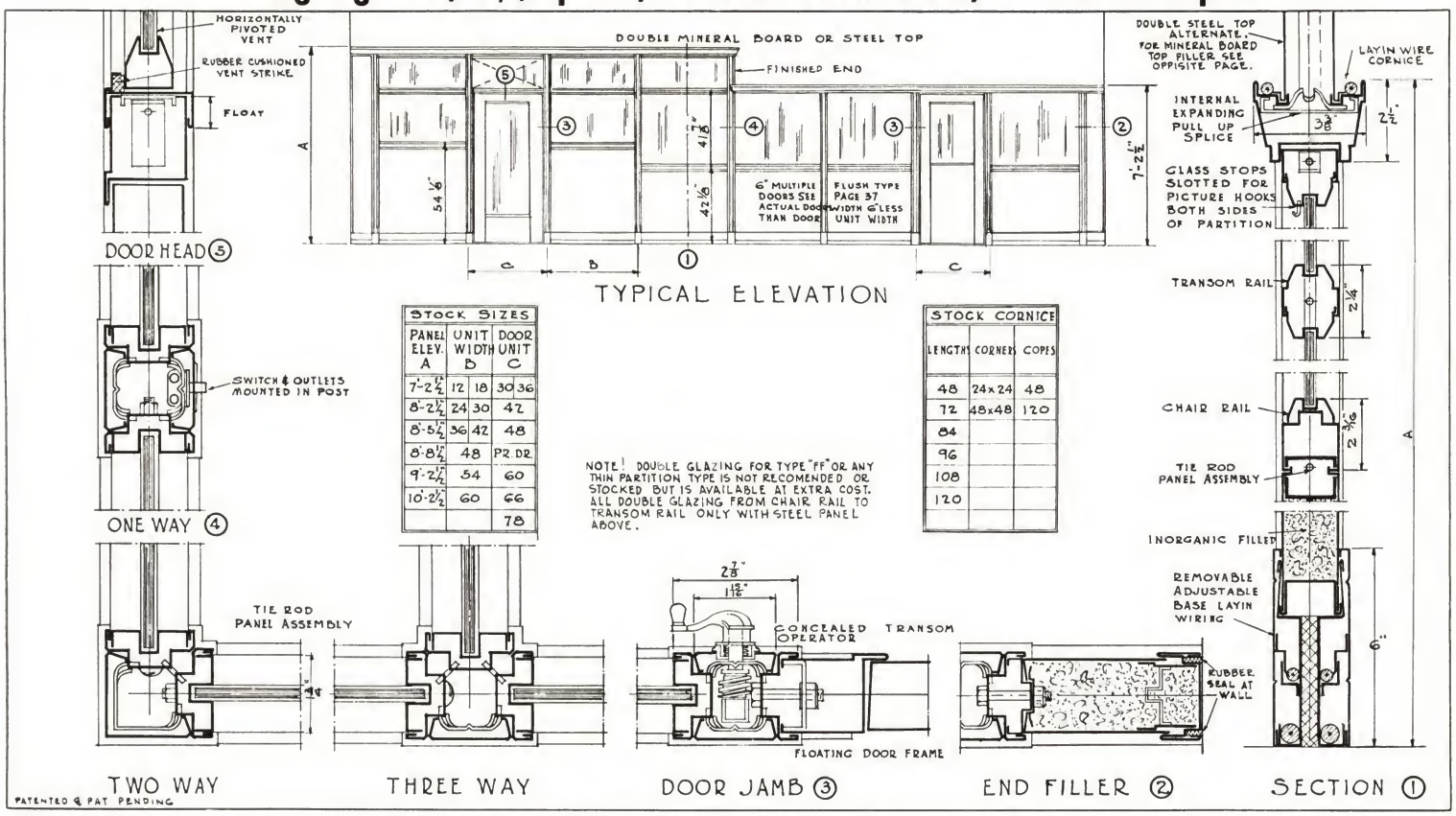
The panel units are stocked in 6" multiples from 12" to 48" wide and in 6 elevations. The glass and steel units are stocked in 6" multiples 12" to 60" wide 6 elevations with 42" or 54" chair rail height and have patented telescopic glazing detail above. All of the semi-flush steel panels in both the all steel and steel to chair rail are 1¾" solid packed with inorganic sound deadening filler.

Upjohn Company,
Kalamazoo, Michigan
Albert Kahn Inc., Architect

Type FF 9'-2½" elevation all steel with 9'-2½" steel glass steel 48" chair rail. Tan finish with black base.

TYPE FF-GLASS

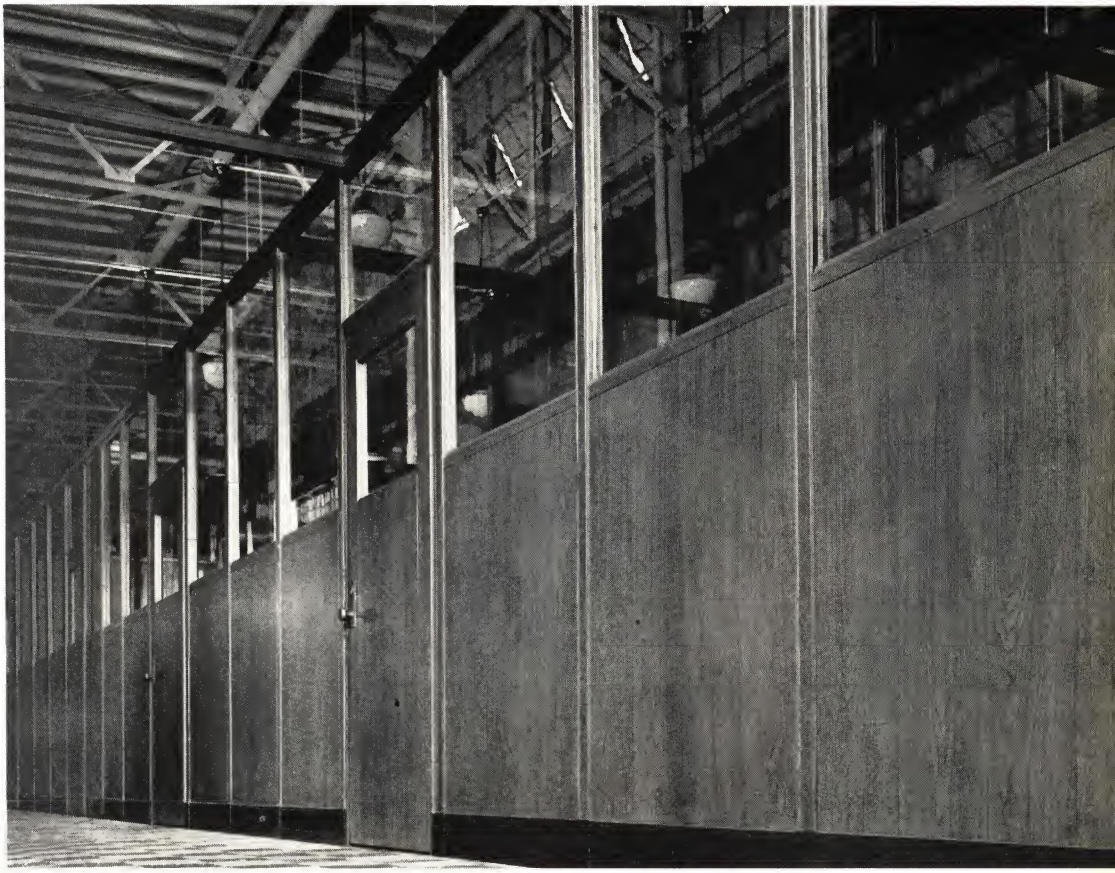
• single glazed, 1¾" panel, De luxe construction, 2" universal post



De Luxe construction, steel reinforced flat steel panels solid packed. Reinforcings spaced 12" apart electrically welded 3" on centers. Type FF has universal posts with rigid clip assembly of panel units concealed by snap-on post caps. A double mineral board or flush double steel top filler is optional with or without packing. The door and panel units are interchangeable without disturbing top filler, cornice or adjoining units.

Layin facilities are provided for wiring or air conditioning lines in base and cornice. The full floating door frame is available in either a rubber or steel strike. Doors may be provided with felt seal at bottom for sound reduction if desired. (See details Page 20). Transoms with concealed operator or friction device are available. Semi-flush steel panels or a fixed glass panel may be used over doors. For railings and counters to match see Pages 32 and 33.

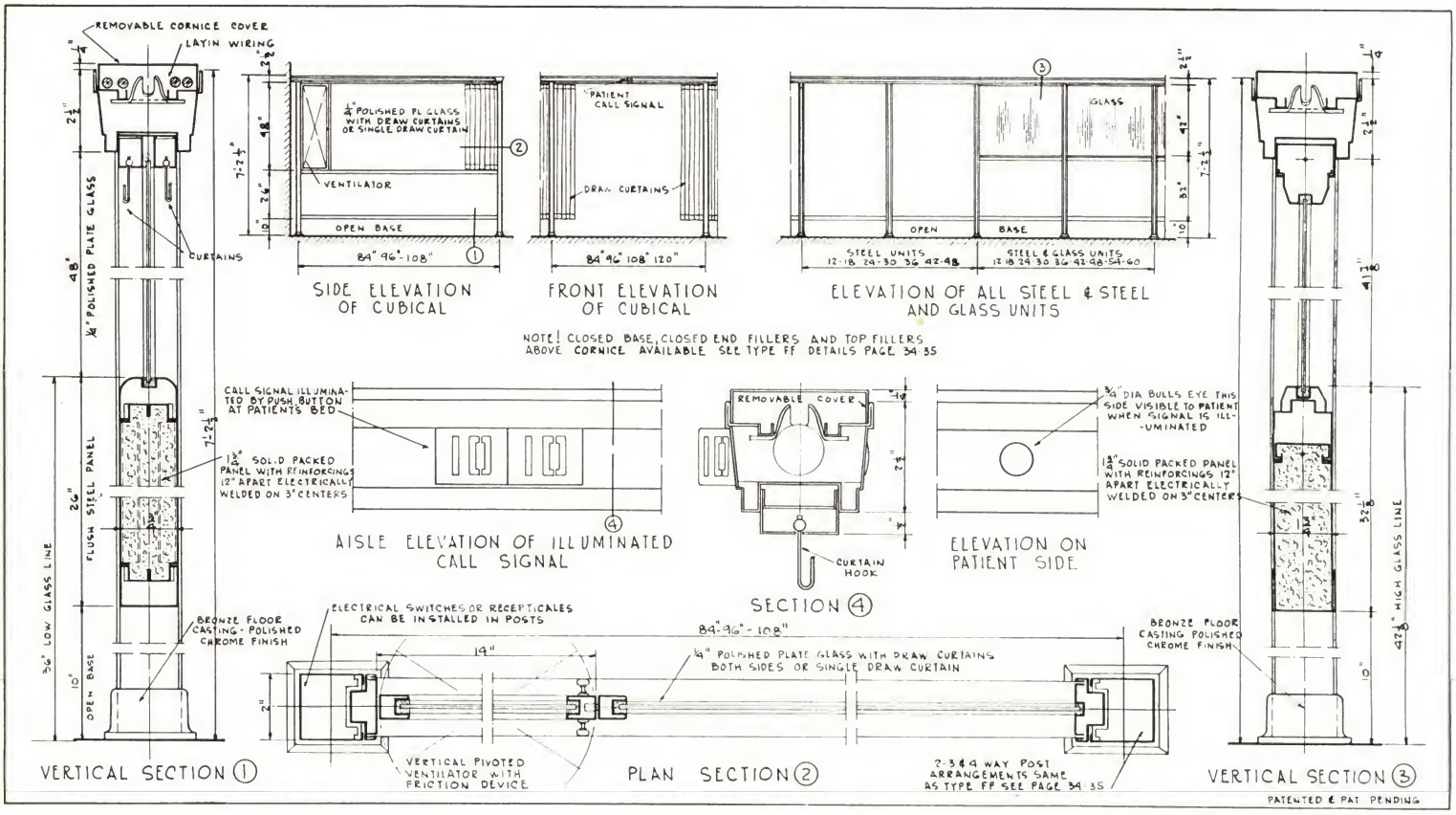
General Motors Corp.,
Diesel Division,
Detroit, Michigan
Albert Kahn Inc., Architects



Type FF 9'-2½" cornice high steel and glass elevation, 54" chair rail. Walnut grain finish with black base.

HOSPITAL CUBICLES

• maximum movability, ventilation, light





Hospital Cubicle partition has the same features as type "FF" partition. Panels are 1¾" thick solid packed with inorganic sound deadening filler. Panels have reinforcings, spaced 12" apart electrically welded 3" on centers. Masterwall cubicles are flexible and can be easily moved without muss, fuss or dirt. Ventilation is provided by open ends, base, tops and ventilators in the panels when they are glazed.

Complete conversion of large rooms or areas is accomplished economically and quickly without the usual hospital ward atmosphere. Unique easy sliding ball bearing draw curtain fixtures are built in (see detail above). Cornice and universal posts provide electric wiring facilities and are sealed against dust and dirt.

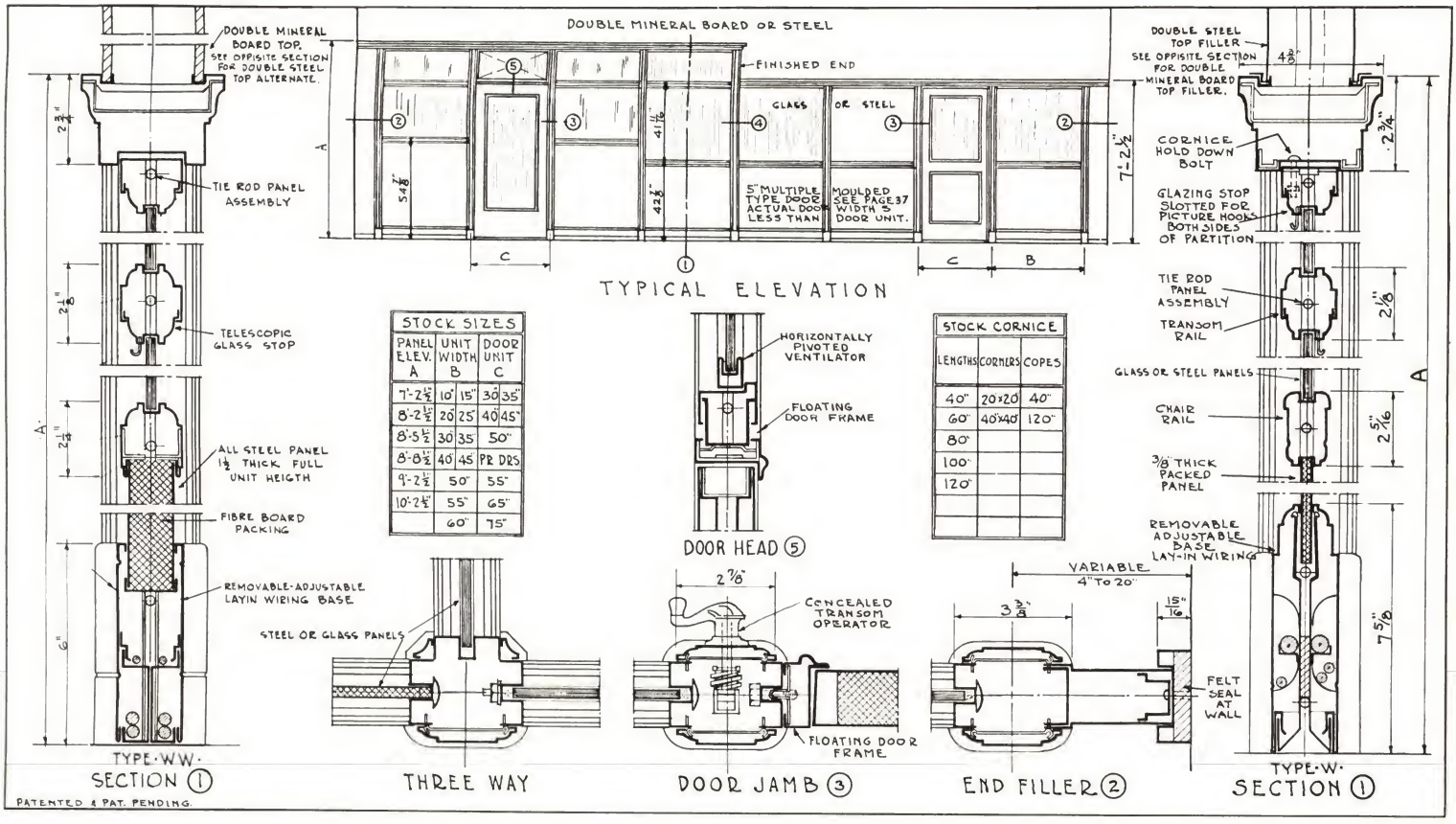
Illuminated individual patient call signals for each cubicle are furnished when specified. The call signal is built into the cornice. The extra wide glass panels give the maximum amount of light with fewer vision obstructing posts.

Stock sizes for the various combinations of cubicle are noted above on the details.

Hospital cubical 7'-2½" to cornice with open base.

TYPE W & WW STEEL and STEEL & GLASS

• 3/8" and 1 1/2" packed panel, single glazed, 3" universal post



Type W & WW are of moulded design. Type W has 3/8" and type WW 1 1/2" solid packed steel panels. The glass panels above the chair rail on type W are interchangeable with 3/8" packed steel panels. Type WW all steel has a full height 1 1/2" solid packed panel. Both types are tie rod shop assembled which permits field cut down. Both types have patented telescopic glazing, universal post and layin wire base. Door and panel units are interchangeable. Type W & WW have the same floating door frame with steel strike. Transoms with concealed operator or friction device are available. Double mineral board or double flush steel top filler is available. See page 32 — for railing and counters to match.

Panel units are stocked in 5" multiples from 10" to 60" wide and in 6 heights with 42" or 54" high chair rail.

E. I. DuPont De Nemours & Co. Empire State Building, New York City, N. Y.

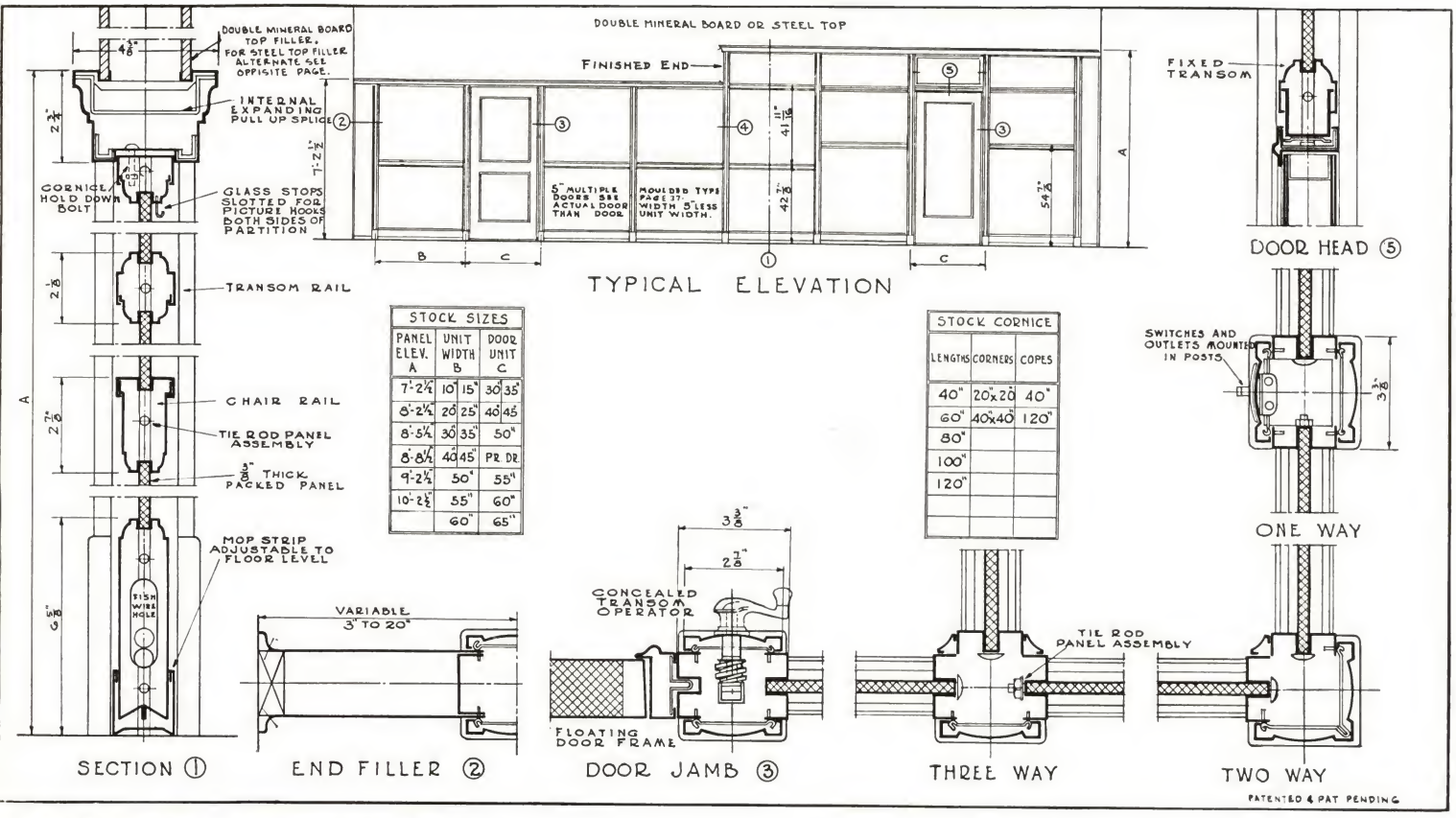
Type W 8'-5 1/2" elevation with railing to match. Aurora glass to 7'-0", clear glass above. Walnut grain finish with 2" high black mopstrip and black painted handrail.

This type is standard for the Empire State Building which has over 200,000 sq. ft. installed.



TYPE R-STEEL

• 3/8" packed panel — 3" universal post



STOCK SIZES		
PANEL ELEV. A	UNIT WIDTH B	DOOR UNIT C
7'-2¼"	10" 15"	30" 35"
8'-2¼"	20" 25"	40" 45"
8'-5¼"	30" 35"	50"
8'-8¼"	40" 45"	PR DR
9'-2¼"	50"	55"
10'-2¼"	55"	60"
	60"	65"

STOCK CORNICE		
LENGTHS	CORNERS	COPES
40"	20"x20"	40"
60"	40"x40"	120"
80"		
100"		
120"		



Type R differs from Type W, in that it has a different moulded design of post cap and has a fish wire base instead of layin wiring base. It is a very economical masterwall for all general office and industrial purposes. Type R has 3/8" solid packed panels with glass and steel panels interchangeable above chair rail and is available in any combinations of glass and steel. Tie rod shop assembled panel units permit field cut down feature. The panel units are stocked in 5" multiples from 10" to 60" wide, in 6 elevations with 42", 48" and 54" chair rail. The 3/8" solid packed panels consist of two steel plates cemented to either side of a mineral board filler. Patented telescopic

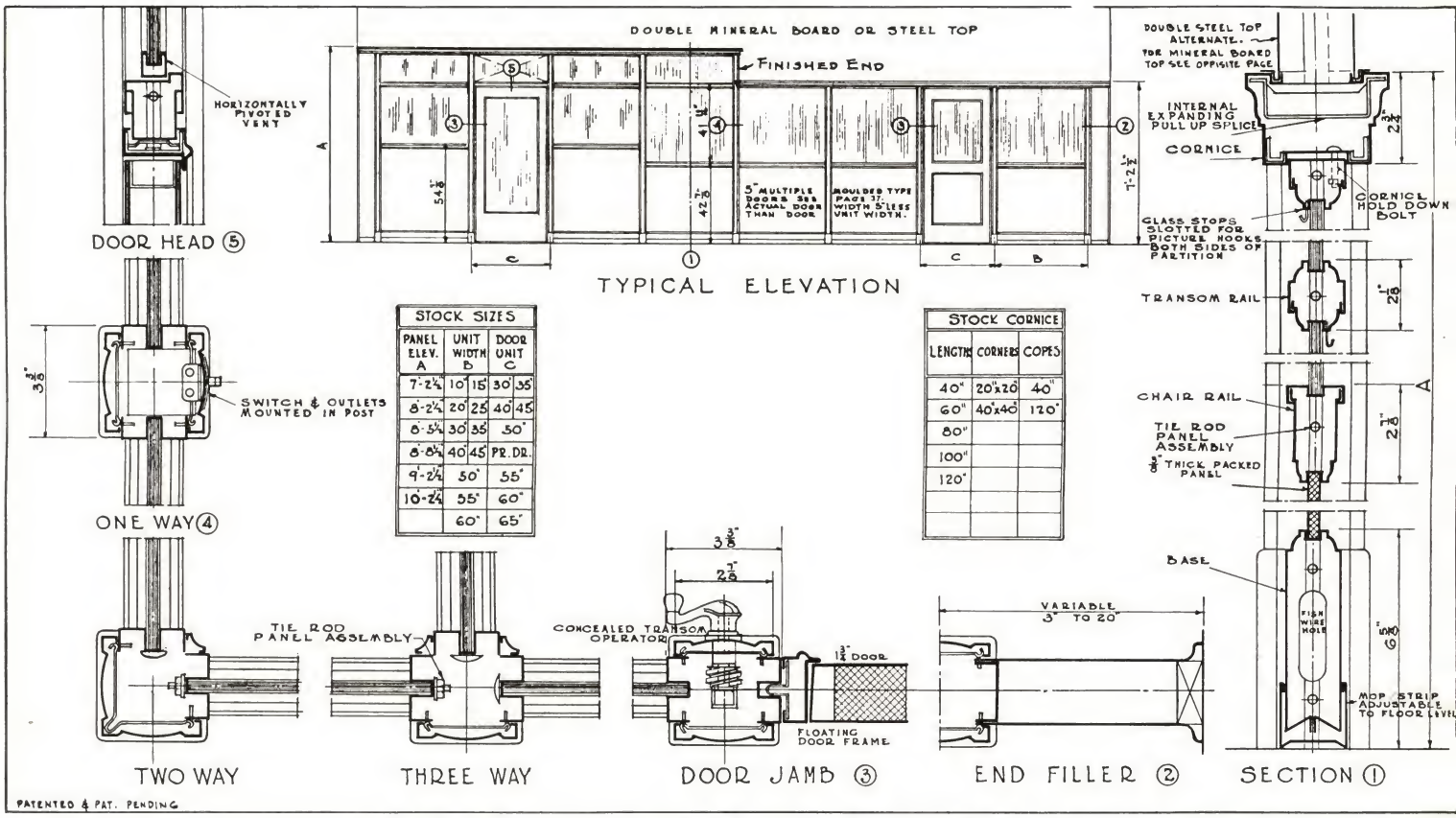
Texas Company
Chrysler Building,
New York City, N. Y.

Type R 8'-2½" elevation solid steel to 7'-0" with glass above. Grained walnut finish.

This type is standard for many offfce buildings including the Chrysler Building which has over 250,000 sq. ft. installed.

TYPE R-GLASS

• single glazed — 3/8" packed panel — 3" universal post



STOCK SIZES			
PANEL ELEV. A	UNIT WIDTH B	DOOR UNIT C	
7'-2¼	10"	15"	30" 35"
8'-2¼	20"	25"	40" 45"
8'-5¼	30"	35"	50"
8'-8¼	40"	45"	PR. DR.
9'-2¼	50"	55"	
10'-2¼	55"	60"	
	60"	65"	

STOCK CORNICE		
LENGTH	CORNERS	COPES
40"	20"x20"	40"
60"	40"x40"	120°
80"		
100"		
120°		

glazing used throughout for glass or steel glazing. Type R has universal posts with rigid clip assembly of panel units, concealed by snap-on post caps. A double mineral board or double flush steel top filler is available. Fish wire base is provided for wiring facilities.

The door and panel units are interchangeable without disturbing cornice, top filler or adjoining units. The door frame is floating and has a steel strike. Transoms with concealed operator or friction device are available. Fixed glass or steel panels may be used over doors. Moulded design railings and counters to match are detailed on pages 32 and 33.

Wagner Electric Co., St. Louis, Mo.

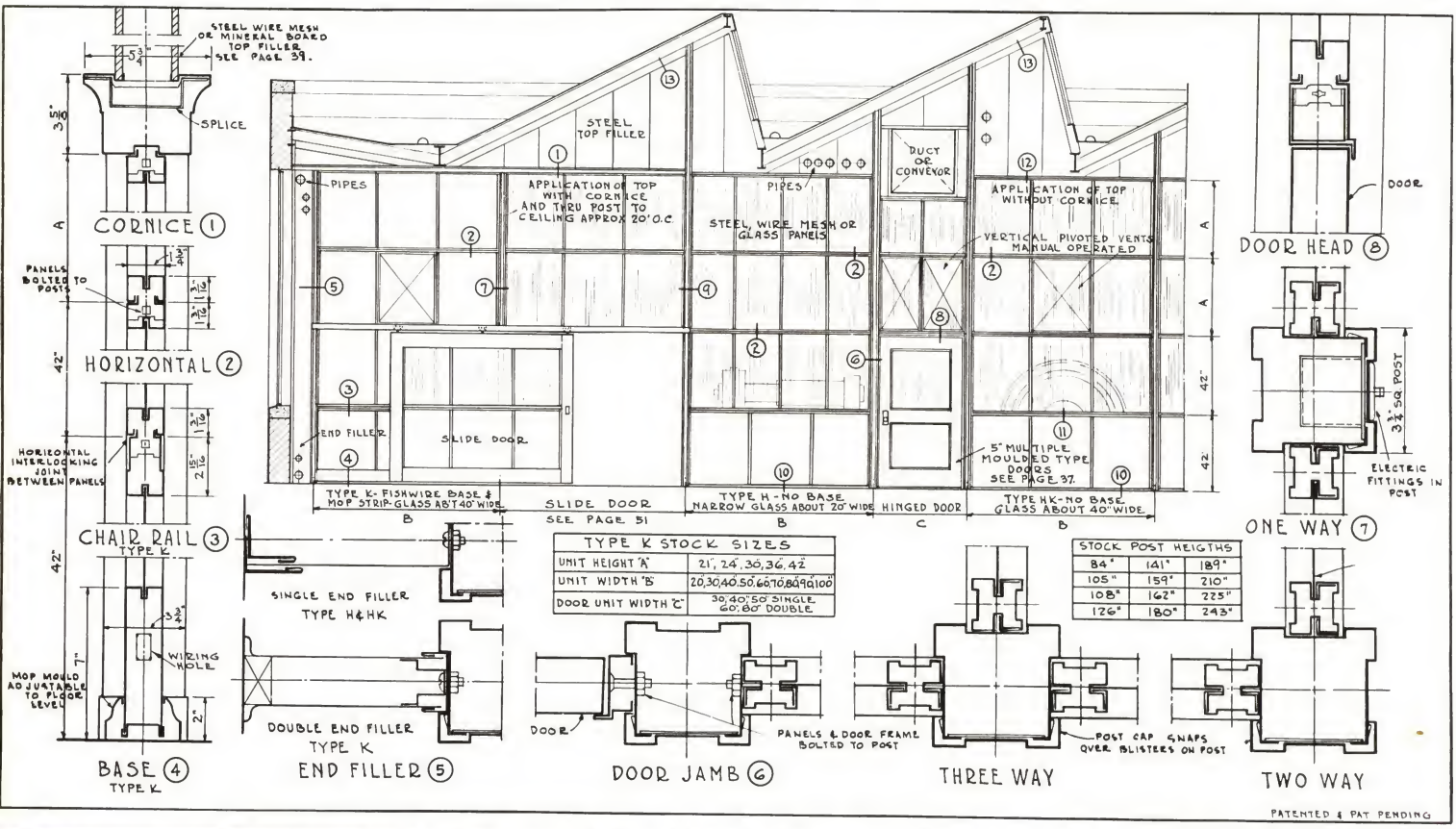


Type R 9'-2½" steel and glass elevation. Green walls, walnut grain doors and black base and plinths.

ENGINEERS AND ERECTORS AVAILABLE EVERYWHERE

TYPE HK-K INDUSTRIAL

• single steel panels — 3¾" universal posts



TYPE K STOCK SIZES	
UNIT HEIGHT "A"	21", 24", 30", 36", 42"
UNIT WIDTH "B"	20, 30, 40, 50, 60, 70, 80, 90, 100
DOOR UNIT WIDTH "C"	30, 40, 50" SINGLE. 60, 80" DOUBLE

STOCK POST HEIGHTS		
84"	141"	189"
105"	159"	210"
108"	162"	225"
126"	180"	243"



Type HK, K and H differ from type R and all other types in that they have vertical as well as horizontal assembly of panels. They have No. 18 gauge single steel panels instead of packed panels. These Masterwalls are field assembled from prefabricated panels and posts. A very rugged and economical type for all industrial purposes, adaptable to high ceilings, trusses, saw tooth roofs, etc.

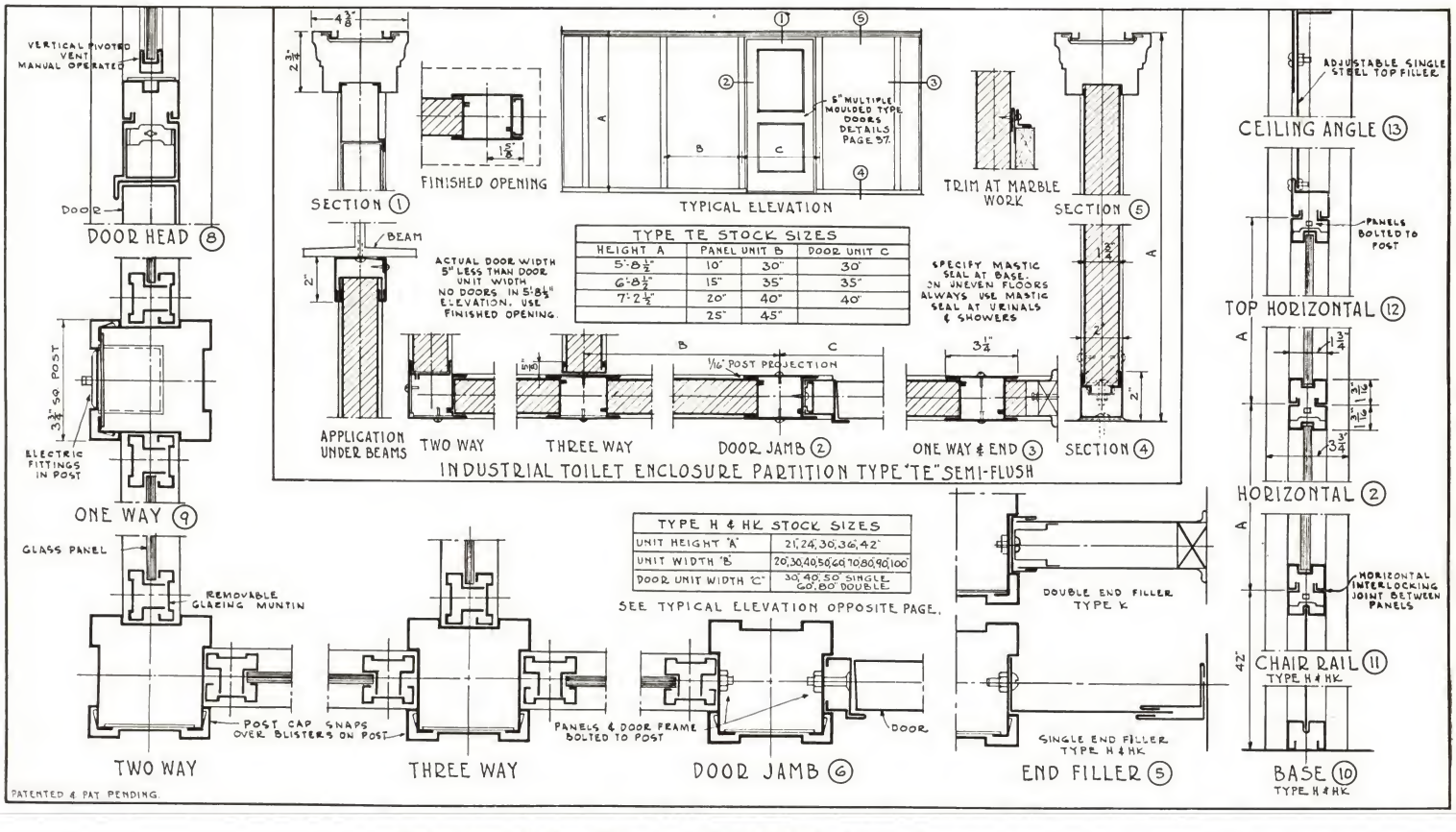
Panels are available in single steel, glass or wire mesh. For stock sizes; see details. The panels and door units are interchangeable. Single steel adjustable top or wire mesh top filler is available. Wiring facilities in posts only for Types HK and H. Type K has fish wire base with adjustable mop strip, a cornice and double mineral board or steel top filler. Type H has no base, narrow 20" glass lights. Type HK has no base and glass lights about 40" wide.

Curtis Aeroplane Co., Buffalo, N. Y.

Type HK 7'-3" cornice high in foreground. Type HK approx. 18'-0" to underside of truss in background with steel filler to underside of sloped roof.

TYPES H-TE INDUSTRIAL

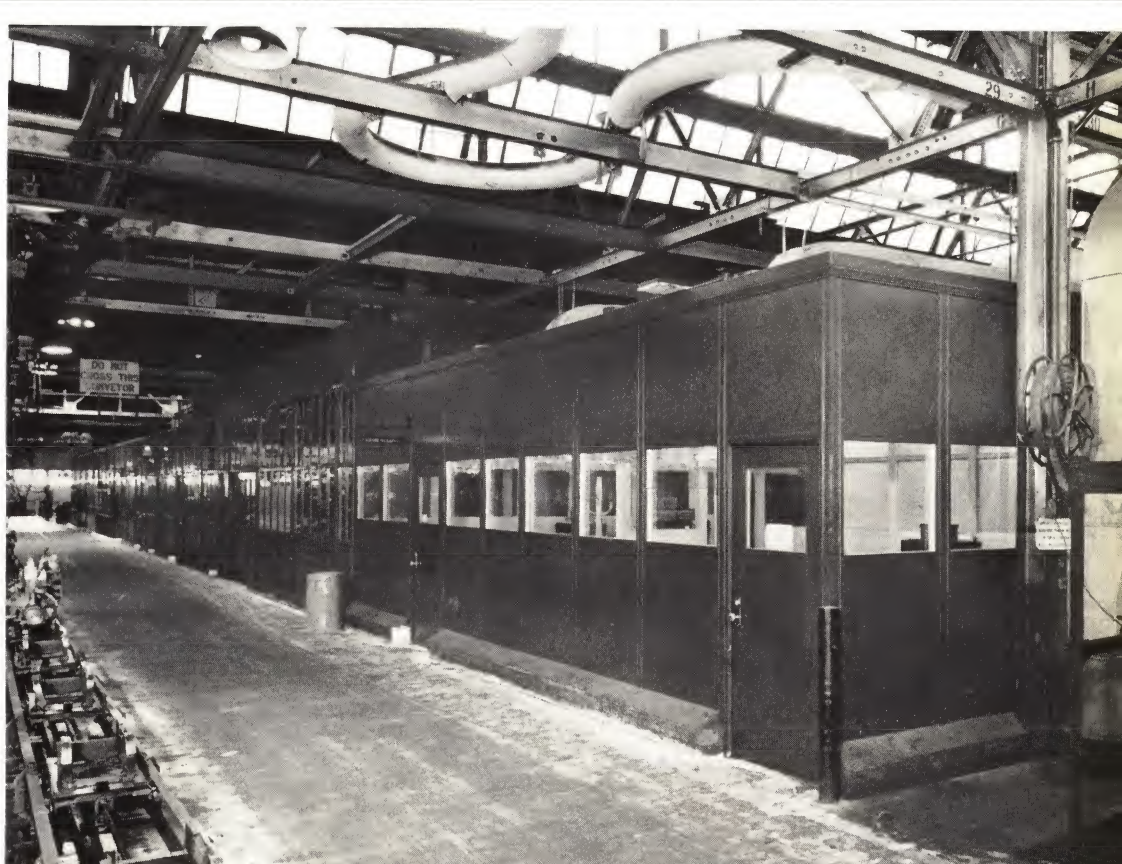
• rugged and economical



Type TE (details above) differs from all other types: as it is progressively erected from prefabricated panels and posts. It was designed primarily as an enclosure wall for industrial toilets and washrooms and is adaptable to mezzanines or restricted ceiling heights. It has 1¾" solid packed steel panels, with inorganic filler.

Panel units and door are not interchangeable without dismantling run, but partition is completely movable. The panel units are stocked in 5" multiples 10" to 45" in 5'-8½", 6'-8½", 7'-2½" heights. Door units are stocked in 30", 35" and 40" widths. Top filler is not recommended because of ventilation, but mineral board or steel top filler is available if desired. The floating door frame has a steel strike. The base mould is set in mastic.

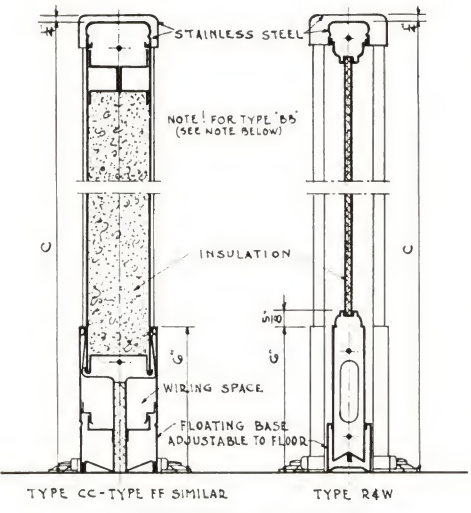
Plymouth Division.
Chrysler Corp.,
Detroit, Mich.



Type H with K cornice (in background) approx. 12'-6" high, glass to 10'-6". Employees conference room type CC soundproof and sound absorbing (in foreground).

MASTER RAILINGS

• flush, semi-flush and moulded types



VERTICAL SECTION
RAILING

RAILINGS — Flush and moulded type low railing with sectional hand rails and post capitals are stocked in 36", 42", 54" heights. Glazed railing with continuous hand rail is stocked in a 42" height.

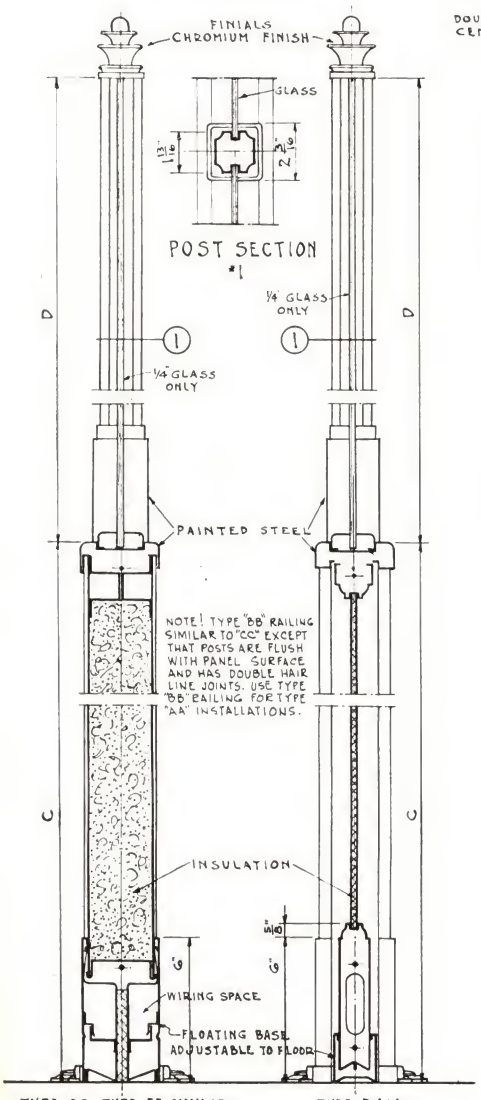
Handrails, Gate Crowns and Post Capitals are recommended only in stainless steel, satin finish (Tampico Brush) for the simple reason that this is the only material that does not need painting or maintenance polishing and consequently is the only finish that will not wear off or discolor from constant contact with the acids of the hand, the worst enemy of painted finishes.

Bronze finish is stocked but not recommended because of tarnishing. Painted steel in black or to match railing color is stocked to meet any demand for a relatively small saving.

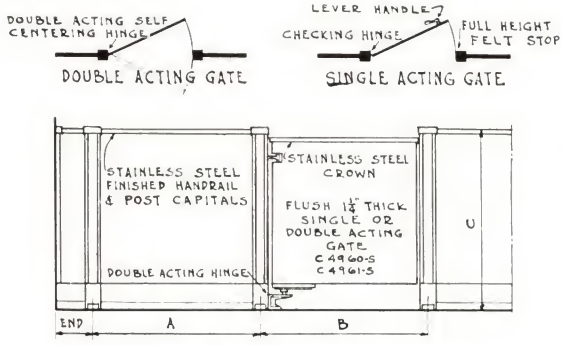
Posts of smart design and slender proportions are used for glazed railings and are painted black, metallic or to match body of railing. Finials are stocked in chromium or bronze finish. Wickets or grilles to match may be installed in place of glass between posts. Railings are securely anchored to the floor and held rigid with substantial reinforcing posts through the verticals.

Low gates are stocked with Hauserman Self Centering, Double Acting Hinge or with Single Acting Checking Hinge. Wherever a secret gate latch or a lock is used on single acting gate . . . the gate should swing towards the inside. Single acting gates should always be provided with checking hinge and full height felt stops. Bottom hinge is regularly finished in plain color to match railing. All high gates are 1¼" thick and are furnished only with single acting checking hinge.

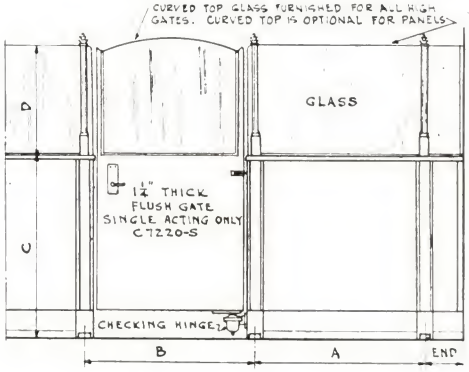
Low gates for all thick types are 1¼" thick. Low gates for all moulded types are ¾" thick.



C7200 TO 7215-S
VERTICAL SECTION
GLAZED RAILING

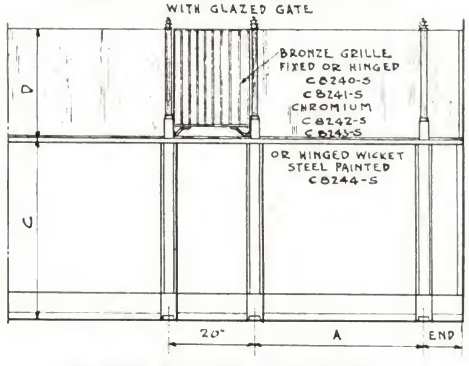


TYPICAL RAILING ELEVATION

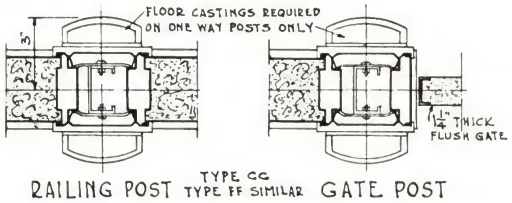


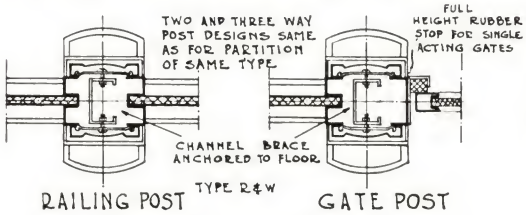
GLAZED RAILING ELEVATION

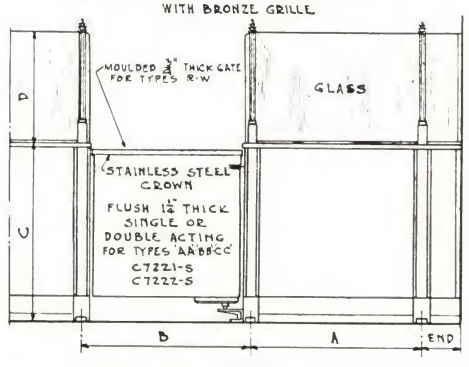
SCHEDULE OF STOCK SIZES					
ITEM	TYPE	A	B	C	D
RAILING	BB,CC	12" TO 60" 6" MULTIPLES	36"	36-42-54	
"	FF	"	36"	"	
"	R-W	10" TO 60" 5" MULTIPLES	35"	36-41-54	
"	WW	"	35"	"	
NOTE: ON 54" HIGH UNITS, 46" & 50" MAX. WIDTH ON 6" & 5" MULTIPLE UNITS.					
GLAZED RAILING	BB,CC	12" TO 60" 6" MULTIPLES	36"	42¼"	23¾"
" "	FF	"	36"	42¼"	23¾"
" "	R-W	10" TO 60" 5" MULTIPLES	35"	41¼"	23¾"
" "	WW	"	35"	41¼"	23¾"
SCHEDULE OF CUT DOWN STOCK SIZES					
GLAZED RAILING	42¼" STEEL PANEL WITH 11⅜" OR 17⅜" GLASS				
" "	54¼" " " " 11⅜" OR 17⅜" GLASS				
NOTE! USE TYPE CC(6) WITH TYPES CC, FF. USE TYPE BB(6) WITH TYPE AA, BB.					



GLAZED RAILING ELEVATION







GLAZED RAILING ELEVATION
WITH LOW GATE

SHIPPING CLASSIFICATION
SUFFIX S = IN STOCK. CS = CUTDOWN STOCK. NS = NO STOCK

PATENTED & PAT PENDING.

COUNTERS-DISPLAY CASES

• harmonizes with partition — completely movable

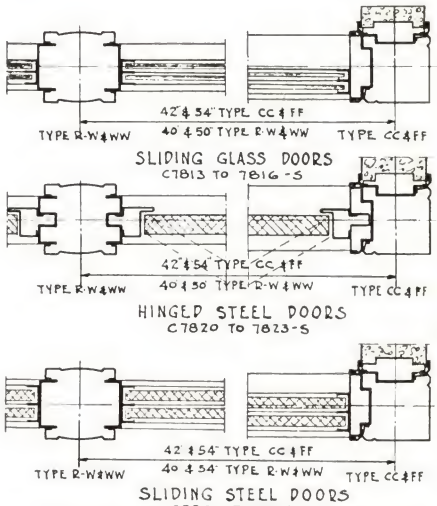
COUNTERS — Besides beauty, convenience and endurance these Hauserman Counters are both movable and salvable. They have the same interchangeable features as all Masterwalls They will long outlive the most extended depreciation. Alterations and additions involving partitions and accessories can be quickly made. Counter tops can be cut or spliced. Balance of counter parts are in stock.

Hauserman Counters are designed to harmonize with partitions and railings. Counters may be open or closed back with sliding glass, sliding steel or hinged steel doors. Adjustable or fixed steel or glass shelves can be provided if desired. Counters are also furnished with glass front panel and lighting for use as display cases.

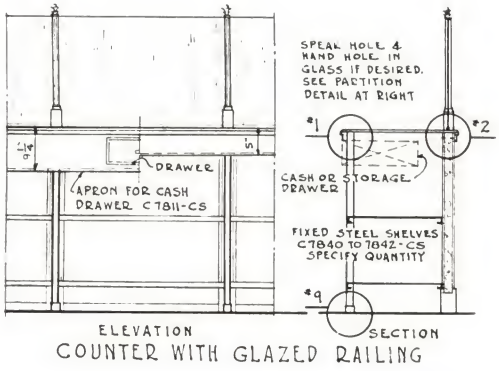
Space under the counters can be divided into sections by means of panels placed between the panel units. Stock cash drawers are equipped with bill compartments, sliding coin trays and paracentric locks only. Storage drawers are similar in construction but with compartments and trays omitted.

Stock sliding steel and hinged steel doors are provided with flat key locks only. Keys to counter doors and cash drawers are regularly furnished from stock and are keyed individually. If locks keyed alike are desired they must be so specified and additional delivery time allowed. See list of linoleum colors to harmonize with partition finishes below. No. 4416 Dark Brown and 2016 Dark Green are stock.

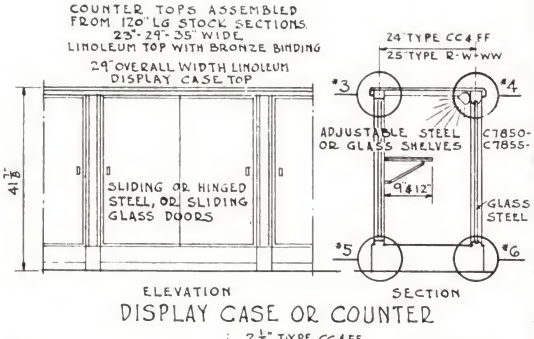
Important Note: The Hauserman Company is not interested in counter business except as an integral part of a partition installation. We are not manufacturers of stock furniture or case goods.



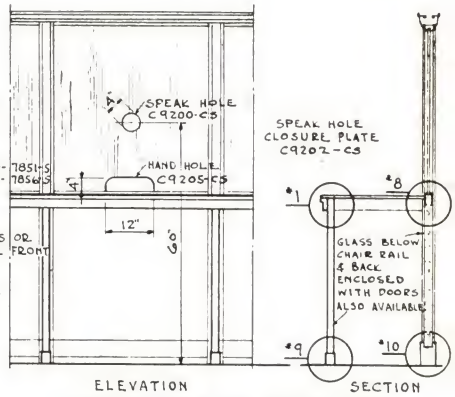
COUNTER & DISPLAY CASE DOORS



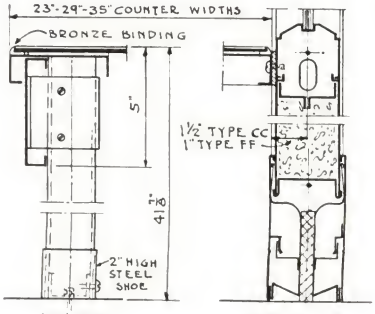
COUNTER WITH GLAZED RAILING

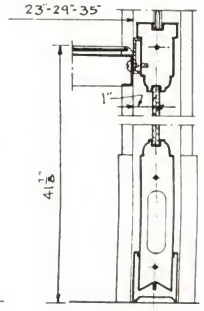


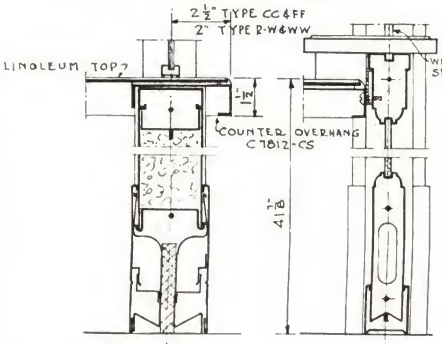
DISPLAY CASE OR COUNTER

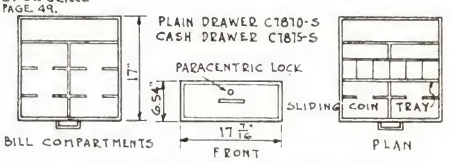


COUNTER WITH PARTITION





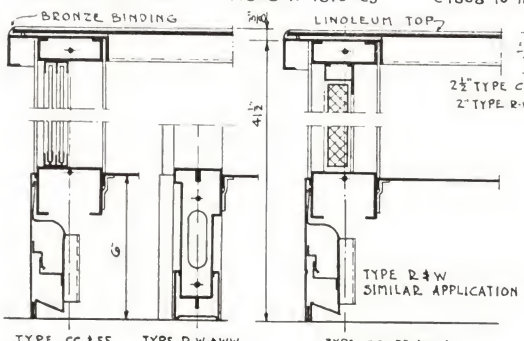


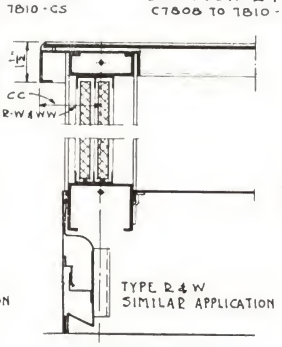


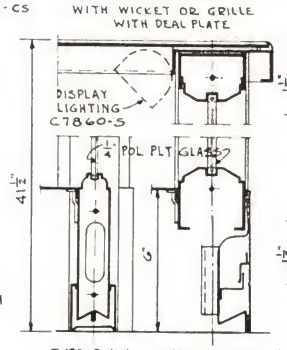
CASH OR STORAGE DRAWERS

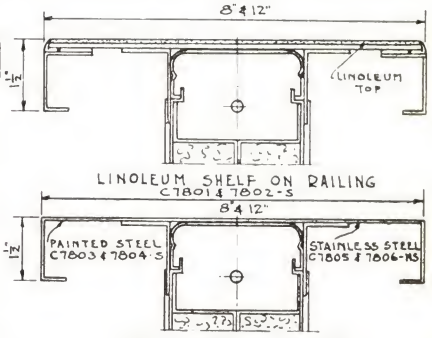
LINOLEUM COLOR NUMBERS

COLOR	E. F. H. CO	ARMSTRONG	COLOR	E. F. H. CO	ARMSTRONG
DK. BROWN	4416	20	DK GREY	4438	22
LT. BROWN	3129	28	LT GREY	4436	26
DK GREEN	2016	21	BLUE	4421	43
LT GREEN	2010	42	BLACK	4380	27









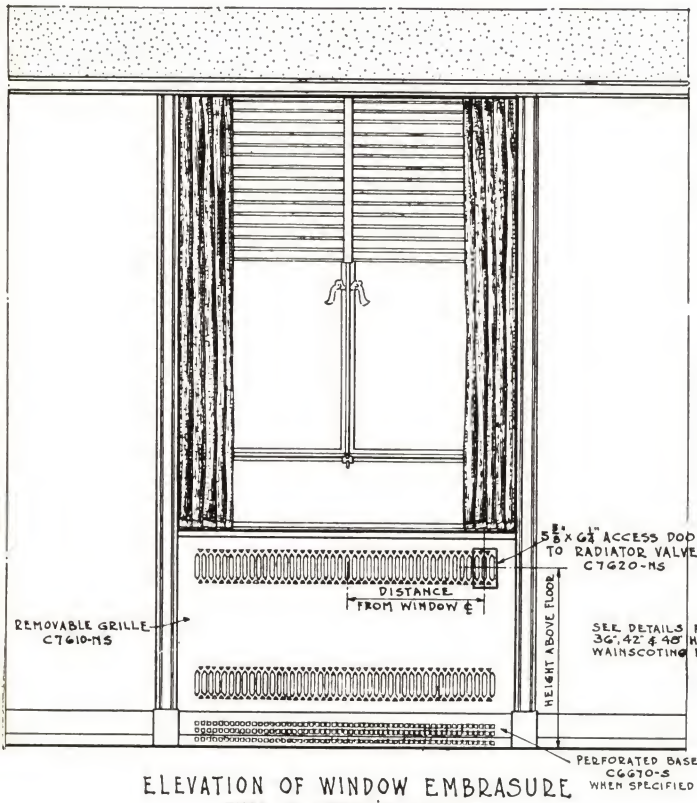
SHELVES ON RAILING
TYPE CC SHOWN, SIMILAR APPLICATION TO OTHER TYPES

PATENTED & PAT PENDING

SHIPPING CLASSIFICATION
SUFFIX S = IN STOCK CS = CUTDOWN STOCK NS = NO STOCK

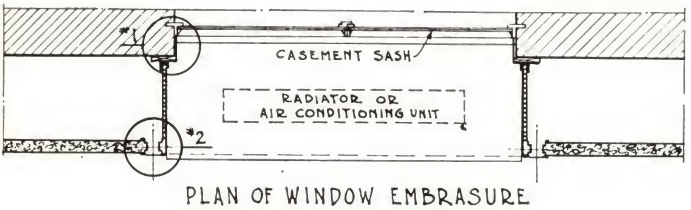
MASTERWALL WAINSCOTINGS

• make attractive interiors

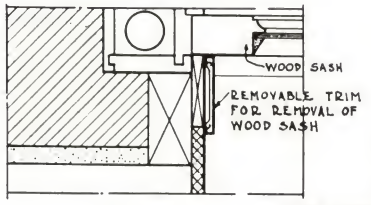


ELEVATION OF WINDOW EMBRASURE

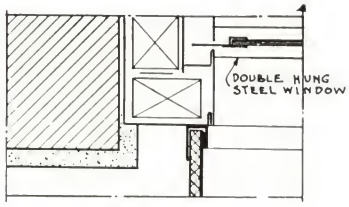
TYPE CC WAINSCOTING SHOWN
TYPE AA & BB SIMILAR EXCEPT SINGLE LINE IN PLACE OF SEMI-FLUSH POSTS C7600-CS



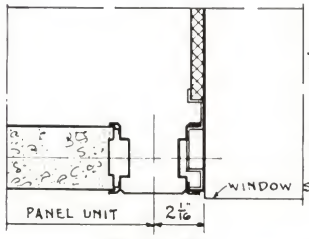
PLAN OF WINDOW EMBRASURE



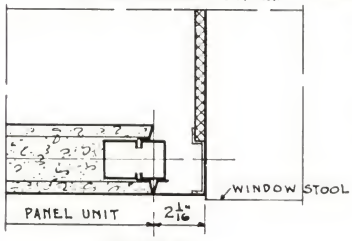
PLAN #1
FOR WOOD SASH



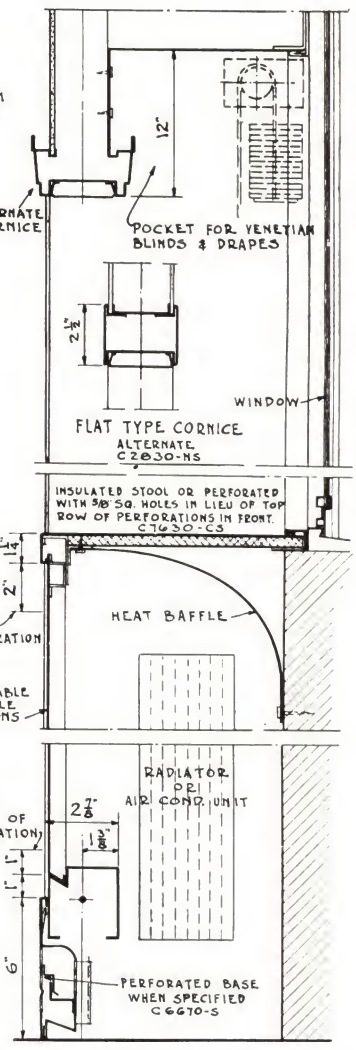
PLAN #1
FOR STEEL SASH



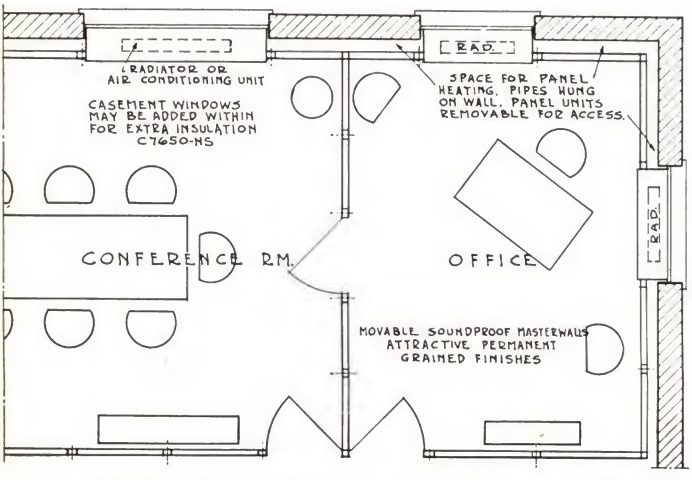
PLAN #2
TYPE CC WINDOW RETURN



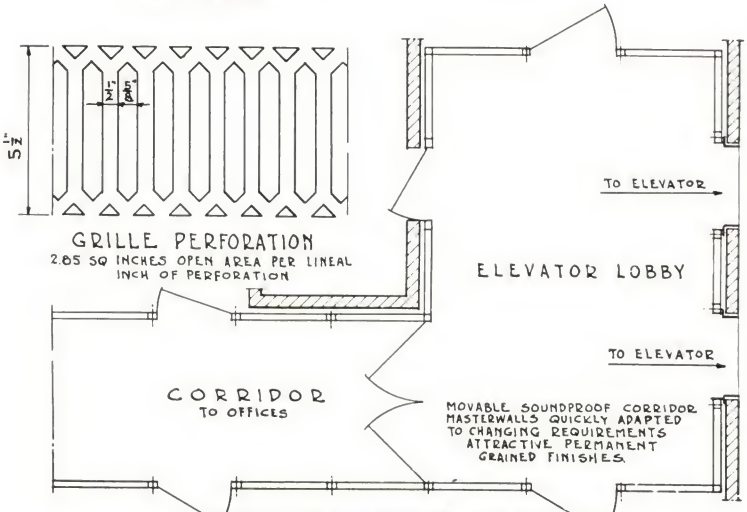
PLAN #2
TYPE AA WINDOW RETURN
TYPE DD SIMILAR



SECTION THRU WINDOW EMBRASURE



WAINSCOTED OFFICE & CONFERENCE ROOM



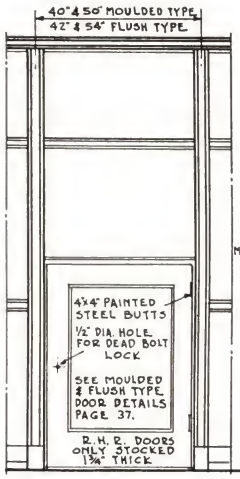
WAINSCOTED LOBBY & CORRIDOR

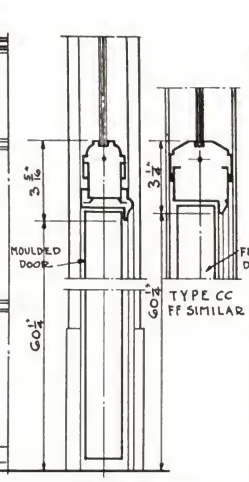
SHIPPING CLASSIFICATION
SUFFIX S = IN STOCK CS = CUTDOWN STOCK NS = NO STOCK

PATENTED & PAT. PENDING

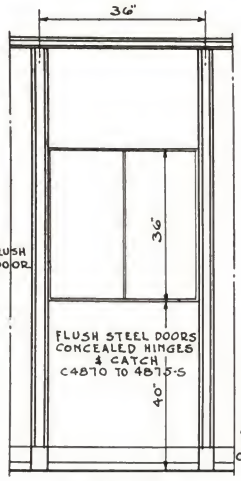
DELUXE REFINEMENTS

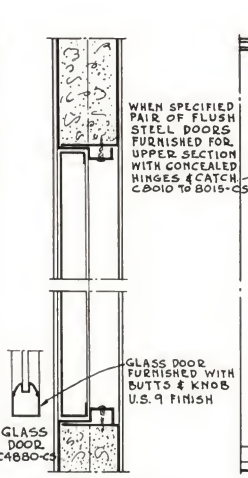
• bookcases, grilles, wickets, access doors



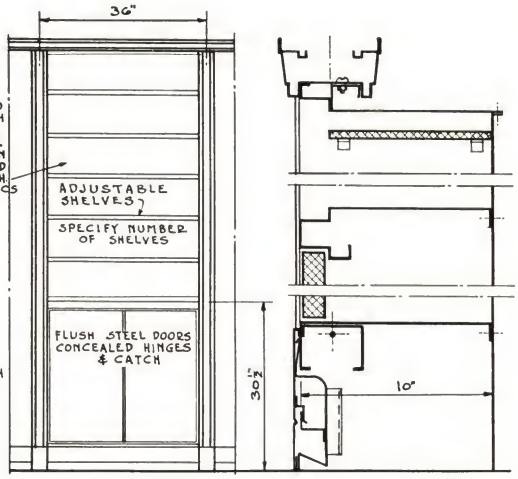


ACCESS DOORS
TO TELEPHONE SWITCHBOARD
C4850 TO 4859-S



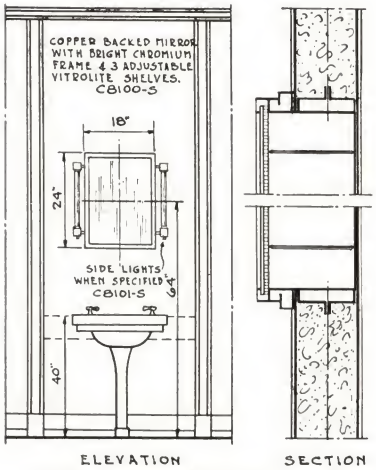


ACCESS DOORS
TO FUSE & SWITCH BOX
FIRE HOSE ETC.

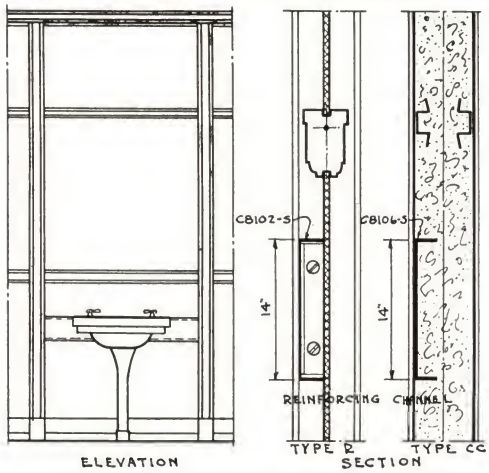


BOOK CASE WITH CUPBOARD
TYPE CC
TYPE AA-BB & DD SIMILAR WITH SINGLE LINE JOINT IN PLACE OF PILASTER
C8000 TO 8005-CS

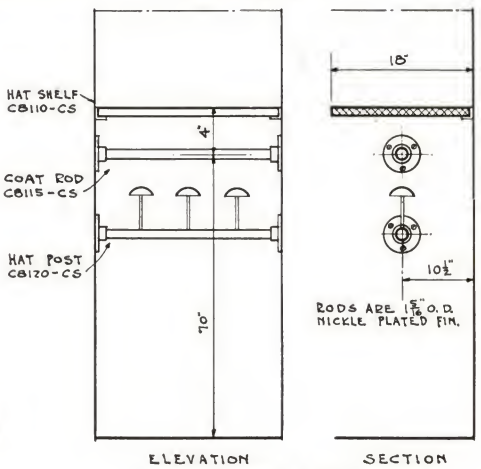
NOTE! THE USE OF REGULAR TYPE DOOR & UNIT IS AN ALTERNATE, PRACTICAL NEAT APPEARING ANSWER FOR CONCEALING SWITCHBOARDS, FUSE BOXES, SHELVING, FIRE HOSE.



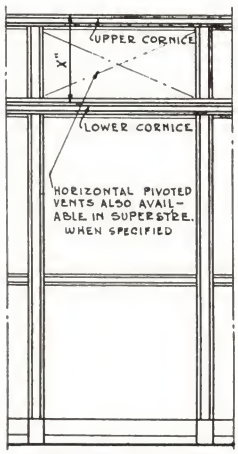
PANEL WITH MEDICINE CABINET

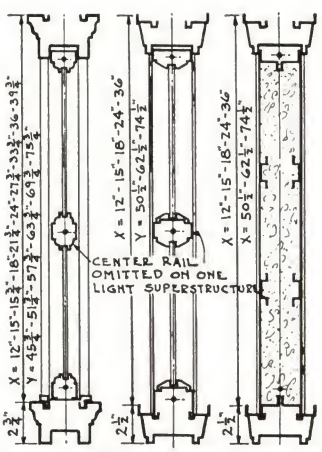


PANEL REINFORCED FOR LAVATORY

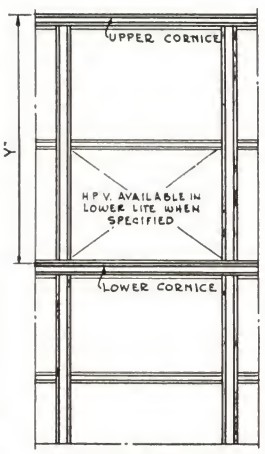


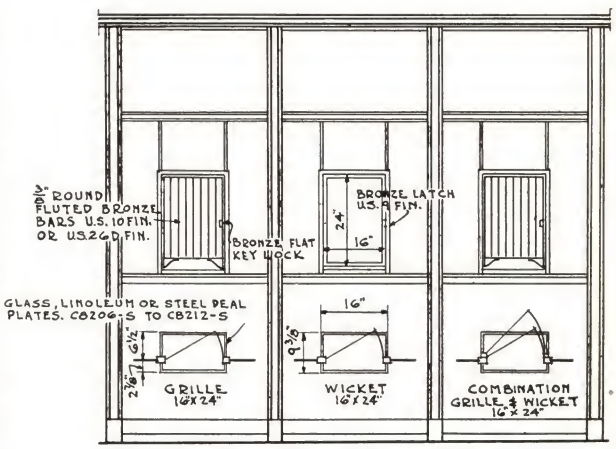
COAT RODS & HAT SHELF





SUPERSTRUCTURE
C8300 TO 8367-CS





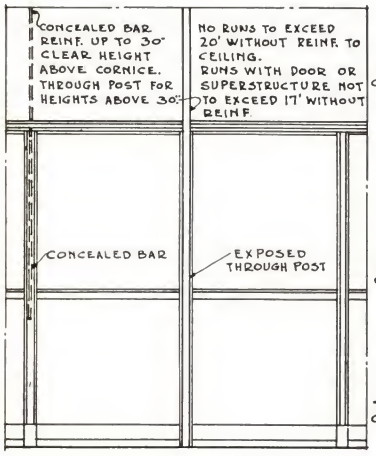
GRILLES & WICKETS
LEFT HAND SWING GRILLES & WICKETS SHOWN
ALSO AVAILABLE IN RIGHT HAND SWING

PATENTED & PAT. PENDING

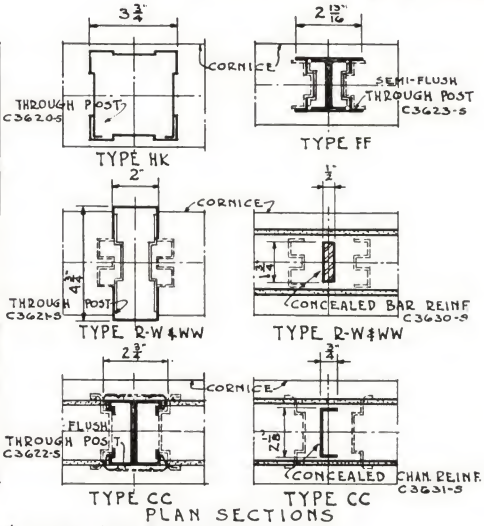
SHIPPING CLASSIFICATION
SUFFIX S = IN STOCK CS = CUTDOWN STOCK NS = NO STOCK

MASTERWALL PRACTICE

• meets all job conditions

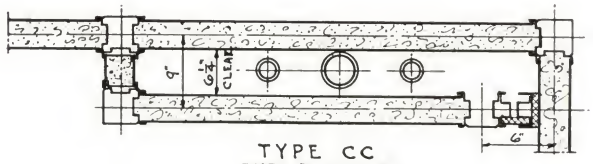


ELEVATION

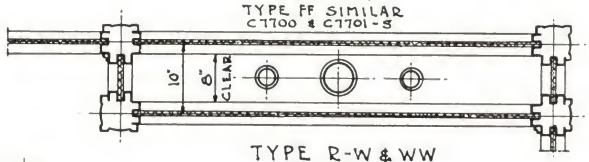


PLAN SECTIONS

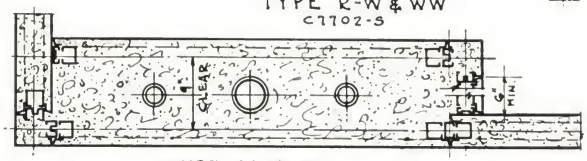
THROUGH POST & BAR REINFORCEMENTS



TYPE CC
TYPE FF SIMILAR
C7700 & C7701-S



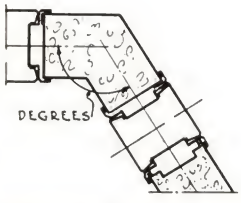
TYPE R-W & WW
C7702-S



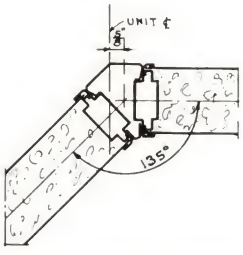
TYPE AA & DD
C7703 & C7706-S

PLUMBING ENCLOSURE PLANS

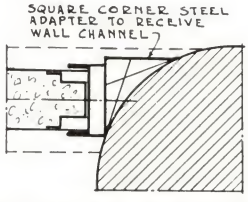
MINIMUM PANEL DEPTHS SHOWN MAY BE INCREASED BY STANDARD UNIT DIMENSIONS



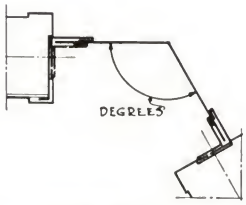
TWO WAY ANGULAR CORNER
TYPE CC & FF
CG800 & G801-NS



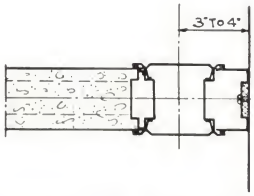
135° ANGULAR CORNER
TYPE CC
CG802-S



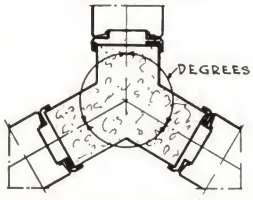
END FILLER AT ROUND COLUMN
TYPE CC & FF
CG810 & G811-S



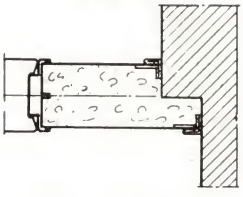
TWO WAY CORNER
TYPE HK
CG804-NS



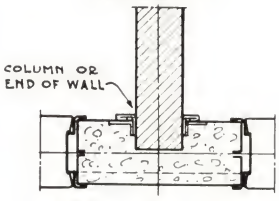
TIGHT END CONDITION
TYPE CC & FF
CG812 & G813-S



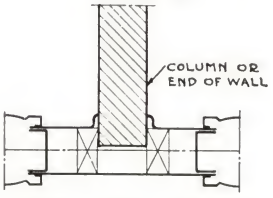
THREE WAY ANGULAR CORNER
TYPE CC & FF
CG820 & G821-NS



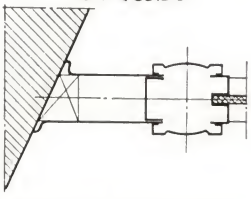
SPLIT END FILLER
TYPE CC & FF
CG814 & G815-S



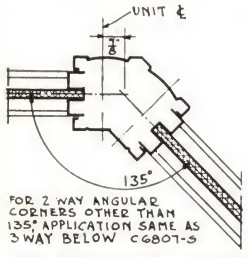
PANEL PAST COLUMN
TYPE CC & FF
CG830 & G831-S



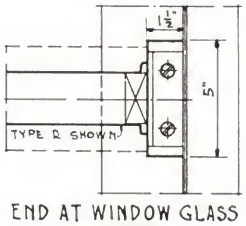
PANEL PAST COLUMN
TYPE R
CG833-S



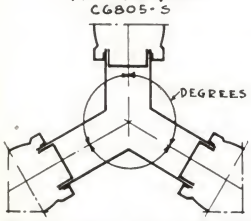
ANGULAR WALL END
TYPE R
CG816-S



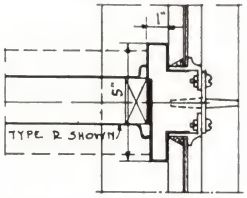
135° ANGULAR CORNER
TYPE R-W & WW
CG805-S



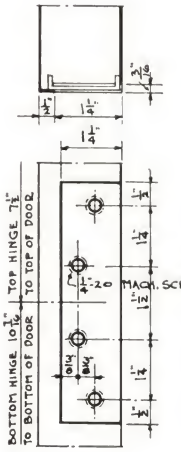
END AT WINDOW GLASS
ALL TYPES
CG840-S



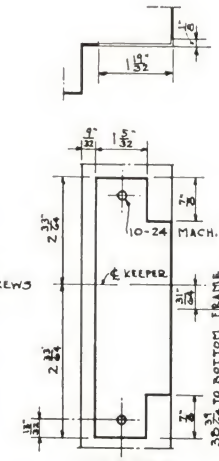
THREE WAY ANGULAR CORNER
TYPE R-W & WW
CG823 & G824-NS



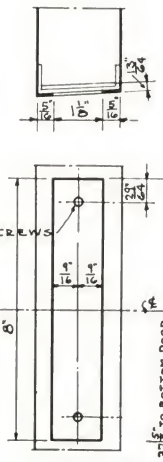
END AT WINDOW MULLION
ALL TYPES
CG845-S



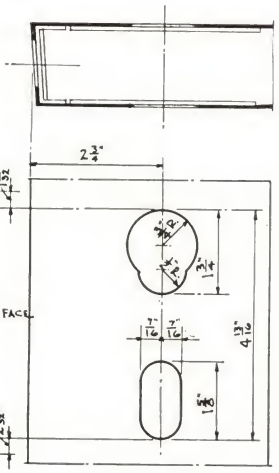
HINGE



KEEPER



LOCK FACE



LOCK MORTISE

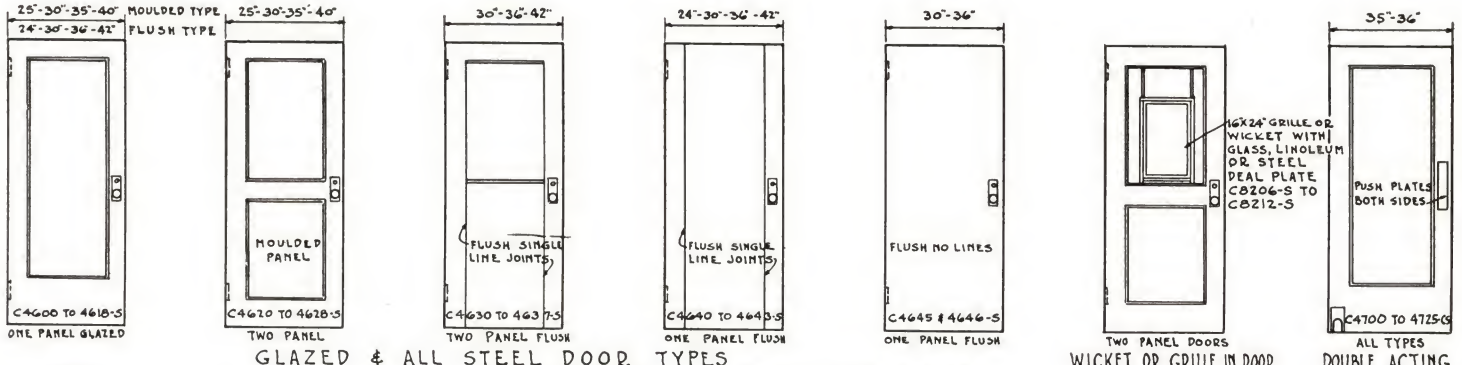
STOCK DOOR HARDWARE MORTISES

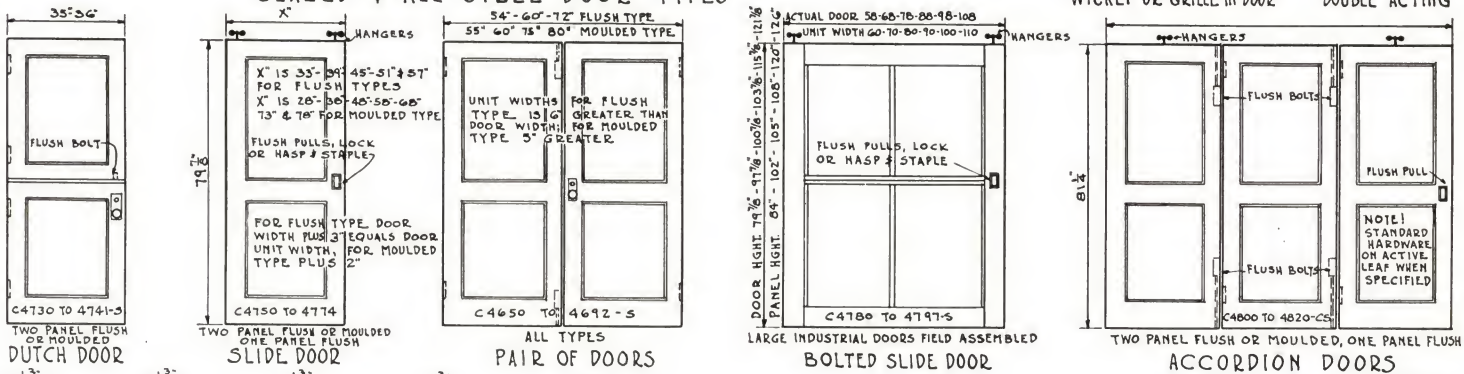
SHIPPING CLASSIFICATION
SUFFIX S = IN STOCK CS = CUTDOWN STOCK NS = NO STOCK

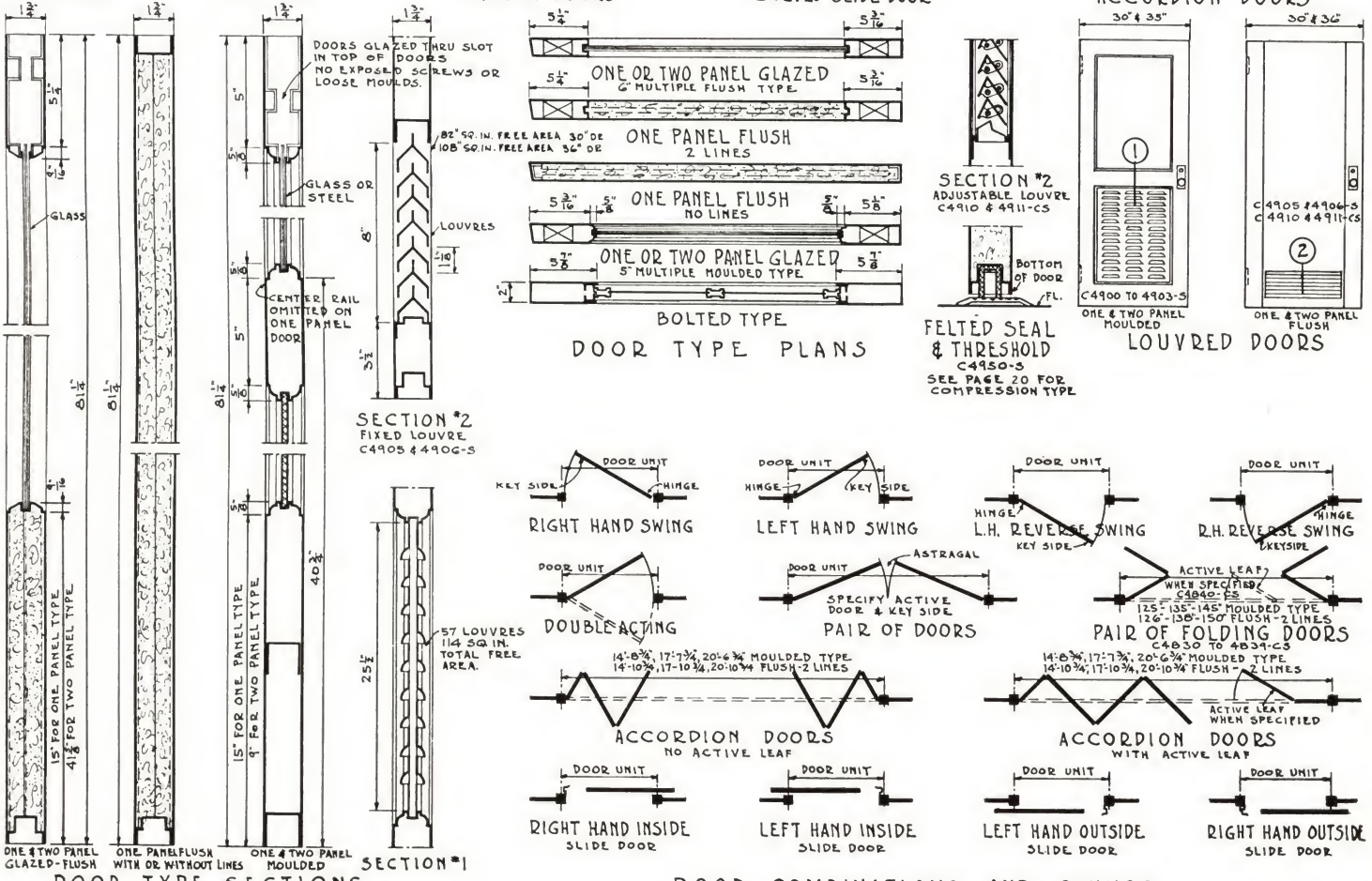
PATENTED & PAT PENDING

DOOR TYPES

• flush, moulded, louvered, folding and slide





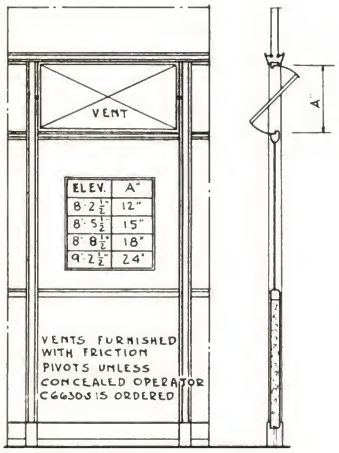


PATENTED & PAT. PENDING.

SHIPPING CLASSIFICATION
SUFFIX S = IN STOCK CS = CUTDOWN STOCK NS = NO STOCK

VENTILATION-SHELVING

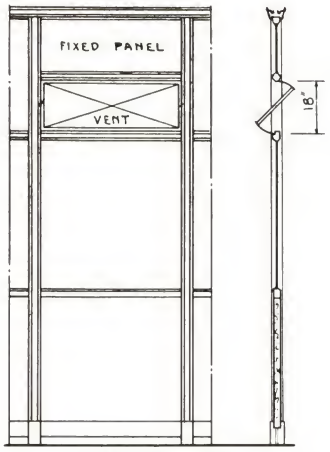
• vents, wire-mesh, grilles and louvers



8'-2½" TO 9'-2½" ELEVATION

HORIZONTAL PIVOTED VENTS

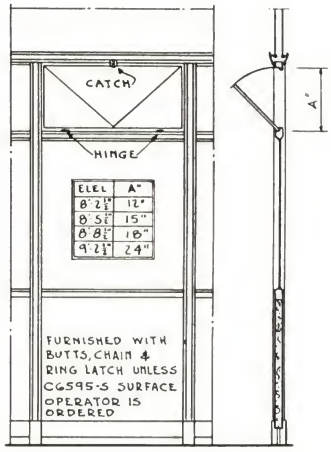
ALL TYPES OF GLASS PANEL EXCEPT H-K & HK CG520 TO G575-S



10'-2½" ELEVATION

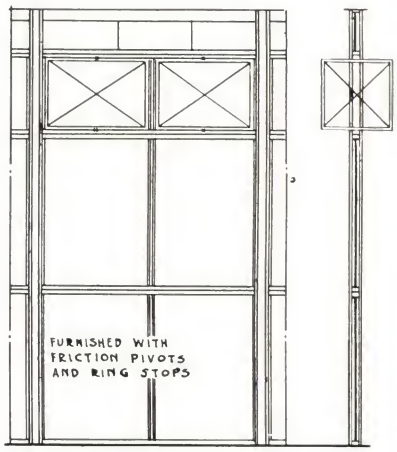
HORIZONTAL PIVOTED VENTS

ALL TYPES OF GLASS PANEL EXCEPT H-K & HK CG520 TO G575-S



BOTTOM HINGED VENTS

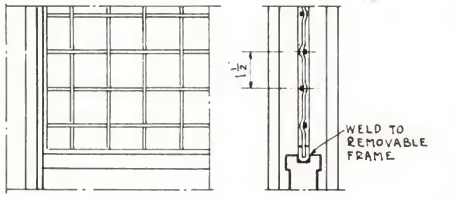
ALL TYPES CG580 TO G590-NS



VERTICAL PIVOTED VENTS

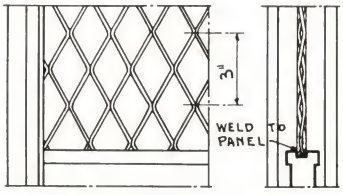
TYPE H-K & HK ONLY CG600 TO GG20-S

NOTE: IN STEEL PARTITION VENTS ARE STEEL GLAZED.



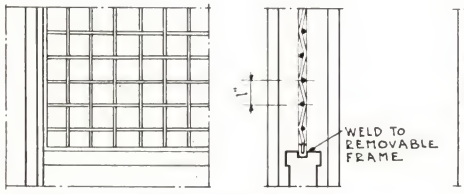
⅛" SQUARE WIRE MESH

C1220-CS



#9 GA. EXPANDED MESH

C1240-CS

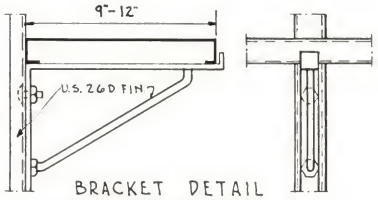


#10 GA. ROUND WIRE MESH

C1230-CS

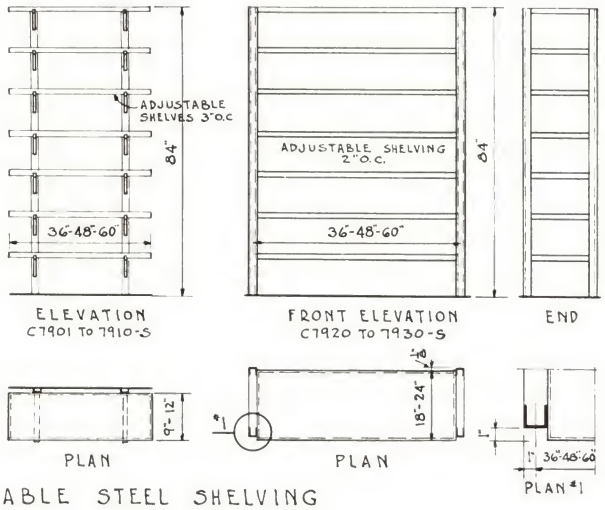
WIRE MESH PANELS

REMOVABLE WIRE MESH PANELS INTERCHANGEABLE WITH STEEL OR GLASS PANELS. WHEN USED WITH GRAINED FINISHES MESH IS PAINTED FLAT COLOR TO MATCH

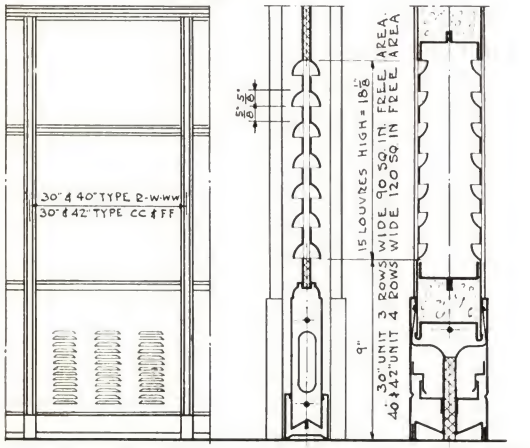


BRACKET DETAIL

C7901 TO 7910-S SHELVING

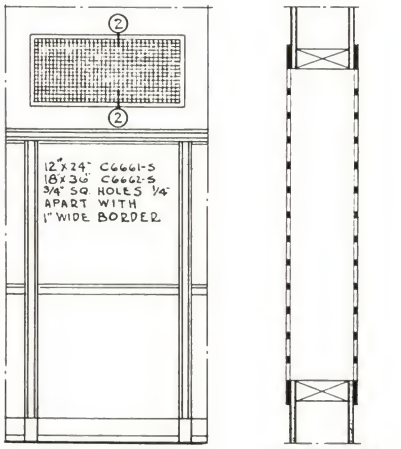


ADJUSTABLE STEEL SHELVING



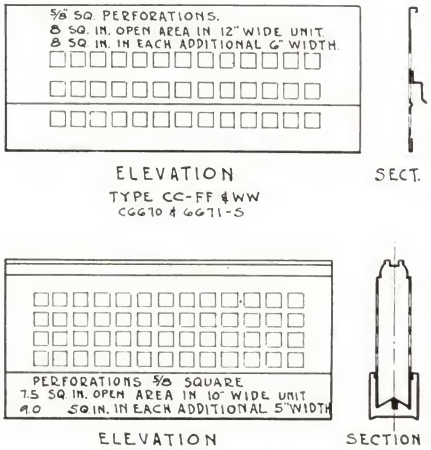
ELEVATION — TYPE R&W CG640 & G641-S — TYPE CC-FF & WW CG642 TO G647-S

LOUVERED PANELS



ELEVATION — SECTION #2

GRILLE IN TOP FILLER



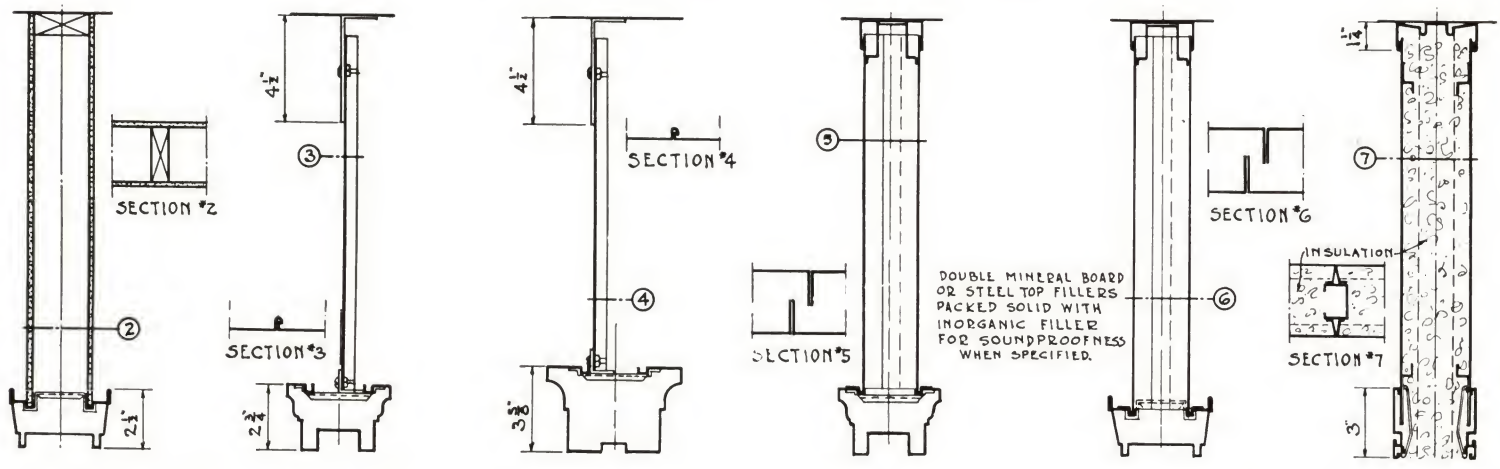
PERFORATED BASE

SHIPPING CLASSIFICATION
SUFFIX S = IN STOCK CS = CUTDOWN STOCK NS = NO STOCK

PATENTED & PAT PENDING

TOP FILLERS-CEILING

● insulated-acoustic — steel and mesh



DOUBLE MINERAL BOARD
TYPE R-W-WW-CC-FF
CC SHOWN
C2010 TO 2019-S

SINGLE STEEL
TYPE R
C2020 TO 2027-S

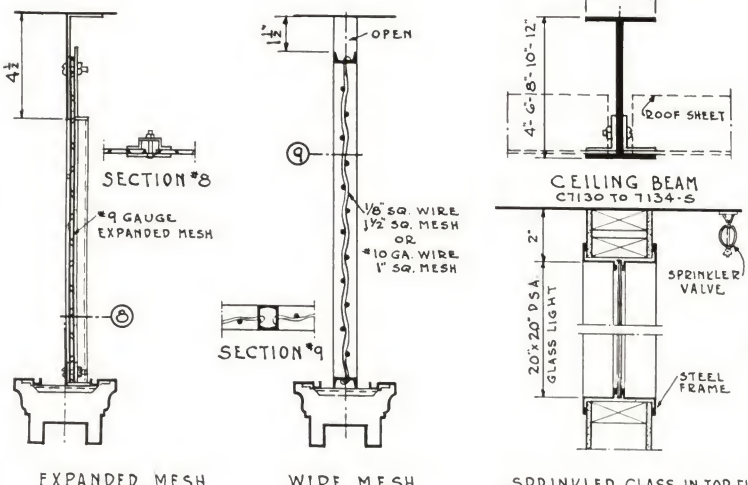
SINGLE STEEL
TYPE HK
C2020 TO 2027-S

DOUBLE STEEL
TYPE R
C2030 TO 2037-S

DOUBLE STEEL
TYPE CC & FF
C2030 TO 2037-S

DOUBLE STEEL
TYPE AA & BB
C2040 TO 2046-S

TOP FILLERS FROM CORNICE TO CEILING

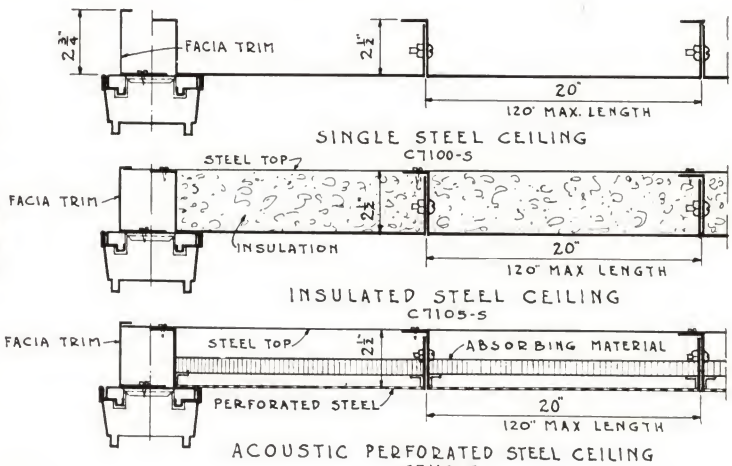


EXPANDED MESH
TYPE R & HK
R SHOWN
C2050 TO 2056-CS

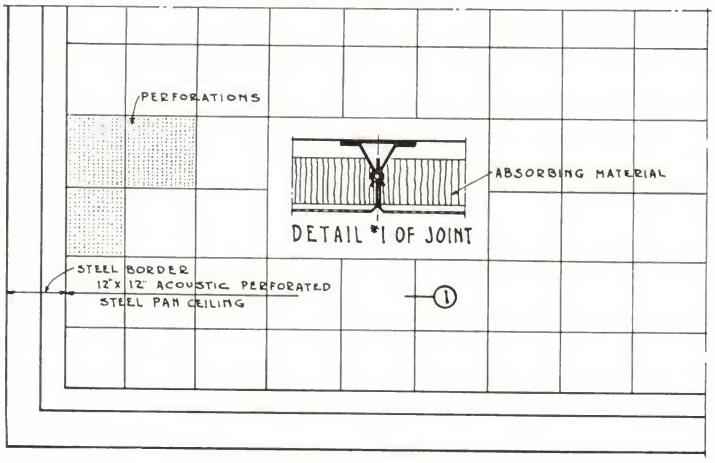
WIRE MESH
TYPE R & HK
R SHOWN
C2060 TO 2066-NS

OPEN TOP FILLERS

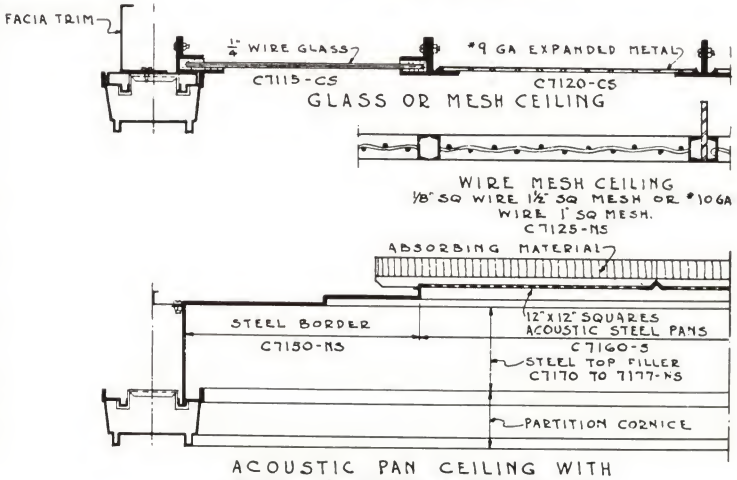
SPRINKLER GLASS IN TOP FILLER
OPPOSITE SPRINKLER VALVE
C2130-S



CEILING SECTIONS
CC TYPE OF CORNICE SHOWN, SIMILAR APPLICATION TO OTHER TYPES OF CORNICE



PLAN OF ACOUSTIC STEEL PAN CEILING WITH STEEL BORDER
C7160-NS



ACOUSTIC PAN CEILING WITH STEEL BORDER & TOP FILLER

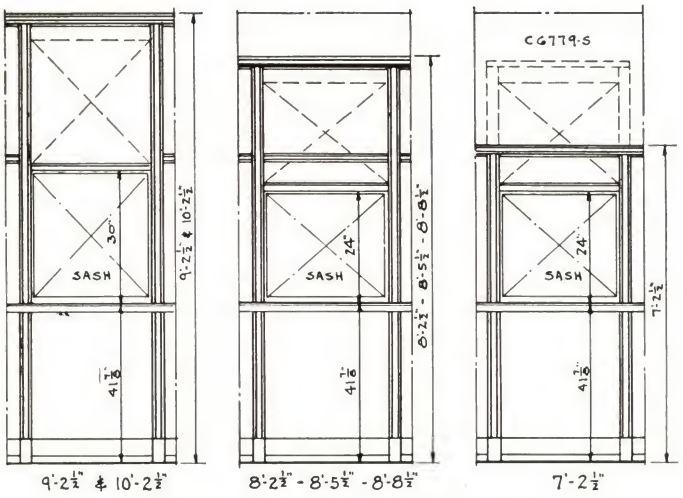
CEILING SECTIONS

PATENTED & PAT. PENDING

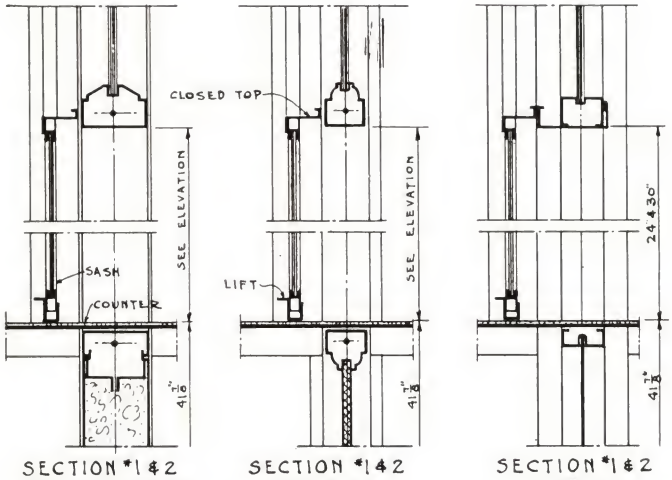
SHIPPING CLASSIFICATION
SUFFIX S • IN STOCK CS • CUTDOWN STOCK NS • NO STOCK

SLIDEUP SASH-GRILLES

• for all types of partitions



SLIDE UP SASH ELEVATIONS

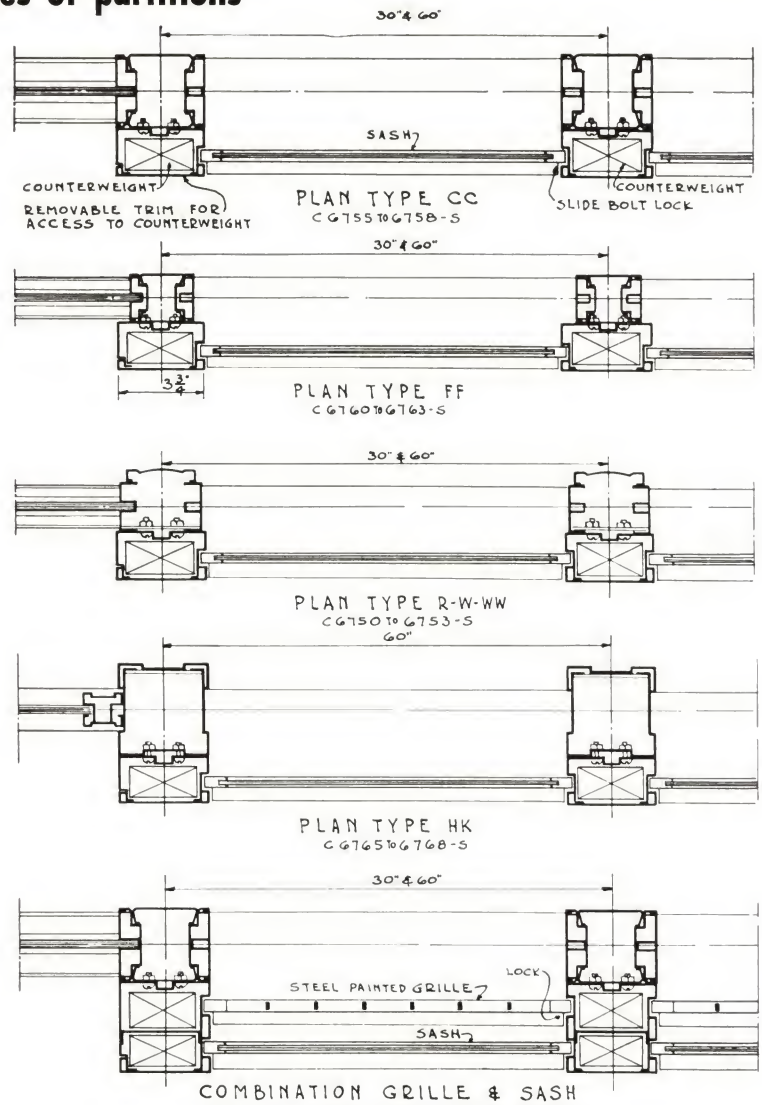


SECTION #1 & 2
TYPE CC - FF SIMILAR

SECTION #1 & 2
TYPE R & W

SECTION #1 & 2
TYPE HK

SLIDE UP SASH WITH COUNTER



PLAN TYPE CC
CG755 TO G758-S

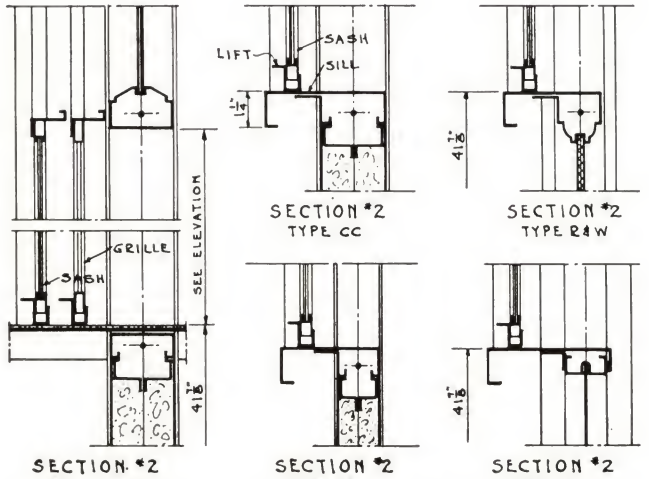
PLAN TYPE FF
CG760 TO G763-S

PLAN TYPE R-W-WW
CG750 TO G753-S

PLAN TYPE HK
CG765 TO G768-S

COMBINATION GRILLE & SASH
TYPE CC SHOWN, OTHER TYPES SIMILAR
CG770 TO G775-S

SLIDE UP SASH PLANS



SECTION #2
TYPE CC SHOWN

SECTION #2
TYPE CC

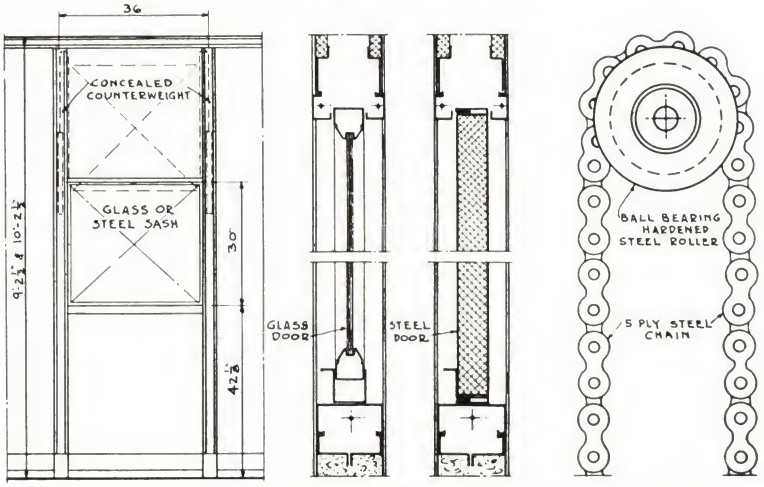
SECTION #2
TYPE R & W

SECTION #2
TYPE FF

SECTION #2
TYPE HK

SASH & GRILLE

SLIDE UP SASH WITHOUT COUNTER



ELEVATION

GLASS OR STEEL SASH SECTION
TYPE CC

COUNTERWEIGHT PULLEY & CHAIN
ALL SLIDE UP SASH

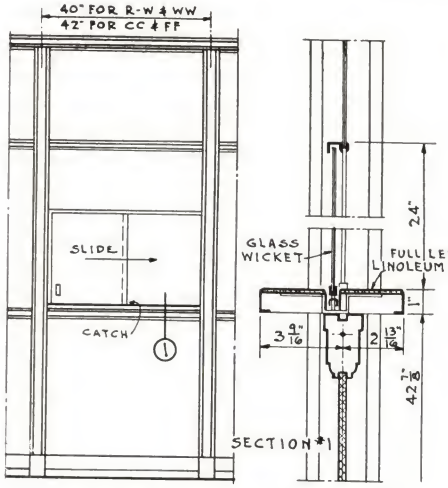
SLIDE UP SASH WITHIN PANEL
CG796 & G797-CS

SHIPPING CLASSIFICATION
SUFFIX S = IN STOCK CS = CUTDOWN STOCK NS = NO STOCK

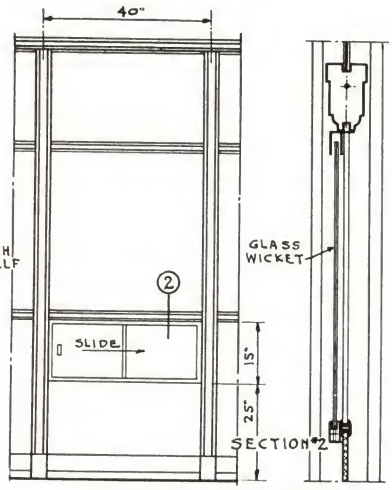
PATENTED & PAT PENDING

DELUXE UTILITIES

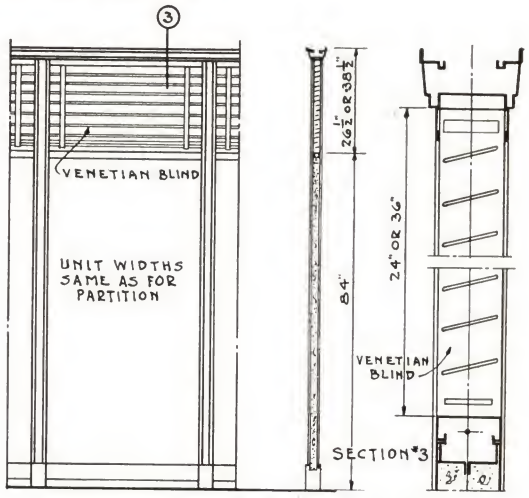
• slide wickets, partitions on curb, venetian panels



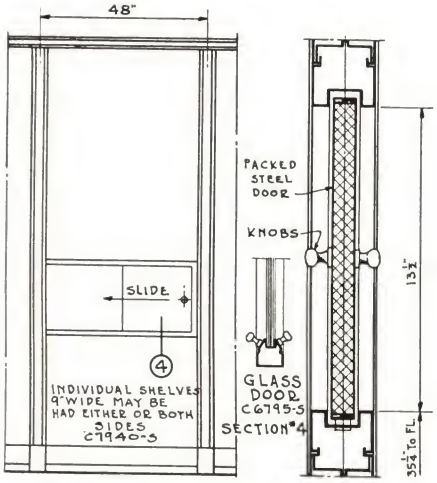
SLIDING GLASS WICKET
TYPE CC-FF-R-W&WW
ABOVE CHAIR RAIL
CG780 & G781-S



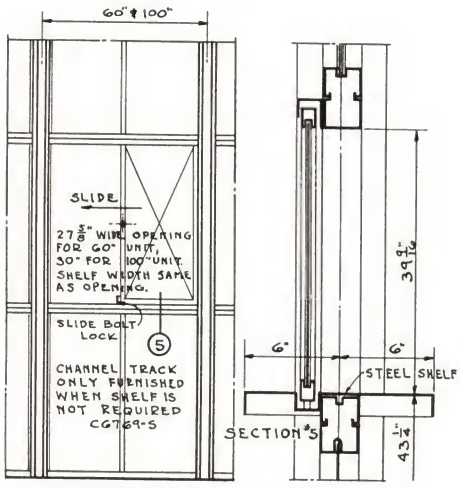
SLIDING GLASS WICKET
TYPE R&W
BELOW CHAIR RAIL
CG785-S



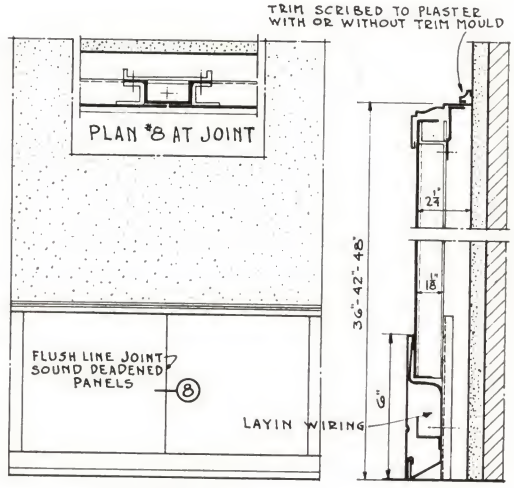
PARTITION WITH VENETIAN BLINDS
TYPE CC 9'-2½" OR 10'-2½" ELEVATION
CG680 & G681-S



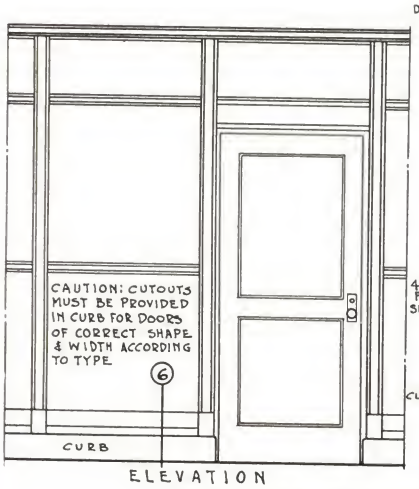
SLIDING STEEL WICKET
TYPE CC
C6790-S



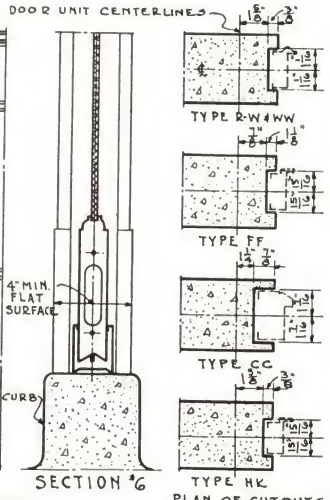
SLIDING GLASS OR STEEL WICKET
TYPE HK
CG782 & G783-S



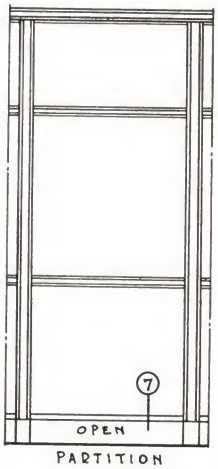
ELEVATION SECTION
LOW WAINSCOTING
UNIT WIDTHS 12"-24"-36"-42"-48"
C7450 TO 7470-NS



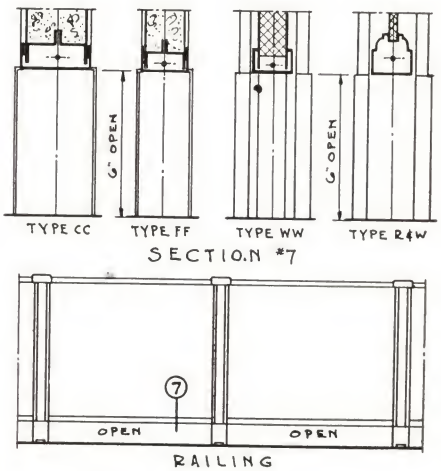
ELEVATION
PARTITION ON CURB
CG860 & G861-S



SECTION #6
PLAN OF CUTOUTS FOR DOOR FRAME



PARTITION



RAILING

OPEN BASE PARTITION & RAILING

PATENTED & PAT. PENDING

SHIPPING CLASSIFICATION
SUFFIX S=IN STOCK CS=CUTDOWN STOCK NS=NO STOCK

MASTERWALL HARDWARE

• cylinder, latch, and communicating hardware



C6010-S — Bitt key lock set, latch operates from either side by knobs, dead bolt operated either side by bitt key, 2¾" backset, 1⅛" x 8" lock face, 2¼" x 7 7/16" escutcheons, 2¼" dia. round knobs, center of knobs 39⅝" above floor, wrought or cast bronze trim, U. S. 10 finish; wrought steel trim, U. S. 18 finish is stocked. Used on partition doors.



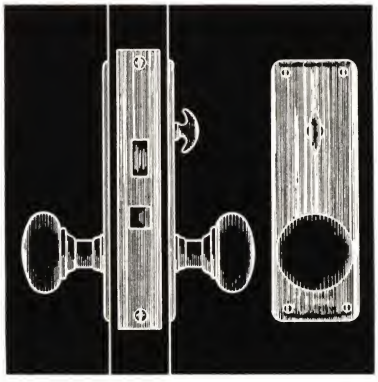
C6011-S — Latch set, operates from either side by knobs. It does not have a dead bolt. 2¾" backset, 1⅛" x 8" lock face, 2¼" x 7 7/16" escutcheons, 2¼" dia. round knobs, center of knobs 39⅝" above floor; wrought or cast bronze trim, U. S. 10 finish. and wrought steel trim, U. S. 18 finish is carried in stock. Used on partition doors.



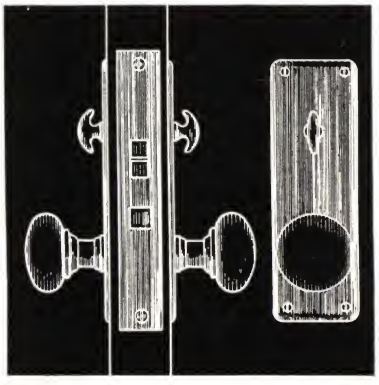
C6012-S — Cylinder lock set, latch operated inside by knob, outside by knob or cylinder. Buttons in lock face set operation from outside. 2¾" backset, 1⅛" x 8" lock face, 2¼" x 7 7/16" escutcheons, 2¼" dia. knobs, center 36½" above floor, wrought or cast bronze trim U. S. 10 finish; wrought steel trim, U. S. 18 finish, stocked. Individual keys, Hauserman or bldg. masterkey.



C6013-S — Pickproof cylinder lock set, operated inside by knob, outside by knob or cylinder. Buttons in lock face set operation from outside. 2¾" backset 1⅛" x 8" lock face, 2¼" x 7 7/16" escutcheons, 2¼" dia. knobs, center 36½" to floor, wrought or cast bronze trim, U. S. 10 finish; wrought steel trim, U. S. 18 finish, stocked. Individual keys, Hauserman or bldg. masterkey.



C6014-S — Single communicating lock set, operates from either side by knobs, thumbturn on inside operates the dead bolt. 2¾" backset, 1⅛" x 8" lock face, 2¼" x 7 7/16" escutcheons, 2¼" dia. round knobs, center of knobs 36⅝" above floor, wrought or cast bronze trim, U. S. 10 finish, and wrought steel trim, U. S. 18 finish, stocked. Used on partition doors.



C6015-S — Double communicating lock set, operates either side by knobs, thumbturn on both sides operates individual dead bolts, 2¾" backset, 1⅛" x 8" lock face, 2¼" x 7 7/16" escutcheons, 2¼" dia. round knobs, center of knobs 36⅝" above floor, wrought or cast bronze trim, U. S. 10 finish, and wrought steel trim, U. S. 18 finish, stocked.

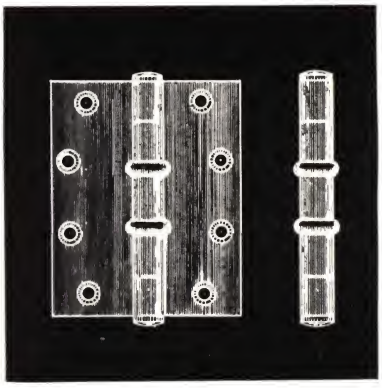


C6016-S—Mortise dead bolt lock, no knobs or latch, dead bolt operated outside by cylinder inside by thumb turn, 2¾" backset, 1⅛" x 8" lock face, 2¼" x 7 7/16" escutcheons, wrought bronze trim, U. S. 10 finish; wrought steel trim, U. S. 18 finish, stocked. Individual keys, Hauserman or bldg. masterkey system.



C6017-S—Push plate at left, 3⅛" x 14½", center located 47" above floor, wrought or cast bronze C-6250 trim, U. S. 10 finish; wrought steel, U. S. 18 finish, stocked

C6018-S—Pull plate at right 3⅛" x 14½", center located 43" above floor, wrought or cast bronze C-6251 trim, U. S. 10 finish; wrought steel trim, U. S. 18 finish stocked.



C6019-S — Butts are 5" x 4" size and are of wrought steel hardened 3/4" thick. They have ball bearing washers for easy, noiseless operation and long life. They are carried in stock in U. S. 10 and U. S. 18 finish. See page No. 36 for dimensional template.

SHIPPING CLASSIFICATION — Suffix (s) = in stock; (cs) = cut down stock. (ns) = no stock

SLIDE DOOR HARDWARE

• pulls, locks, and hangers



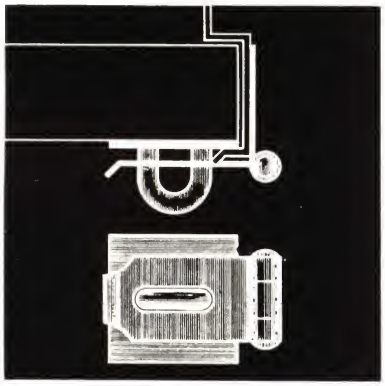
C6020-S — Cylinder lock set for slide door, latch operated inside by lever handle, outside by cylinder, hooked latch engages with cast bronze keeper. 2¾" backset, 1⅛" x 7¼" lock face, 1⅞" x 6¼" recessed wrought bronze escutcheons. U. S. 10 and U. S. 18 finish stocked.



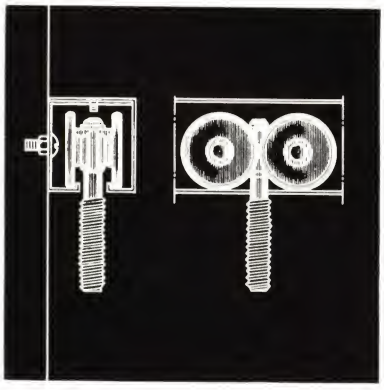
C6021-S — Latch set for slide door, latch is operated from either side by lever handles. The latch engages with the cast bronze keeper. It has a 2¾" backset, 1⅛" x 7¼" lock face, 1⅞" x 6¼" recessed wrought bronze escutcheons. U. S. 10 and U. S. 18 finish is carried in stock.



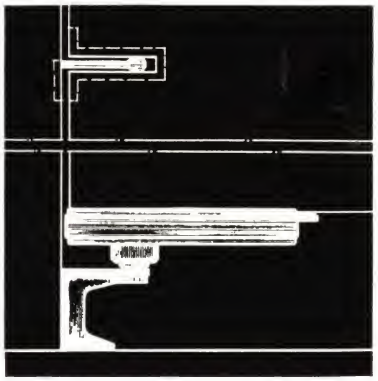
C6023-S—Flush door pull, cast bronze U. S. 10 finish or C6022-S cast iron U. S. 18 finish stocked. 3" x 4½" x ¾" deep, used on slide doors or accordian doors when latch or lock is not specified



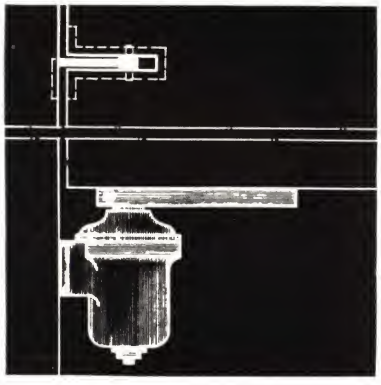
C6024-S — Hasp and staple, furnished on slide doors when specified. The padlock is not included. The hasp and staple are made of extra heavy wrought steel, the hasp being 1¾" wide. They are carried in stock and have a painted finish.



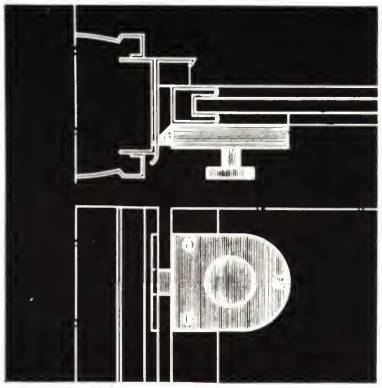
C6026-S — Hanger for slide doors has 2" diameter ball bearing steel rollers and is adjustable in height, 2 rollers are furnished on doors up to 8 feet wide. 3 rollers are used on all slide doors over 8 feet wide. Hangers and track are carried in stock.



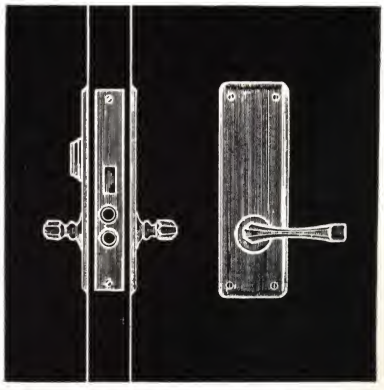
C6030-S — Gate hinge is double acting and self centering. It is ball bearing and has a steel die cast case, malleable iron bracket. Top pivot and bottom hinge painted flat color to match railing. It is carried in stock and used on low double swing railing gates.



C6031-S—Gate hinge is single acting, checking, ball bearing, with cast iron case sanded. Top pivot and bottom hinge painted flat color to match railing. It is carried in stock and used on high gates regularly, on low gates when specified single acting.



C6035-S — Gate latch is of the secret type and has a fixed knob. The latch is operated by pressing button on underside of case. Overall size is 2" x 2⅜" x ¾". It is carried in stock in U. S. 10 and U. S. 18 finish. Used on low gates when specified.

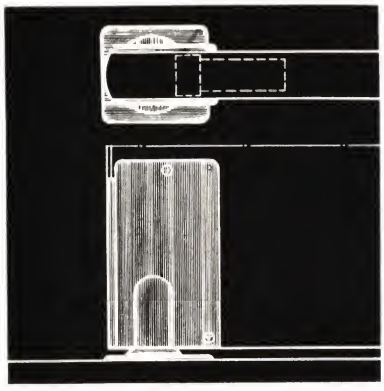


C6034-S—Gate lock set operated inside by lever handle, outside by lever handle or cylinder. Buttons in lock face set operation from outside. 2⅜" backset ⅞" x 5½" lock face, 2" x 6" escutcheons. Cast bronze trim U. S. 10 finish. Cast iron trim U. S. 18 finish stocked. Individual keys, Hauserman or building masterkey system.

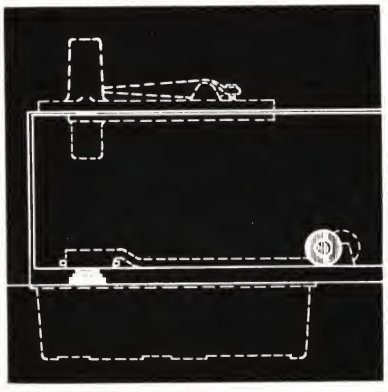
SHIPPING CLASSIFICATION — Suffix (s) = stock; (cs) = cut down stock; (ns) = no stock.

HARDWARE DETAILS

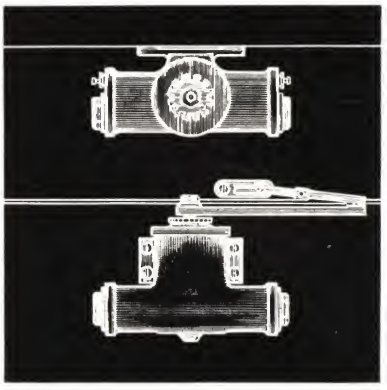
• stops, checks, and catches



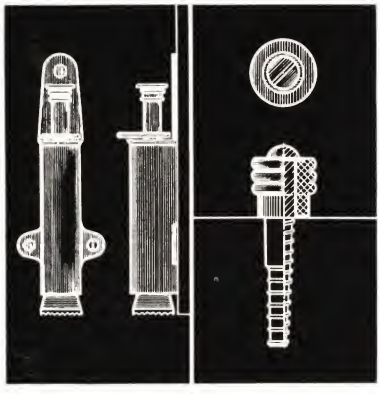
C6037-S — Double acting hinge, permits doors to swing both ways. It is ball bearing, with tension adjustment and has steel planished trim, floor plate and top pivot. U. S. 10 and U. S. 18 finish carried in stock. Used on partition doors.



C6038-S — Double acting checking floor hinge, case recessed in floor, 3 $\frac{1}{16}$″ for medium size, 3$\frac{5}{8}$″ for large size, Bronze floor plate. Use with threshold requires special non-stock threshold. Medium size used on doors up to 36″ wide, large size over 36″ wide, medium size remains open at 90°. Use permitting C-6037-S hinge is recommended.

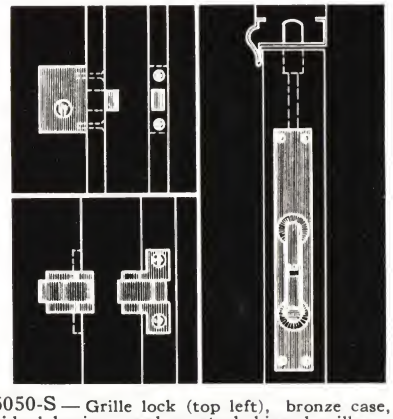


C6039-S — Door check, cast iron case, gold bronze and black finish stocked, holder arm for holding door in open position furnished when specified. Use size B on doors up to 30" wide, size C on doors 36" to 42", size D on doors over 42" wide.



C6045-S — Door holder (left), cast bronze or iron case foot operation, rubber floor grip. U. S. 10 and U. S. 18 fin. stocked.

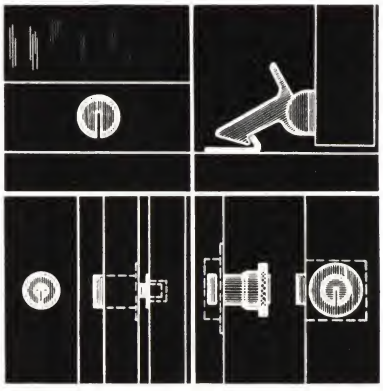
C6046-S — Door stop (right), rubber bumper, 1$\frac{3}{8}$" diameter, 1$\frac{1}{4}$" high, metal collar U. S. 10 and U. S. 18 fin. stocked. Specify type floor.



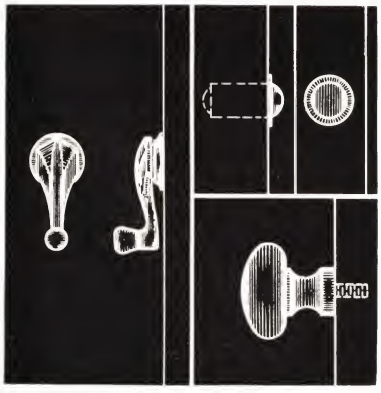
C6050-S — Grille lock (top left), bronze case, individual keying, used on stock hinged grilles.

C6051-S — Wicket catch, bottom left, mortise type, U. S. 10 fin. used on stock hinged wickels.

C6055-S — Flush bolts (right), cast bronze face 1″ x 6$\frac{3}{4}$″, used on partition doors.



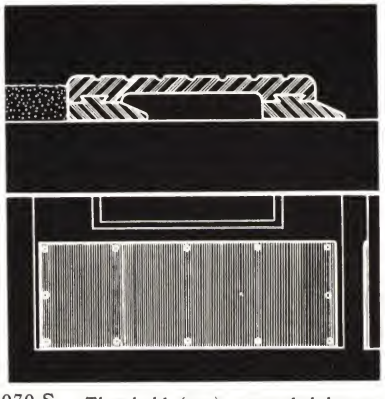
C6060-S — Flat key lock (top left), for sliding glass doors. C6061-S — Flat key lock (bottom left), for sliding steel doors, $\frac{11}{16}$″ dia. cylinder. C6062-S — Door lock (bottom right), latch locked by flat key in 1$\frac{1}{8}$″ dia. knob, for hinged steel cabinet doors. U. S. 10 finish. C6063-S — Door catch (top right), for inactive hinged steel cabinet doors.



C6065-S — Transom operator handle (left), for concealed transoms, U. S. 10 and U. S. 18 fin. stocked.

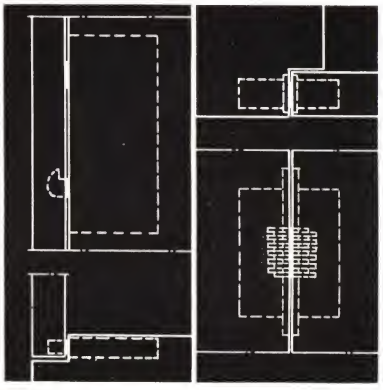
C6068-S — Knob (bottom right), 1″ diameter, wrought bronze U. S. 10 and U. S. 18 fin. stocked. For hinged or sliding steel cabinet or wicket doors.

C6067-S — Bullet catch (top right), $\frac{1}{2}$″ diameter, spring operation, for hinged steel cabinet doors.



C6070-S — Threshold (top), extruded bronze $\frac{3}{8}$″ high, 3$\frac{1}{2}$″ wide, $\frac{1}{4}$″ high adapters when specified for special conditions such as rugs, linoleum, etc.

C6076-S — Kick plates (bottom), specify one or both sides, No. 14 gauge, 9″ high, bronze or stainless steel brushed finish.



C6081-S — Concealed latch (left), used as invisible latch on hinged steel cabinet doors. Latch engages door when closed, exerting pressure on door, releases door. Door thrust open by trigger arrangement.

C6085-S — Concealed hinge (right), ply leaf hinges, invisible, for hinged steel cabinet doors.

SHIPPING CLASSIFICATION — Suffix (s) = stock; CS = cut down stock. (ns) = no stock.

ELECTRICAL ACCESSORIES

• switches, receptacles, push buttons



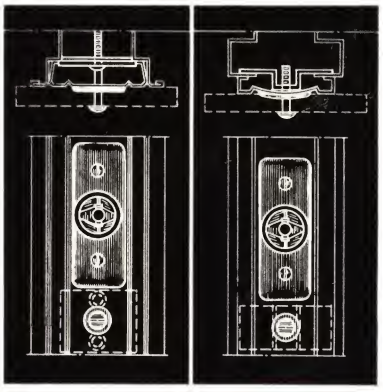
C7000-S — Duplex receptacle, (left), 1 3/4" x 4 1/16" x 1/8" plate, 15 amp. 125v.; 10 amp. 250 v., U. S. 10 and U. S. 18 finish. Fits all types, except FF posts.

C7001-S — Duplex receptacle, (right), 1 11/16" x 4 1/16" x 1/16" plate, 15 amp. 125 v.; 10 amp. 250 v. Fits all types. Fittings interchangeable in flush plates. U. S. 10 and U. S. 18 finish.



C7005-S — Two toggle switch, (left), vertical gang, 1 11/16" x 7 1/16" x 3/16" fiush plate, 10 amp. 125 v. 5 amp. 250 v., U. S. 10 and U. S. 18 fin. For FF posts.

C7006-S — Three toggle switch, (right), vertical gang, 1 11/16" x 9 9/16" x 3/16" flush plate, 10 amp. 125 v., 5 amp. 250 v., U. S. 10 and U. S. 18 fin. For FF posts.



C7007-S — Fan bracket, (left), receptacle with flush plate, reinforced fan connection, CC application shown, AA, BB, FF similar U. S. 10 and U. S. 18 fin.

C7008-S — Fan bracket, (right), receptacle with flush plate, reinforced fan connection, R, W, WW application shown. U. S. 10 and U. S. 18 fin. Receptacles 15 amp. 125 v.; 10 amp. 250 v.



C7010-S — Single toggle switch, (left), 1 3/4" x 4 1/16" x 1/8" flush plate, 10 amp. 125 v.; 5 amp. 250 v. U.S. 10 and U.S. 18 fin. Fits all types, except FF posts.

C7011-S — Single toggle switch, (right), 1 11/16" x 4 1/16" x 1/16" flush plate, 10 amp., 125 v.; 5 amp. 250 v., U. S. 10 and U. S. 18 fin. Fits all types. Fittings interchangeable in flush plates.



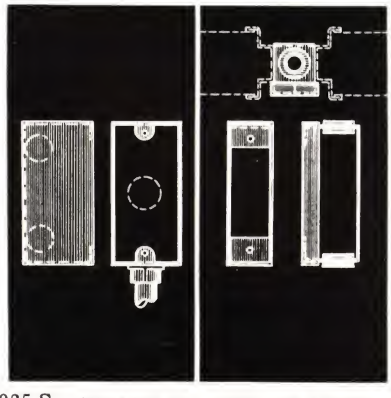
C7015-S — Two toggle switch, (left), 1 3/4" x 4 1/16" x 1/8" flush plate, 10 amp. 125. v.; 5 amp. 250 v. U.S. 10 and U.S. 18 fin. Fits all types, except FF posts.

C7016-S — Two toggle switch, (right), 1 11/16" x 4 1/16" x 1/16" flush plate, 10 amp. 125 v.; 5 amp. 250 v. U.S. 10 and U.S. 18 fin. Fits all types except FF posts. Fittings interchangeable in flush plates.



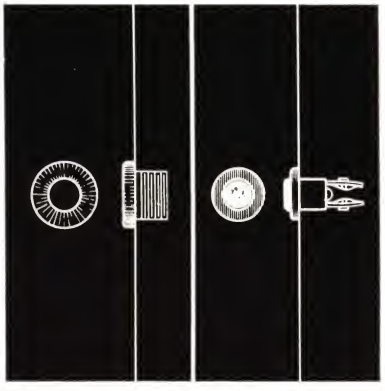
C7020-S — Three toggle switch, (left), 1 3/4" x 4 1/16" x 1/8" finish plate, 10 amp. 125 v.; 5 amp. 250 v, U. S. 10 and U. S. 18 finish. Fits all types except FF posts.

C7021-S — Three toggle switch, (right), 1 11/16" x 4 1/16" x 1/16" flush plate, 10 amp. 125 v.; 5 amp. 250 v, U. S. 10 and U. S. 18 finish. Fits all types, except FF posts. Fittings interchangeable in flush plates.



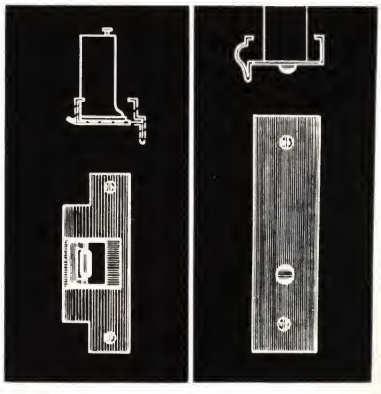
C7025-S — Electrical box, (left), for switches, receptacles etc., 2" x 4" x 1 7/8" deep, steel painted black. Fits all types, except FF posts.

C7026-S — Electrical box, (right), for switches, receptacles etc., bushings top and bottom, designed for type FF posts only.



C7030-S — Fibre bushing, (left), black finish, 3/8" diameter clearance hole, for use in partition as outlet for phone or other wiring.

C7035-S — Push button, right illustration, 7/8" diameter, pearl face, for bells, buzzers, etc., installed in posts or chair rail.



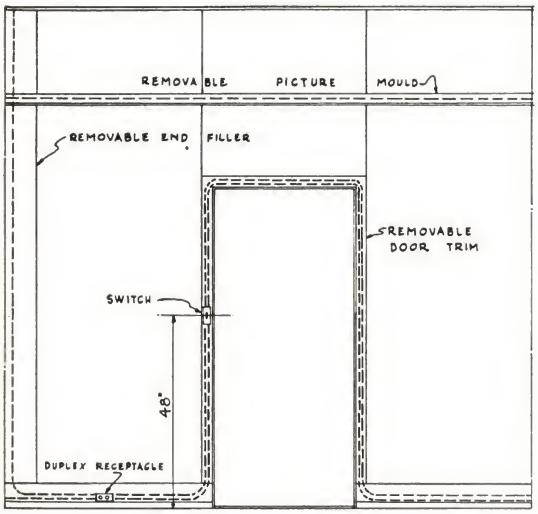
C7040-S — Electric door opener, (left), 2 ohms resistance, mortise type, roller nose. Used for releasing locked door by push button from remote position.

C7045-S — Electric door switch, (right), single pole, 6 amp. 125 v., 3 amp. 250 v., operates light when door is opened, used for closets, etc.

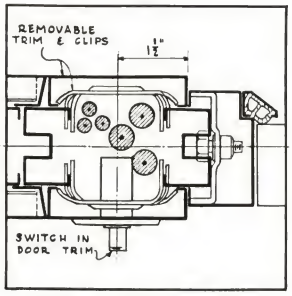
SHIPPING CLASSIFICATION — Suffix (s) = stock; (cs) = cut down stock. (ns) = no stock.

ELECTRICAL DETAILS

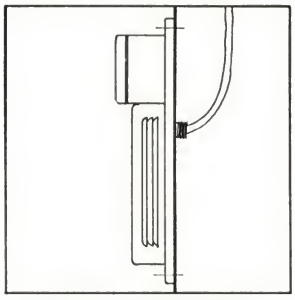
• partition wiring facilities



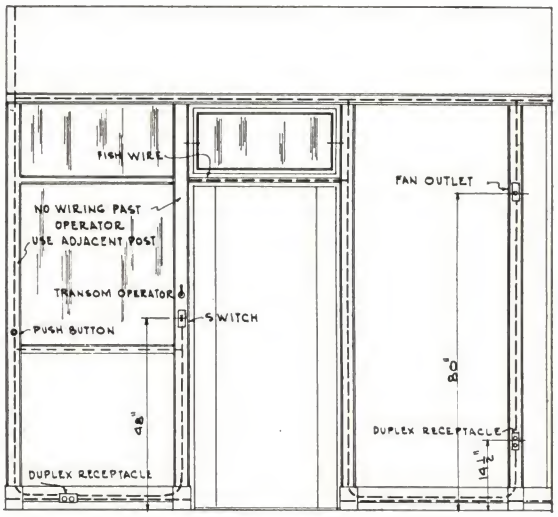
TYPICAL · TYPE · AA ·



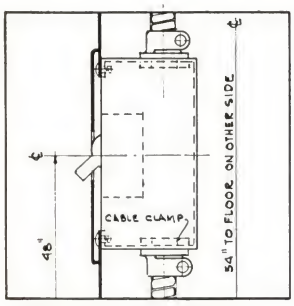
LAYIN WIRING TRIM



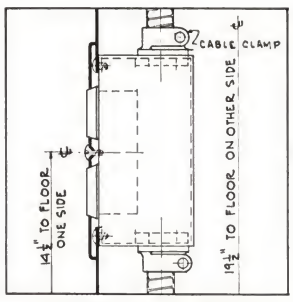
APPLIED · THERMOSTAT ·



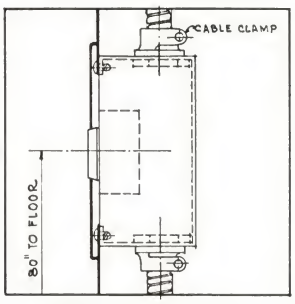
·TYPICAL · TYPE ·CC·FF·BB·



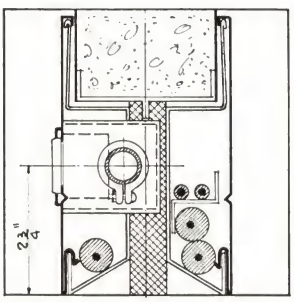
·SWITCH IN· POST·



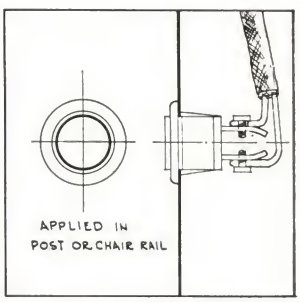
RECEPTACLE IN POSTS



·FAN · OUTLET



RECEPTACLE IN BASE



·PUSH·BUTTON·

PARTITION TYPE WIRING FACILITIES:—Layin wiring facilities for both high and low tension are provided in types AA, BB, and EE in wiring raceways. This includes removable base, ends, door trim for layin wiring both sides of partition. Removable picture mould for layin wiring, continuous from wall to wall, both sides is also provided. Wiring past operator in door trim is possible in types AA, BB, CC and EE.

Types CC and FF both have double raceway layin wiring base and cornice trough each side of partition. Wiring at posts and fish wire in chair rails. No wiring past concealed operator, Type FF.

Removable base for double raceway layin wiring on types W and WW. Fishwire in base on type R and K. Wiring in posts and in cornice on types WW, W, R. Wiring in posts on HK, H and K.

Removable base for layin wiring in semi-flush rail and glazed railing, fish wire base in moulded design railing.

ELECTRICAL FITTINGS: General Electric fittings and accessories are standard for types AA, BB, EE, CC, WW, W, R, HK, H, K. (See accessories page 45).

Pass and Seymour fittings and accessories are standard for types AA, BB, EE and FF. (See accessories page 45). In instances where electrical fittings are to be furnished by others, contractor should be notified of our partition standards, which should be adhered to.

Floor feeds should never be located at posts of any type of partition, but should be turned into wiring base at least 6" away from post center line to allow for stampings and shims.

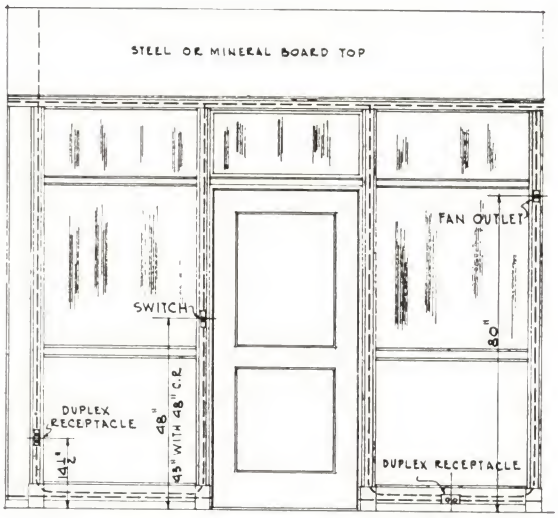
Ceiling feeds may be turned down in between top filler sheets into cornice and posts as required. Wall feeds may be run into partition through end filler.

MAX. BX CABLE AND TUBE SIZES

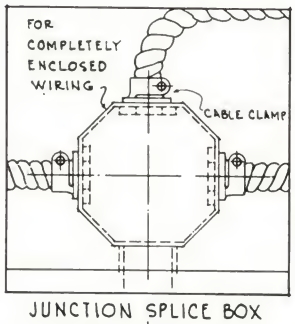
TYPE	POST	CORNICE	BASE	DR. HEAD
AA	—	⅜"	1⅛"	⅞"
BB	1⅛"	⅜"	1⅛"	⅞"
CC	1⅛"	½"	1⅛"	1⅛"
FF	⅜"	½"	⅜"	⅜"
W	⅜"	⅜"	⅜"	—
WW	⅜"	⅜"	⅜"	—
R	⅜"	⅜"	⅜"	—
H·HK	2"	—	—	—
K	2"	—	⅜"	—
RAILING AA·BB·CC	1⅛"	—	1⅛"	—
FF	⅜"	—	⅜"	—
W·WW·R	⅜"	—	⅜"	—

ELECTRICAL DETAILS

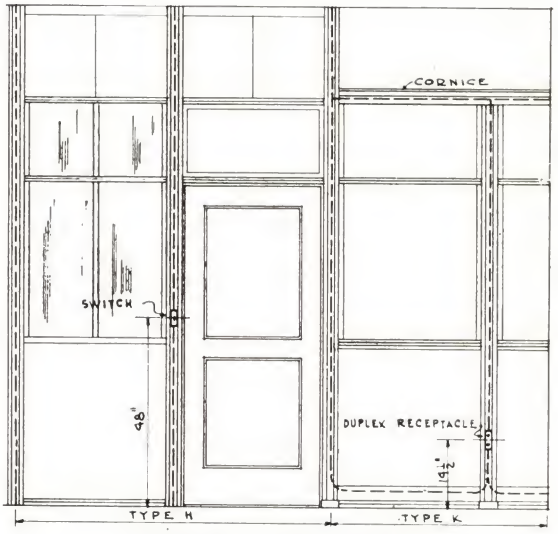
• wiring systems and symbols



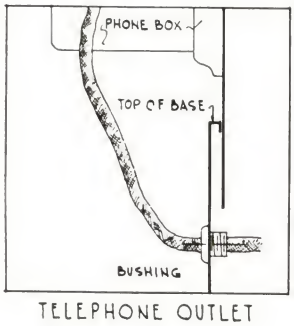
·TYPICAL· TYPE· R·W·WW·



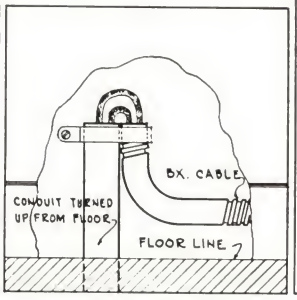
JUNCTION SPLICE BOX



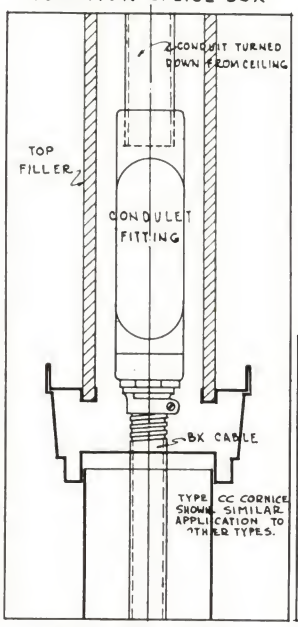
·TYPICAL · TYPE· H·K &HK·



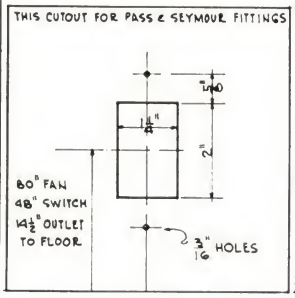
TELEPHONE OUTLET



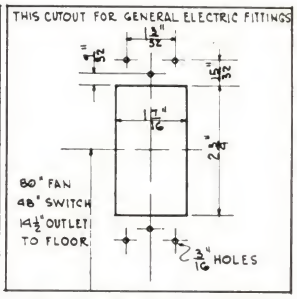
FLOOR FEED



CEILING FEED



P&S ELECTRICAL CUTOUT



G.E ELECTRICAL CUTOUT

STANDARD ELECTRICAL SYMBOLS	
SYMBOL	DESCRIPTION
S_1	SINGLE SWITCH
S_2	DOUBLE SWITCH
S_3	TRIPLE SWITCH
S_D	DOOR SWITCH
	DUPLEX RECEPTACLE
	FAN OUTLET
	PHONE OUTLET
	PUSH BUTTON
	THERMOSTAT
	BUZZER
	ELECTRIC DOOR OPENER
	ELECTRIC PANEL

WIRING METHODS: The following method is recommended: All wiring completely concealed in partition and run in flexible BX cable. All connections and splices enclosed in junction boxes having BX cable ends securely clamped to boxes. Outlet boxes for all switch and convenience outlets with provisions for securing ends of BX cables. Ceiling and floor feeds connected to partition system at junction boxes.

Do not use rigid conduit in partition as flexible BX cable together with partition members meets National Fire Underwriters Code for No. 14 gauge rigid conduit system.

Another method used is the running of all wiring concealed in partition in flexible BX cable without use of junction boxes for splices and connections, provided adequate taping is used.

Layin wiring is completely enclosed in types AA, BB, CC, FF and EE raceways. Enclosed raceways meet most code requirements without using BX cable. Small channel bridges can be supplied to carry raceways in base from one unit to the next.

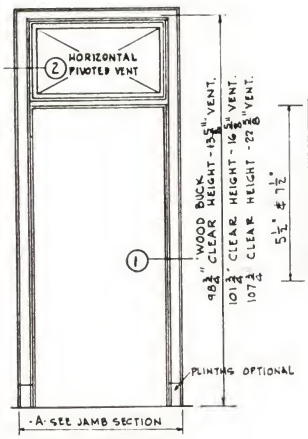
If open wiring is used the partition must be grounded to building conduit system.

STANDARD SYMBOLS: Adjoining table lists standard electrical indications as approved by architects and the American Society for Electrical Engineers. Whenever required on drawings these symbols should be used exclusively.

AIR CONDITIONING FACILITIES: New trends in offices often require air conditioning. Necessary suction liquid and drain lines are easily carried and concealed in raceways for electrical wiring. Line sizes that can be accommodated are listed in adjoining table on page No. 46.

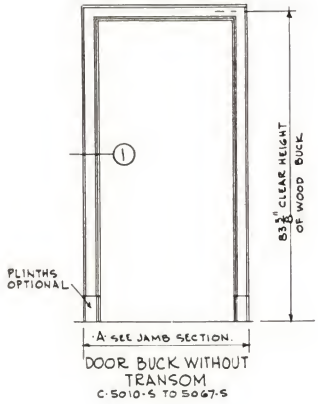
HOLLOW METAL TRIM

• door bucks, wall base and trim

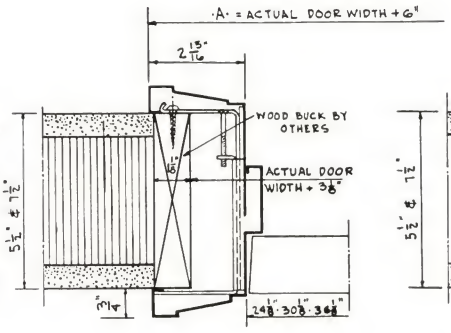


DOOR BUCK WITH TRANSOM
C-5300-S & 5301-S

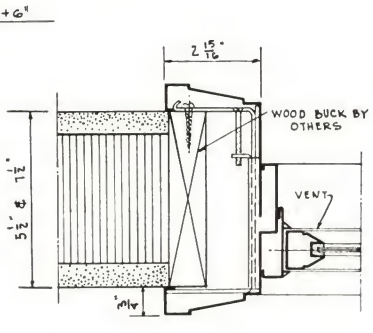
HORIZONTAL PIVOTED VENTS AVAILABLE WITH FRICTION DEVICE OR CONCEALED OPERATOR.



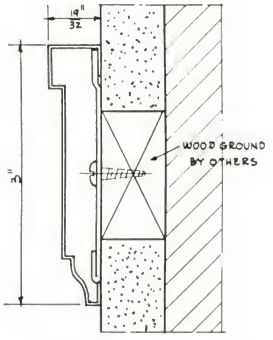
DOOR BUCK WITHOUT TRANSOM
C-5010-S TO 5067-S



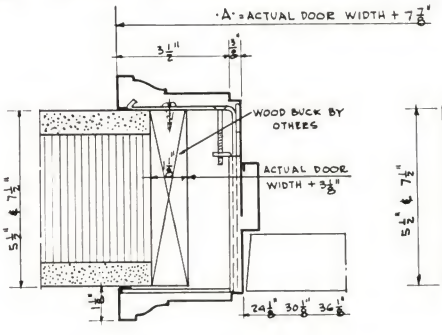
JAMB SECTION ①



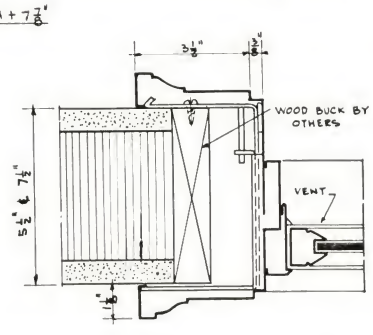
TRANSOM SECTION ②



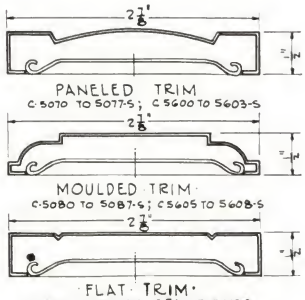
MOULDED CHAIR RAIL
SHOWING TYPICAL APPLICATION



JAMB SECTION ① (ALTERNATE)



TRANSOM SECTION ② (ALTERNATE)



CHAIR RAIL TRIM TYPES

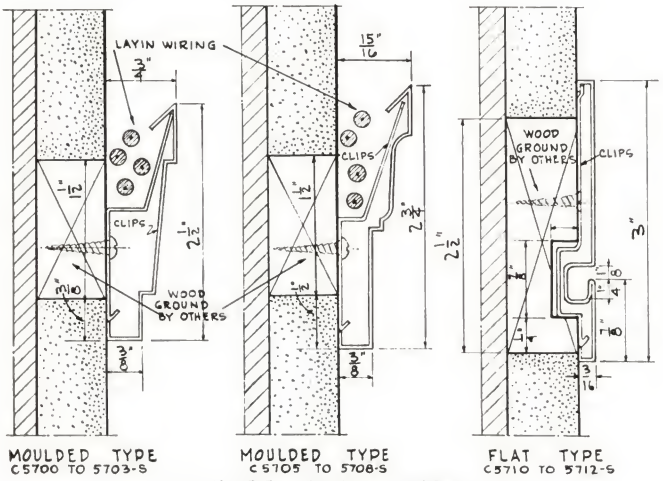
CHAIR RAIL LENGTH SIZES		
LENGTHS	CORNERS	R & L.H. COPES
30"	12 x 12	30"
60"	18 x 36	60"
102"	24 x 24	102"
	36 x 30	

·TELESCOPIC · MOULDED · TRIM ·
·DOOR · BUCKS ·

NOTE! GIVE HEIGHT & THICKNESS OF WALL BASE IF ANY.
THUMB TURNS ONLY, FURNISHED FOR CONCEALED OPERATOR.

PICTURE MOULD LENGTHS				
LENGTHS	30"	60"	102"	
CORNERS	12" x 12"	18" x 36"	24" x 24"	36" x 30"
R & L.H. COPES	30"	60"	102"	

BASE LENGTHS · CORNERS · COPES				
LENGTHS	30	60"	102"	
CORNERS	12 x 12"	18" x 36"	24" x 24"	36" x 30"
R & L.H. COPES	30"	60"	102"	

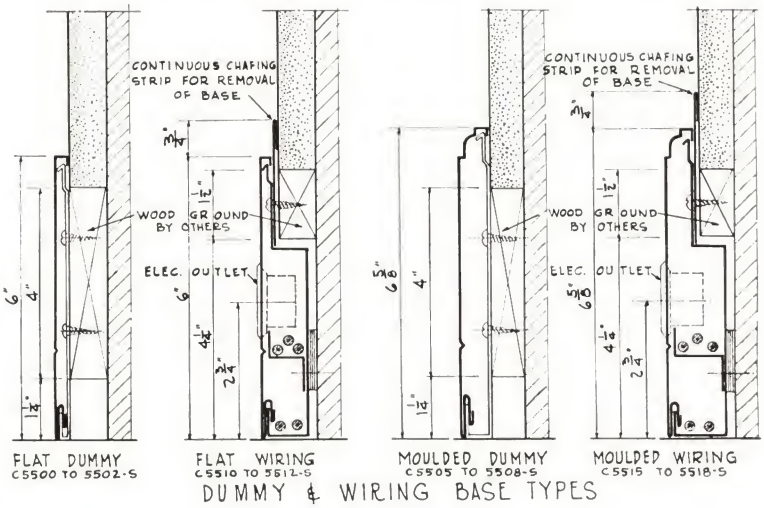


MOULDED TYPE C-5700 TO 5703-S

MOULDED TYPE C-5705 TO 5708-S

FLAT TYPE C-5710 TO 5712-S

PICTURE MOULD TYPES



FLAT DUMMY C-5500 TO 5502-S

FLAT WIRING C-5510 TO 5512-S

MOULDED DUMMY C-5505 TO 5508-S

MOULDED WIRING C-5515 TO 5518-S

DUMMY & WIRING BASE TYPES

SHIPPING CLASSIFICATION
SUFFIX S = IN STOCK CS = CUTDOWN STOCK NS = NO STOCK

PATENTED & PAT PENDING

SPECIFICATIONS

• safeguard of quality

SPECIFY HAUSERMAN BECAUSE—Leadership is the greatest assurance of value and acceptance. Specify Hauserman stock for a complete job, for speedy service, and for permanent satisfaction.

HAUSERMAN MASTERWALL SPECIFICATION

1. TYPE: Furnish and erect complete The E. F. Hauserman Company Standard Type . . . (*insert type*) . . . Movable Steel Masterwalls. (*See partition types. index page 55, illustrations and details pages 14 to 31. Features pages 10, 11.*)

Note: Method of handling "Or Equal" clause; While there is no substitute for Masterwall Design, Quality and Service it is occasionally necessary for statutory reasons to provide the possibility for other bidders. To this end the following clause may be added at the end of paragraph No. 1.

Partitions of other manufacturers which are proposed as generally meeting these specifications may be submitted for approval stating the exceptions from these specifications and amount of difference in price if any, effected by their use. *Note: Masterwall price levels are guaranteed on flat specifications within reasonable time limits.*

2. SHOP DRAWINGS: Shop drawings in duplicate showing partition layout, typical elevations, hardware schedule, finish and any special conditions shall be submitted for approval before fabrication.

3. INTERCHANGEABILITY: Door units shall be interchangeable with panel units of the same size. Units shall be so arranged and assembled that future extensions of either two-, three- or four-way may be jointed thereto in a neat symmetrical and substantial manner without removing the existing units, or using fillers. (*Omit this paragraph for type TE which is movable but panels are interchangeable only in complete run changes*).

4. STEEL: All exposed steel shall be cold rolled, furniture stock, properly annealed, process leveled with smooth, clean surfaces. Gauges specified are United States Standard

5. PANELS: Insert specification paragraph according to type as scheduled on pages 50 and 51. *For type AA in addition to panel insert specify — The single line joint where panels abutt shall not be over $\frac{1}{32}$" wide, and shall be flush with a tolerance of $\frac{1}{32}$". Surface of panels shall be commercially flat within the limits of commercial stretcher level steel. For types AA, BB, CC and FF in addition to panel insert specify — The inner surface of the sheets shall be coated with a mastic paint having a loose fibre content to deaden all metallic ring or rattle.*

Partitions without door openings shall reduce sound transmission at least thirty-eight decibels for frequencies averaging from 256 to 4096 and partitions with doors shall reduce transmission at least twenty-five decibels average over the same range. (Types AA, BB and CC only.)

6. RAILS:..... (*insert for type*) .....

7. VERTICALS OR POSTS:..... (*insert for type*) .....

8. POST CAPS:..... (*insert for type*) .....

9. PLINTHS:..... (*insert for type*) .....

10. BASE:..... (*insert for type*) .....

11. CORNICE OR PICTURE MOLD: (*insert for type*) .....

12. END FILLERS: Steel end fillers shall be used at the end of partition runs and shall be insulated similarly to partition panels. End fillers shall be neatly and securely fastened to the building wall. (*For type AA specify whether end fillers are to be type flush with partition surface at wall intersection, or type with flat mould trim.*) (*See details page 14 and 15*).

13. TOP FILLER: Top fillers for partitions that extend to ceiling shall be neatly scribed to ceilings, walls, beams, pipes, etc., and joints shall be reinforced, pointed and refinished smooth ready for painting. Top filler shall be finished to match ceiling. Top filler shall be double sheet mineral board ¼" thick, or steel. (*Omit if no top filler required. For steel top filler on types AA and BB, specify: Top filler for partitions that extend to the ceiling shall be double steel with flush line joints. Single line for type AA, double line for type BB. Top filler shall be removable both sides and held in place by snap-on clips concealed behind removable picture mould. Provide flat ceiling mould to receive steel top. Pack top solid with inorganic filler for sound insulation. Finish to be applied in plant to match approved color sample. See general note regarding top fillers, page 52*).

14. DOORS AND FRAMES: Doors shall be 1¾" thick, with not more than $\frac{3}{32}$" clearance at jambs and heads. Doors shall be standard, one or two panel, glass or steel panels, as shown or specified. Stiles and panels shall be sound deadened with packing.

Sinkages shall be provided in doors and frames for all mortise or countersunk interchangeable hardware. Steel reinforcement shall be inserted for attaching all hardware, and shall be of ample size to stiffen the sheet metal against the strain of the service required. Reinforcement shall be secured by electric welding. Reinforcements for butts shall be at least 9" long, No. 14 gauge steel channels with raised bosses tapered for screws. Double doors shall have bevelled meeting strikes.

Doors shall be glazed **without the use of exposed screws or loose glazing heads.**

Doors and frames shall be **floating type adjustable to variations in floor level.** (*Omit this line on types H, K & H K whose frames do not float. For types AA and BB add specifications as follows:*

Frames shall have rubber cushioned strikes to lessen sound transmission and assure more quiet operation of doors.

Provide snap-on door frame trim of design as shown on detail drawings. Trim shall be provided with raceways both sides for layin electric wiring. Type CC or FF can be furnished with steel or rubber strikes. Specify which).

15. HARDWARE: Hardware design and construction shall be as regularly furnished with the metal partitions. Hardware shall be interchangeable, with operation and finish as called for in hardware schedule. Doors to be hung on two ball bearing butts 5" x 4" in size. (*U. S. 10 and U. S. 18 finish stocked, hardware illustrated pages 42, 43, 44. Specify whether friction device or concealed operator on vents*).

16. ELECTRICAL PROVISIONS: Furnish and install electrical switches and plates 4'-0" above floor. Furnish and install duplex plug receptacles in the base, or post caps near base. Electrical fittings and receptacles shall be in number and location as shown on plans. All conduit and electric wiring by others. (*Electrical accessories and details shown on pages 45, 46, 47*).

17. FINISH: All surfaces shall be properly degreased clean and dry before paint or finish is applied. All coats shall be evenly applied, and all parts must be of uniform shade. Finish to be Masterwall color No... or as selected. (*See finish information page 12, specify black mop strip when required*).

Each coat of lacquer shall be put on in two applications, the second being worked at right angles to the first. Each coat of paint or enamel shall be baked to the proper degree of hardness before sanding.

Industrial or prime finish shall consist of one dip or spray coat of rust resisting paint baked on.

Flat color full finish shall consist of one dip or spray coat of rust resisting paint, baked on and sanded smooth. In addition two coats of pyroxylin lacquer shall be applied on all exposed surfaces, the first coat to be sanded smooth and the final coat to be an egg shell gloss finish.

See note on page 12 regarding special finishes and textures. Stipple finishes are recommended for flush walls such as types AA and BB. Call the Masterwall Engineer.

Grained finish shall consist of one dip or spray coat of rust resisting paint, baked on and sanded smooth, then grained to match approved finish sample. Two coats of clear pyroxylin lacquer shall then be applied, the first coat to be sanded smooth, and the final coat to be an egg shell gloss finish.

Finish coat shall pass a bend test of bending over a ½" diameter rod without showing cracks or imperfections in the finished surface.

18. GLASS AND GLAZING: Glass for metal partition work in this section shall be furnished by this contractor, of design, quality and thickness as specified or called for on drawings.

Glass shall be bedded in putty and back puttied. Putty shall be colored to match the finish of adjacent metal work, and shall not show on exposed surfaces. Glazing stops shall be **secure and without any exposed screw heads.** (*Omit if no glass required*).

19. ERECTION: Partitions shall be erected in a rigid and substantial manner, straight and plumb, with horizontal lines level. Units shall be interlocked and aligned at all panel and door unit joints. Securely anchor units to the floor with concealed fastenings adjustable to variations in floor level. Hardware shall be carefully adjusted and left in perfect working condition. Glass and metal surfaces shall be cleaned and left free from scratches and abrasions. Provide reinforcements to ceiling or bracing on runs exceeding 20 feet in length unsupported by cross runs.

SPECIFICATIONS

• panel, rail, vertical, inserts

NOTE: Paragraphs No. 5 to 11 inclusive are to be inserted in paragraphs No. 5 to 11 inclusive of the standard specification form on page 49. The paragraphs are to be read and used horizontally

SCHEDULE OF INSERTS FOR SPECIFICATION FORM—PAGE 49

TYPE	5. PANELS	6. RAILS	7. VERTICALS OR POSTS
AA 3″ Thick Flush Single Line Joint See details Pages 8, 22, 23	All steel panels shall be flush with single line joint. Glass panel units shall be flush with double line joint. Panel plates shall be No. 20 gauge steel reinforced with steel members welded to panel plates approximately on 12″ centers with spotwelds about 3″ apart. Panels shall be packed solid with inorganic filler to form a firm backing and insulation. Panels shall be plant assembled in units by fastening on to verticals and designed to readily permit removal of panel plate on either side of partition.	Chair, transom and top rails shall be No. 18 gauge rolled steel shapes. Bottom member of transom and top rails of glass panels shall telescope into upper member, permitting insertion of glass without the use of removable stops. The soffit of telescopic glazing stops shall be perforated to receive picture hooks.	Verticals shall be No. 16 gauge formed steel shape perforated and notched for panel connections and electric wiring. Provide concealed adjustable posts anchored to floor and ceiling at each panel joint.
BB 3″ Thick, Flush Double Line Joint See details Pages 8, 24, 25	Panels shall be flush with double line joint. Panel plates shall be No. 20 gauge steel reinforced with steel members welded to panel plates approximately on 12″ centers with spotwelds about 3″ apart. Panels shall be packed solid with inorganic filler to form a firm backing and insulation. Panels shall be plant assembled in units by fastening on to verticals and designed to readily permit removal of units. Units to have universal post arrangement.	Chair, transom and top rails shall be No. 18 gauge rolled steel shapes. Bottom member of transom and top rails of glass panels shall telescope into upper member, permitting insertion of glass without the use of removable stops. The soffit of telescopic glazing stops shall be perforated to receive picture hooks.	Verticals shall be No. 14 gauge formed steel shape perforated and notched for panel connections and electric wiring. Provide concealed adjustable posts anchored to floor and ceiling at each panel unit.
CC 3″ Thick, Semi Flush See details Pages 10, 26, 27 and 28	Panels shall be flush type with projections at posts not to exceed 1/8″, and panel thickness not to be less than 2 3/4″. Panel plates shall be No. 20 gauge steel, reinforced with steel members welded to panel plates approximately on 12″ centers with spotwelds about 3″ apart. Panels shall be packed solid with inorganic filler to form a firm backing and insulation. Panels shall be assembled by means of tie rods, and designed to permit cut down in the field readily.	Chair, transom and top rails shall be No. 18 gauge rolled steel shapes. Bottom member of transom and top rails of glass panels shall telescope into upper member, permitting insertion of glass without the use of removable stops. The soffit of telescopic glazing stops shall be perforated to receive picture hooks. The face of rails shall be flush with face of panels.	Verticals shall be No. 16 gauge rolled steel shape perforated and notched for clip connections and electric wiring.
FF 2″ Thick, Semi Flush See details Pages 11, 34 and 38	Panels shall be flush type with projections at posts not to exceed 1/8″, and panel thickness not to be less than 1 3/4″. Panel plates shall be No. 20 gauge steel reinforced with steel members welded to panel plates approximately on 12″ centers with spotwelds about 3″ apart. Panels shall be packed solid with inorganic filler to form a firm backing and insulation. Panels shall be assembled by means of tie rods, and designed to permit cut down in the field readily.	Chair, transom and top rails shall be No. 18 gauge rolled steel shapes. Bottom member of transom and top rails of glass panels shall telescope into upper member, permitting insertion of glass, without the use of removable stops. The soffit of telescopic glazing stops shall be perforated to receive picture hooks. The face of rails shall be flush with face of panels.	Verticals shall be No. 16 gauge rolled steel shape perforated and notched for clip connections and electric wiring.
W 3/8″ Panel, 3″ Post See details Pages 12, 37	Partitions shall be paneled type with packed steel panels 3/8″ thick, or glass panels. Panel plates shall be No. 24 gauge steel packed with 1/16″ mineral board, excepting panels from chair rail to transom rail to be No. 20 gauge with corrugated fibre board packing. Panel assembly to be by means of tie rods, and designed to permit cut down in field readily.	Transom and top rails shall be No. 16 gauge rolled steel shapes. Chair rail shall be No. 18 gauge rolled steel shape. Bottom members of transom and top rails glass panels shall telescope into upper member, permitting insertion of glass without the use of removable stops. The soffit of telescopic glazing stops shall be perforated to receive picture hooks.	Verticals shall be No. 16 gauge rolled steel shape perforated and notched for clip connections and electric wiring.
R 3/8″ Panel, 3″ Post See details Pages 13, 38, 39	Partitions shall be paneled type with packed steel panels 3/8″ thick, or glass panels. Panel plates shall be No. 24 gauge steel packed with 1/16″ mineral board, excepting panels from chair rail to transom rail to be No. 20 gauge with corrugated fibre board packing. Panel assembly to be by means of tie rods, and designed to permit cut down in field readily.	Transom and top rails shall be No. 16 gauge rolled steel shapes. Chair rail shall be No. 20 gauge formed steel shape. Bottom member of transom and top rails of glass panels shall telescope into upper member, permitting insertion of glass without the use of removable stops. The soffit of telescopic glazing stops shall be perforated to receive picture hooks.	Verticals shall be No. 16 gauge rolled steel shape perforated and notched for clip connections and electric wiring.
HK or H Single Steel, 3 3/4″ Post See details Pages 13, 40, 41	Partitions shall be paneled type with No. 18 gauge steel panels, or glass panels. Units shall be assembled both vertically and horizontally with concealed bolted connections at the posts	Horizontal rails shall be No. 20 gauge formed steel shapes. Vertical muntins to be No. 22 gauge formed steel.	Posts shall be No. 20 gauge formed steel 3 3/4″ square and extending full height to ceiling. (*Note, cornice high when cornice is used*).
K Single Steel, 3 3/4″ Post, Base See details Pages 13, 40, 41	Partitions shall be paneled type with No. 18 gauge steel panels, or glass panels. Units shall be assembled both vertically and horizontally with concealed bolted connections at the posts.	Chair rail and horizontal rails shall be No. 20 gauge formed steel shapes. Vertical muntins to be No. 22 gauge formed steel.	Posts shall be No. 20 gauge formed steel 3 3/4″ square and extending to bottom of cornice. Perforations to be provided at bottom of posts for electric wiring through base.
TE 2″ Thick, Semi Flush See details Page 41	Panels shall be flush type with projections at posts not to exceed 1/8″ and panel thickness not to be less than 1 3/4″. Panel plates shall be No. 20 gauge packed solid with inorganic filler.	None.	Posts shall be No 20 gauge formed flat shape with provisions for anchoring to floor channel and cornice.
EE ASBESTOS ACOUSTIC HOSPITAL CUBICALS FIREPROOF WALLS	Specifications and details furnished on request		

SPECIFICATIONS

in the schedule opposite the type of partition being specified. The paragraph inserts should not be interchanged between partition types.

• post caps, base, cornice, inserts

SCHEDULE OF INSERTS FOR SPECIFICATION FORM—PAGE 49

TYPE	8. POST CAPS	9. PLINTHS	10. BASE	11. CORNICE OR PICTURE MOULD
AA 3″ Thick Flush Single Line Joint See details Pages 8, 22, 23	(No post caps on all steel panels. For steel and glass panels use type BB post caps below).	None.	Base shall be No. 18 gauge 6″ high continuous with $\frac{5}{16}$″ projection. Base shall be removable for lay-in wiring with both sides independently adjustable for varying floor levels. Wiring raceways shall be provided for high and low tension wiring.	Picture mould shall be No. 18 gauge rolled shape 3″ high with $\frac{3}{16}$″ projection. Picture mould shall be removable each side for layin concealed electric wiring. Provide continuous picture hook slot in moulding. (If cornice is desired, specify the same as for type CC.)
BB 3″ Thick, Flush Double Line Joint See details Pages 8, 24, 25	Post caps shall be No. 18 gauge rolled shape, to snap on flush with panels. Caps shall be removable for disassembly, wiring, and the joining of panels at 2-, 3- or 4-way connections.	None.	Base shall be No. 18 gauge 6″ high continuous with $\frac{5}{16}$″ projection. Base shall be removable for lay-in wiring with both sides independently adjustable for varying floor levels. Wiring raceways shall be provided for high and low tension wiring.	Picture mould shall be No. 18 gauge rolled shape 3″ high with $\frac{3}{16}$″ projection. Picture mould shall be removable each side for layin concealed electric wiring. Provide continuous picture hook slot in moulding. (If cornice is desired, specify the same as for type CC.)
CC 3″ Thick, Semi Flush See details Pages 10, 26, 27 and 28	Post caps shall be No. 18 gauge rolled shape, to snap on flush with panel verticals. Caps shall be so designed as to form with panel verticals a pilaster relieved by vertical V-shaped lines. Caps shall be removable for disassembly and wiring.	Plinths shall be No. 14 gauge, flat, hook on type, vertically adjustable to floor at all posts.	Base shall be No. 18 gauge 6″ high with ¼″ projection. Base shall be removable for lay-in wiring with both sides independently adjustable for varying floor levels. Wiring raceways shall be provided for high and low tension wiring.	Cornice shall be No. 18 gauge rolled shape 2½″ high with internal expanding pull-up splice. Cornice shall provide for layin concealed wiring between top flanges of cornice and top filler after top filler is installed. This in addition to any concealed wiring within the cornice itself.
FF 2″ Thick, Semi Flush See details Pages 11, 34 and 35	Post caps shall be No. 18 gauge rolled shape, to snap on flush with panel verticals. Caps shall be so designed as to form with panel verticals a pilaster relieved by vertical V-shaped lines. Caps shall be removable for disassembly and wiring.	Plinths shall be No. 14 gauge, flat, hook on type, vertically adjustable to floor at all posts.	Base shall be No. 18 gauge 6″ high with ¼″ projection. Base shall be removable for lay-in wiring with both sides independently adjustable for varying floor levels. Wiring raceways shall be provided for high and low tension wiring.	Cornice shall be No. 18 gauge rolled shape 2½″ high with internal expanding pull-up splice. Cornice shall provide for layin concealed wiring between top flanges of cornice and top filler after top filler is installed. This in addition to any concealed wiring within the cornice itself.
W ⅜″ Panel, 3″ Post See details Pages 12, 37	Post caps shall be No. 18 gauge rolled shape, moulded design, to snap on panel verticals. Caps shall be removable for disassembly and wiring.	Plinths shall be No. 16 gauge, snap-on type, vertically adjustable to floor at all posts.	Base shall be No. 20 gauge 7⅝″ high with moulded top. Base shall be removable for layin wiring with both sides independently adjustable for varying floor levels. Wiring raceways shall be provided for high and low tension wiring.	Cornice shall be No. 18 gauge rolled shape 2¾″ high with internal expanding pull-up splice. Cornice shall be designed so as to allow concealed wiring to be run within.
R ⅜″ Panel, 3″ Post See details Pages 13, 38, 39	Post caps shall be No. 20 gauge rolled shape moulded design, to snap on panel verticals. Caps shall be removable for disassembly and wiring.	Plinths shall be No. 18 gauge, snap-on type, vertically adjustable to floor at all posts.	Base shall be No. 20 gauge 6⅝″ high with moulded top, and 2″ high floor mould, adjustable for varying floor levels. Base design shall allow for concealed fish wiring within.	Cornice shall be No. 18 gauge rolled shape 2¾″ high with internal expanding pull-up splice. Cornice shall be designed so as to allow concealed wiring to be run within.
HK or H Single Steel, 3¾″ Post See details Pages 13, 40, 41	Post caps shall be No. 20 gauge formed steel, to snap on posts. Caps to be removable for disassembly and wiring.	None.	None.	If cornice required, specify same as for type K.
K Single Steel, 3¾″ Post, Base See details Pages 13, 40, 41	Post caps shall be No. 20 gauge formed steel, to snap on posts. Caps to be removable for disassembly and wiring.	Plinths shall be No. 18 gauge, slip-on type, vertically adjustable to floor at all posts.	Base shall be No. 20 gauge 7″ high with moulded floor mould 2″ high, adjustable for varying floor levels. Base design shall allow for concealed fish wiring within.	Cornice shall be No. 18 gauge moulded shape 3⅝″ high with internal expanding pull-up splice. Cornice to be designed so as to allow for concealed wiring to be run within.
TE 2″ Thick, Semi Flush See details Page 41	None.	None.	Base shall be No. 18 gauge formed steel channel designed to receive panels and posts. (*Note: For uneven floors specify base to be caulked at floor line particularly at urinals and showers*).	Cornice shall be No. 18 gauge rolled shape 2¾″ high with internal expanding pull-up splice.
EE ASBESTOS ACOUSTIC HOSPITAL CUBICLES FIREPROOF WALLS	Specifications and details furnished on request.			

SPECIFICATIONS

• railings, counters, hollow metal

SPECIFICATION PARAGRAPHS on page 49 covering general conditions, performance, erection finish, etc., are to be used with the following various specifications as they apply.

CEILINGS: Specifications should call for, and drawings should show, type of ceiling desired. See various types illustrated on page 39.

COUNTER: (*Open Back*). Counter front and ends shall be constructed of steel panel units so as to readily permit rearrangement of counter if required. Panel units shall be E. F. Hauserman Company type .....

Counter top to be No. 14 gauge steel covered with 1/8" thick linoleum of color selected. Linoleum top to be securely cemented in place with edges bound by 3/16" high bronze binding.

Open end of counter to have a wide apron and to be supported by 2" square posts with 2" high adjustable steel floor shoes.

Furnish (*quantity*) No. 16 gauge steel shelves under counter.

COUNTER OR DISPLAY CASE: (*Closed Back*). Furnish and install E. F. Hauserman Company counter type .....

Counter front and ends shall be constructed of steel panel units so as to readily permit rearrangement of counter if required.

Counter top to be No. 14 gauge steel covered with 1/8" thick linoleum of color selected. Linoleum top to be securely cemented in place with edges bound by 3/16" thick bronze binding.

Back of counter to be enclosed with (*specify whether hinged or sliding steel or sliding glass*) doors with flat key lock. (*Note: Also specify whether front of counter is to have steel or glass panel. Specify fixed or adjustable glass or steel shelves giving width and quantity, also type and number of drawers*).

DUSTPROOFING: For dustproof jobs, partition types are recommended in the following sequence of dustproofness; AA; BB; CC, FF or WW; W or R. Intersection of partition extremities with building floor, walls and ceiling should be caulked. Clearance under doors should be sealed with threshold and felt strip. It is important to have felted door frames, which are available only in types AA, BB, CC and FF. Types H, K or HK are not recommended for dustproof jobs and if used caulking should also be applied between panel horizontals and at intersection of posts.

GLAZED RAILING: Furnish and install E. F. Hauserman Company type ..... glazed railing. (*See details page 32*). Panel and gate units to be movable and interchangeable.

Securely anchor railing to floor by means of pipe braces and floor castings.

Panels to be steel to 42" high, glazed above with 24" high glass 1/4" thick. Glass to be held in place with well proportioned steel posts. Posts to be topped with ornamental finals, U. S. 10 or U. S. 26-D finish. Top, horizontal of panels at glass line to be steel painted.

When low gates are called for they shall have straight top, with stainless steel crown.

High gates to be 60" high, 6" above floor, glazed with curved top glass.

Double acting gates to have die cast self-centering gate hinges.

Single acting glazed gates to have checking hinge, rubber gate stop, full height of bottom steel panel and push and pull plates or latch operated by lever handles both sides.
(*Specify cylinder lock when required*).

LIGHTPROOFING: Recommendations for lightproof jobs are the same as for dustproofing. Practical lightproof entrances are made by the use of two doors with a small vestibule. Louvers or grilles are lightproofed by covering with a metal hood with black interior.

PICTURE MOULD: Furnish and install E. F. Hauserman Company type ..... picture mould. (*See page 48*)

Continuous wood ground as detailed to be furnished and installed by others.

Picture mould to be No. 18 gauge with accurate profile and square ends. Clips for holding picture mould to be No. 14 gauge, located 18" on center.

RAILING: Furnish and install E. F. Hauserman Company, type ..... movable steel railing. (*See details page 32*). Panel and gate units to be interchangeable.

Securely anchor railing to floor by means of pipe braces and floor castings.

Double acting gates to have die cast self-centering gate hinges.

Single acting gates to have checking hinge and rubber gate stop full height of gate.

Gates shall have straight top with stainless steel crown.

Hand rail and post capitals to be stainless steel tampico brush finish.

SLIDE UP SASH: Sash frames shall be constructed of steel. Neat appearing counterweight boxes and sash guides to be fabricated of No. 18 gauge steel. Provide removable cover for access to counterweights. Counterweight pulley to be hardened steel with ball bearings. Chain shall be heavy 5 ply steel chain. Sash to be locked in closed position by dead bolts.

SOUND PROOFING: Partition shall be E. F. Hauserman Company type ..... soundproof partition.

Steel panel units shall be insulated full thickness. Glass panels to be double glazed. Glass to be glazed so as to be easily removed for cleaning. All four edges of glass to be well sealed to prevent sound leakage. (*1/4" thick glass is recommended*).

Seal the point of contact of partition base and floor with mastic seal. Base at floor stamping connections, post caps and end fillers to be well packed with inorganic filler.

Ventilation to be provided by means of sound absorbing duct installed at top filler. (*Transoms not recommended due to sound leakage*).

Door frames to be provided with felted frames to insure quiet operation of door and eliminate sound transmission. Provide felt wiper and bronze threshold to close opening at bottom of door. (*Source of large leakage*).

Top filler to be packed with inorganic filler for sound insulation.

TOP FILLERS: Specifications should call for, and drawings should show, type of top filler desired. Partition types AA, and BB with picture mould regularly furnished with double steel insulated top filler. Steel top filler is the best answer for flush walls providing greater durability, flexibility and salvability.

Double mineral board top fillers with cornice or picture mould also available for types AA and BB.

Double mineral board regularly used with all other partition types having cornice. Double steel tops also available. Single steel top filler used with types K, H, HK when used with posts to ceiling without cornice. (*See various types illustrated on page 39*).

TELESCOPIC DOOR BUCK: Furnish and install the E. F. Hauserman Company telescopic type door bucks with No. 18 gauge removable trim. Trim to be securely held in place with No. 12 gauge clips. Wood buck by others must be 1 1/8" thick stock installed plumb and accurately. Inside clearance of wood buck to be 3 1/8" wider than actual door width, with 83 3/8" clear height above finished floor.

For bucks with vents wood bucks should provide 98 3/4" clear height for 13 5/8" vent and 101 3/4" clear height for 16 5/8" vent, and 107 3/4" clear height for 22 5/8" vent.

Overall width and length of wood buck must not exceed overall width and height of metal trim. (*See page 48*)

(*Note: Specify door bucks whether with or without vents and concealed operator or friction device.*)

WALL BASE: (*Non-wiring type*). Furnish and install E. F. Hauserman Company non-wiring type . . . wall base. (*See page 58*)

Continuous wood ground 3/4" x 4" to be furnished and installed by others with top of ground located 5 1/4" above finished floor line.

Wall base to be securely held in place by No. 14 gauge steel clips located 18" on center.

Outer base to be No. 18 gauge with accurate profile and square ends.

WIRING WALL BASE: Furnish and install E. F. Hauserman Company type . . . wiring wall base. (*See page 48*)

Continuous wood ground 3/4" x 1 1/2" to be furnished and installed by others with top of ground located 5 3/4" above finished floor line.

Wall base to be removable for access to electric wiring. Provisions to be made for high and low tension wiring, with continuous 18 gauge compartment for high and low tension wiring.

Outer base to be No. 18 gauge with accurate profile and square ends. Provide continuous metal chafing strip at plaster line for easy removal of base and protection of plaster.

WINDOW EMBRASURES: Furnish and install E. F. Hauserman Company type ..... window embrasures as called for on plans.

Radiators to be enclosed with removable panel front full width for access to radiators.

Radiator enclosure to have neat perforated grille openings for air circulation. Access to radiator valve to be by means of concealed access door in removable front. Radiator stool to be insulated and have baffle to reflect heat into room.

At head of window embrasure provide pocket to receive drapes and Venetian blinds. (*Note: Specify perforation location, whether in base, stool, or top and bottom of removable front grille. See details page 34*).

HAUSERMAN PRACTICE

• the result of experience

THE POLICY OF THE HAUSERMAN COMPANY is to take full responsibility for the delivery of a complete job. This means analysis of the prospective customer's uses, the application of Masterwalls to these uses, their manufacture, erection and glazing, their finishes and furnishings such as hardware and other accessories. The co-ordination of all of these items with other trades or activities, are all included under our slogan "Organized for Service."

COMPLETE INFORMATION is all important, the faster the job the more important. Such items as color, hardware, glass, approved drawings, field dimensions, are all vital to service. The best facilities must have genuine co-operation in these matters from the customer if speed and satisfaction are to be attained. Much time can be saved in erecting partitions by making layouts as correctly as possible to field conditions. This is done by taking field measurements of old or rough walls, floors and intersecting mechanical equipment. End fillers must be wide enough for end posts to completely clear all pipes, radiators and window ventilators. Factory trained engineers clean up these items promptly in the field.

Speed demands stock. Stock shipments demand clean orders and no changes while in the shop. A buyer is safe to go "full steam ahead" as Masterwalls have the built-in facilities for the inevitable last minute changes which are usually handled in the field.

ERECTION: Many years of experience have taught us that in the main our men do the best, quickest and most practical erection job. Floor levels are important. They are usually out at least ½" and frequently 1" to 1½". Some old buildings are out of level as much as 2" or more. Facilities for meeting these conditions are present in all Masterwalls by the use of floor shims, floating door frames, bases and plinths. High or low spots can be taken care of without cutting the partitions and thereby interferring with their re-use. As a general rule Masterwalls should be erected on top of finished floor or floor covering. This reduces patching of floor or floor covering when partitions are moved

Wherever possible, walls and ceilings should be painted before partitions are installed. This makes satisfactory retouching possible when partitions are moved as paint line at intersection of wall and partition is almost impossible to remove when walls are painted after erection of partition. This will also eliminate spattering of partitions with paint and plaster touchup when walls are painted. Masterwalls are only one step ahead of furniture and carpets and should be handled as such. Remember the original shop finish is the finest finish and should never be touched with anything but the best soap and water to keep it clean. It will remain fresh and bright a lifetime.

NON STOCK HARDWARE: No single item causes as much trouble and confusion as non stock hardware. This is notorious. We strongly urge against its use. Hauserman hardware is designed so that bitt key, cylinder and communicating locks are interchangeable in the same mortise. This hardware is the product of one of the leading hardware manufacturers. Built to our specifications to meet the difficiencies that 20 years of extensive hardware use have taught us. A user will be free from many irritations due to inability to interchange locks in doors without changing entire door, as different mortises are required for different locks. All Hauserman locks are interchangeable in same mortise which is standard for all doors. Masterkeyed cylinders of all standard manufacturers fit Hauserman locks.

This catalogue shows our complete stock line. The use of non stock hardware results in inevitable delay and usually added cost must be recognized. Masterwall complete stocks eliminate three to twelve weeks' time, the time usually required for actual hardware shipments, not promises. Hardware is best installed in the doors in the shop.

GLASS: Where vision is desired use clear glass, either ¼" polished plate or D. S. A. window glass (about ⅛" thick). Polished plate glass provides perfect vision, while D. S. A. has more or less distortion and is used where a saving outweighs the irritation incident to distorted vision. New processes have reduced this distortion but it is still present in varying degrees. Where borrowed light only is desired, use obscure glass either ⅛", $\frac{3}{16}$" or ¼" thick available in various patterns. Consult the Masterwall engineer for various samples and prices. Glass ⅛" thick (clear or obscure) should never be used in one-panel doors, glazed railing, or when glass is chipped or sand-blasted, glass ¼" thick is recommended for these purposes. Clear glass actually should not be used above the transom. Clear glass in transoms admits no more light than obscure glass. Also obscure glass requires less frequent cleaning. Obscure glass diffuses light from ceiling fixtures and hides ceiling irregularities.

PUTTY: Glass is set in Hauserman metal partition putty, bedded and back-puttied. The putty is tinted to match the partition finish and will hold the glass securely against rattles without causing compression cracks. Ordinary wood sash putty should never be used as it will sag when fresh and harden and chip as it ages.

EXPERIENCE GETS THE RIGHT ANSWERS and has produced "Organized for Service." This means smart designs, fine manufacturing facilities, factory trained engineers and erectors constantly in the company's employ.

FIREPROOF MASTERWALLS

• prefabricated, movable fire walls



Exterior of fire test chamber with pyrometers in place before fire.



Exterior disassembled panel after fire, showing panel and packing unaffected.



Interior of the fire chamber before igniting of fire, showing fuel in place.

THESE FIREPROOF insulated movable steel Masterwalls comply with the American Society for Testing Materials one hour fire test requirements. Standard Specifications for Fire Test of Building Structures and Materials (C-19-33) require exposure, in a confined space, to fire having a standard temperature rise reaching 1700° F. in one hour. The exterior surface temperature must not rise 250° F. over the air temperature. (*Masterwalls passed this test with only a 70° F. temperature rise.*) After one hour, inside panels are subjected to a fire hose using 30 pounds water pressure from a 1⅛" nozzle. The panel joint must remain vertically straight and tight without passage of flame and water.

THIS FIREPROOF WALL is available in 3" and 4" thickness both of which have passed the one hour fire test. Outward appearance is identical with type "AA" wall permitting use of fire wall with straight run of partition in the same room. All type "AA" features apply to these fire walls in addition to special treated insulated joints at panels, ends, top fillers, and ceiling connections. (Details on request).

Exterior after test showing surface unaffected by fire, finish is intact.



Unit removed after fire, showing panel edges and post free from any warping.



Interior surface after fire still intact, free from any failure. Wall remains rigid.



INDEX

• classification of partitions

INDEX OF PARTITION TYPES

TYPE PANELS	PANEL THICKNESS	CHARACTERISTICS	POST	USE	PAGE
HK, H, K STEEL, GLASS, WIRE MESH PANELS (s)	Single steel.	Horizontal and Vertical panel assembly with individual universal post, steel top.	3¾" square paneled.	Industrial	30, 31
R GLASS & STEEL Interchangeable panels (s)	⅜" packed steel.	Moulded type, fish wire base, universal post, mineral board or steel top.	3⅜" wide x 3" deep, moulded design.	General purposes Offices Industrial	28, 29
W GLASS & STEEL PANELS Interchangeable or SOLID packed (s)	⅜" packed steel.	Moulded type, layin wire base, universal post, mineral board or steel top.	3⅜" wide x 3" deep, moulded design.	Offices Wainscoting	27
WW GLASS & STEEL PANELS Interchangeable or SOLID packed (s)	1½" solid packed steel with low density wood fiber board.	Moulded type, layin wire base, universal post, mineral board or steel top.	3⅜" wide x 3" deep, moulded design.	Offices Wainscoting	27
FF GLASS & STEEL PANELS Interchangeable or SOLID packed (s)	1¾" packed solid with inorganic filler, reinforcings 12" apart electrically welded 3" centers. De luxe construction.	Semi-flush, layin wire base, universal post, steel top, alternate, mineral board.	2⅞" wide x 2" deep, flat ⅛" projection.	Finest Glass and Steel Partitions, Offices, Schools, Laboratories	24, 25
HOSPITAL CUBICALS, Glass and steel panels interchangeable, open or closed base and ends.	1¾" packed solid with inorganic filler, reinforcings 12" apart electrically welded 3" centers. Deluxe construction.	Semi-flush, wiring facilities, universal post, with or without steel or mineral board top.	2⅞" wide x 2" deep, flat ⅛" projection.	Hospital bed cubicals, Institutional partitions, Clinics, Beauty Parlors	26
CC SOLID PACKED OR STEEL & GLASS Interchangeable panels, single or double glazing (s)	2¾" packed solid with inorganic filler, reinforcings 12" apart electrically welded 3" centers. De luxe construction.	Semi-flush, soundproof, layin wire base, universal post, steel top, alternate, mineral board.	3¾" wide x 3" deep, flat ⅛" projection.	Offices Wainscoting Corridors Schools Solid Partitions	18, 19, 20
BB SOLID PACKED OR STEEL & GLASS. Double Line Joint. Interchangeable panels, double glazing optional (s)	3" packed solid with inorganic filler, reinforcings 12" apart electrically welded 3" centers. De luxe construction	Absolutely flush, soundproof, layin wire base and door frame, universal post, steel top, alternate, cornice or picture mould with mineral board top, shop assembly.	Flush cap, double line joint.	Offices, Schools Wainscoting Corridors Department Stores	16, 17
AA SOLID PACKED OR STEEL & GLASS. Single line joint. Interchangeable panels, double glazing optional (s)	3" packed solid with inorganic filler, reinforcings 12" apart electrically welded 3" centers. De luxe construction.	Absolutely flush, soundproof, layin wire base and door frame, steel top, alternate, cornice or picture mould with mineral board top, shop assembly.	Concealed post, flush single line joint.	All former uses, plaster and tile walls, Offices, Lobbies Corridors	14, 15
EE ASBESTOS OR ASBESTOS & GLASS Single line joint. Interchangeable panels, double glazing optional.	3" asbestos with or without sound insulation packing full thickness. De luxe construction.	Flush with 1/32" beveled V joints, layin wire base and door trim, mineral board or asbestos top, shop assembly.	Concealed post, flush single line joint.	Decorative Offices, Wainscoting, Lobbies, Corridors, Executive Suites.	22, 23
FIRE PROOF SOLID PACKED MASTERWALLS Fush steel, straight single line joint.	3" or 4" packed solid with rockwool, reinforcings 12" apart electrically welded 3" centers. De luxe construction.	Absolutely flush, fire proof, soundproof, layin wire base, packed double steel top, shop assembly.	Concealed post, flush single line joint.	For all uses where non-load-bearing fire wall is required.	54
SOUNDPROOF & SOUND ABSORBING ACOUSTICS (ns)	See various details of construction for answers of sound control in walls, ceiling, ventilation, door and conveyor openings, etc.			Quiet rooms, offices Test rooms	8, 9 20, 39

Shipping Classification: (s) indicates in stock (cs) indicates cut down stock; (ns) indicates no stock.

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BRANCH OFFICES

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Cleveland, Ohio	6804 Grant Ave.	Diamond 1400
Detroit, Mich.	General Motors Bldg.	Madison 6040
Kansas City, Mo.	402 Midland Bldg.	Victor 6700
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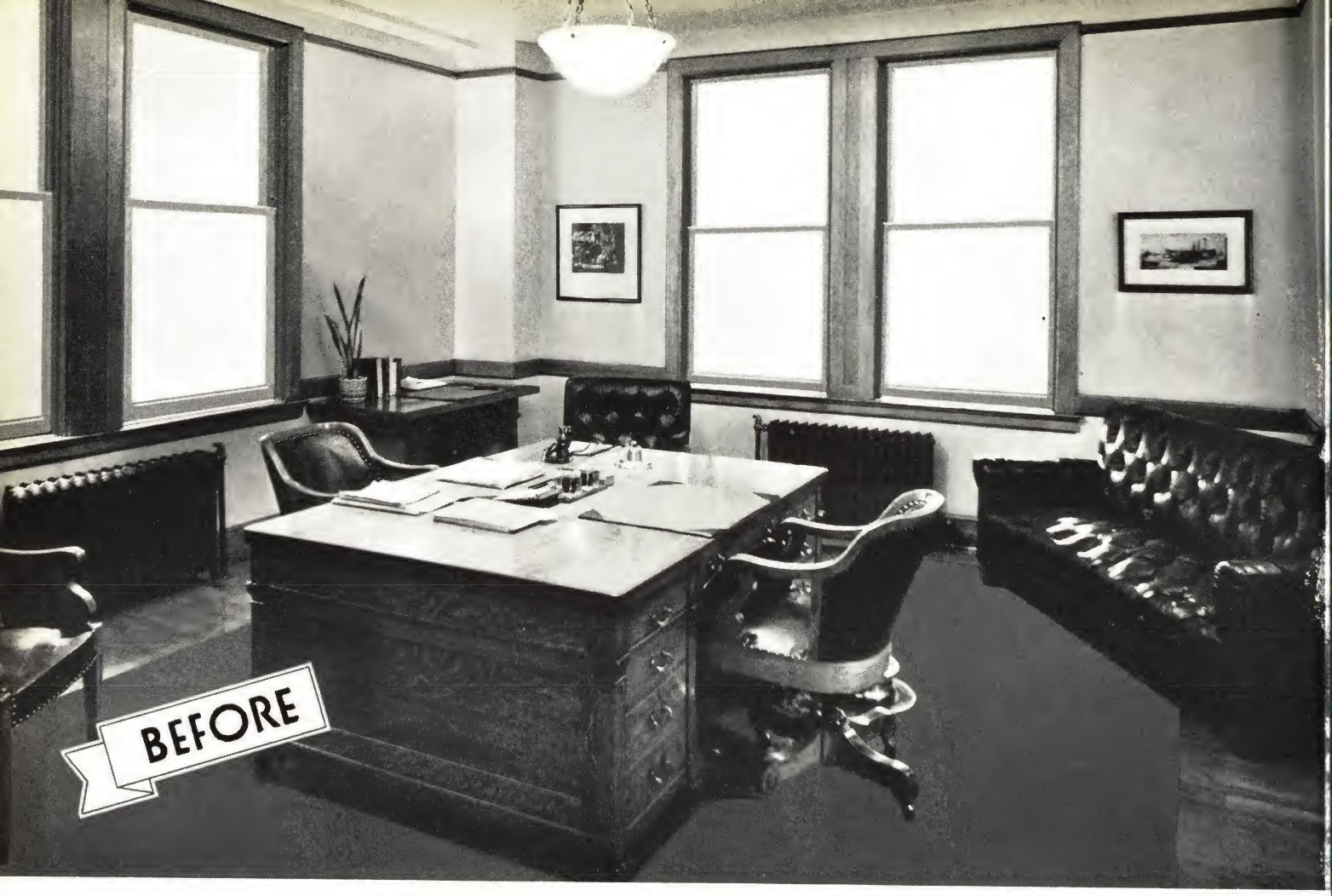


Fig. 542. Typical Example—Before Mills Metal Modernization

The average business man of today spends more than half his waking hours in his office, much more than he devotes to his home. Yet in most cases he endures conditions which he would never tolerate in his home. The Mills *MODERN METHOD* of office layout, renovating or space division creates an atmosphere of quiet dignity, of efficient businesslike easy-to-work-in surroundings.

MILLS *FLUSH*

Never before in the history of the building industry has so much partition been offered in any ONE design. Figures 544 and 545 exemplify the *MODERN TREND* to *STREAMLINED* surroundings which The Mills Company pioneered giving a new, up-to-date appearance to the progressive business office. Engineering skill has produced this *STREAMLINED* version of The *FLUSH PILASTER* Partition, the partition that is leading the field in durability, appearance, quality and efficiency.

The *FLUSH PILASTER* Partition is 3 inches thick, double insulated, and is absolutely flush and permanently flat with a double hair-lined joint between panels and ends, with no protruding parts to collect dirt.



SIZES

Mills *FLUSH PILASTER* Partitions are stocked in flush panels of either all steel or steel and glass construction, in multiple 6 inch widths (to 42 inches for all steel and 60 inches for steel and glass) for all standard cornice heights of 7′ 4⅞″, 8′ 9⅞″, 9′ 2″ and 10′ 1½″ (partitions above this height are not considered standard but can be fabricated).

With glazed panels the glass width is determined by the width of the panel used, but the height of the lower light is 42 inches (except in the stream lined type partition) and that of each upper light varies with the cornice height 15¾, 20¼ and 31⅜ inches. The 7′ 4⅞″ panel has a full light. The

Fig. 544. Typical Example—Mills *STREAMLINED FLUSH PILASTER* all Steel and Steel and Glass Partition



Fig. 543. **Typical Example**—Same Office with Mills Metal *FLUSH PILASTER* Wainscoting

PILASTER PARTITIONS

10′ 1½″ panel has full lights above and below, separated by a 2¼″ transom bar. The panels between these heights have a full light below and a half light above.

Door sections are interchangeable with 42 inch panel sections. Other sections are also interchangeable—an 18 inch and 24 inch section for a 42 inch section, etc.—to permit of any desired arrangement and *practically 100% salvage for rearrangement.*

In combination steel and glass panels the construction described above is used to a height of 42 in. with the glass above. The glass is held securely with modern moldings with no exposed screws or fasteners. Moldings do not protrude beyond the face of the panel and present a modern flat, and up-to-date appearance (characteristic of this partition) so much desired.

CONSTRUCTION

Each panel section is assembled from two sheets of high grade cold rolled furniture steel, first formed on the edges, then welded to rigid vertical channels of the internal core. Slabs of ½″ thick, low density, insulating board are cleated on studs attached to vertical channels and cemented against backs of the sheets under pressure. The panel sheets, while under pressure, are welded to the core around its entire perimeter, thus holding the insulation tightly against the steel and assuring a permanently flat rigid panel. No wind or weave is possible. While standard panels are highly sound resistant, holes are provided in the vertical channel members to permit the 2″ dead air space to be filled (when additional sound deadening is required) with blown glass wool, or other sound-proofing material. Base post caps may also be felt lined and filled for further sound resistance.



Fig. 545. **Typical Example** — Mills Modern *STREAMLINED FLUSH PILASTER* Partition. Mills Modern Methods and Engineering Skill Produced this Beautiful Office.



FEATURES OF THE MILLS

Fig. 504—An example of the "ART" in Mills Metal P*ART*ITIONS. Although the arches pictured here are not standard they are typical of the quality work THE MILLS COMPANY produces year after year. Only specialized engineering can produce such a satisfactory and artistic installation.

All surfaces are perfectly smooth, there are no unsightly joints or bulges where metal is welded. All walls are finished to match perfectly the finest of expensive grains.

The wiring is concealed in the built-in wire raceways in base and cornice. A complete installation with elevator doors and car interior grained to match the partitions.



Fig. 481—Mills 3″ *FLUSH PILASTER* Railing. 42″ high and built of standard units of the same quality, durable construction as the regular *FLUSH PILASTER* Partition, finished in a pleasing easy to clean (mild soap and lukewarm water will suffice) flat color.

A necessary requisite to any busy office where outsiders come and go. A definite control on needless traffic between departmental divisions where a maximum of efficiency must be obtained with a minimum of expense and time.

The Mills *FLUSH PILASTER* rail is so constructed and erected that it presents an appearance of permanence and stability. It is fastened to the floor by means of a patented anchor and leveling device. This leveling device assures the customer of perfect alignment of the partition in any type building whether the floors are new and level or old and uneven.



Fig. 451—Because buildings now standing and most new buildings erected today are more and more being equipped with air conditioning systems, THE MILLS COMPANY has designed a *MODERN FLUSH PILASTER* Partition, sufficiently flexible to meet changing conditions in present buildings and keep in step with continuous improvements in modern building design.

Figure 451 shows an installation of *FLUSH PILASTER* Partitions in an office having a double ceiling which contains the air conditioning ducts and other conduits.

Special doors are provided where air conditioning is used. These doors contain louvres especially designed to architects' specifications to retard sound from the corridor or office, and at the same time permitting a constant flow of air of a specified volume to pass through.

Thus the *FLUSH PILASTER* Partitions assure complete privacy where necessary, yet do not interfere with the satisfactory operation of any modern building accessories.



Fig. 502—Mills Metal wainscoting, pictured here, can do much towards making an old building modern, a better place in which to work, and give a new building a finished touch that plaster or ordinary materials cannot accomplish.

In this installation radiators, venetian blind mechanisms, and all other appurtenances, ordinarily exposed to and permitted to catch dirt and dust, are covered with wainscoting presenting a finished, *STREAMLINED* appearance.

In most buildings, all of the various plumbing, electrical, and furniture accessories such as book cases, etc., give the appearance of being an after thought, a later addition to the building unit breaking up the symmetry of an otherwise beautiful interior.

Mills *FLUSH PILASTER* Wainscoting will give any office that sleek *STREAMLINED* effect taken for granted today in all motor cars, trains, etc., thanks to the alertness of our engineering department in foreseeing the genuine need for a partition flexible enough to meet all conditions.

FLUSH PILASTER PARTITIONS

Fig. 442—Mills *FLUSH PILASTER* Partitions are designed to produce efficiency in all offices. The installation illustrated here, as in Fig. 481, was planned by Mills Engineering Department to save wasted effort, to save time, to prevent a costly drain on the resources of a modern company.

Only partitions easily erected of standard units which may be interchanged with other units, in case of necessity, can be considered modern and efficient. Mills *FLUSH PILASTER* units are all interchangeable and *practically 100% salvageable.*

A standard 42″ all steel panel may be removed from any section of a run of partitions without disturbing the panels on either side or the filler above and a standard door, wicket, steel and glass, or bookcase section being substituted. This change can be made overnight or during working hours without disturbing employees adjacent to these partitions or creating any annoyance, dirt, dust or noise.

Fig. 513—Most busy executives of progressive firms like to keep in close touch with the activity of their organizations but, also, require a degree of privacy when the need arises.

Mills *FLUSH PILASTER* Partitions, as pictured here, are sufficiently flexible to meet the demand for any arrangement where departmental unity plus individual privacy is necessary. In this installation provisions were made, whereby, the chief executive could, at any time, confer with his staff without the annoyance of stepping into the open corridor and exposing himself to undesirable or less important business. Yet, at all times, each office was a complete unit and isolated from adjacent offices.

Private clothes closets and lavatories were built into each office using *FLUSH PILASTER* Partitions throughout, and all grained in a natural American Walnut grain. In this building THE MILLS COMPANY laid out and installed an office that is pointed out as a fine example of the modern trend in commercial building interior decoration.

Fig. 523—THE MILLS COMPANY is always on the alert to correct conditions which tend to create disturbances or annoyance. For example, we illustrate here a condition which eliminated a constant irritation in one office.

Everyone is aware of the musty, closed up smell of a wardrobe on a rainy day. In this case, our engineering department was consulted and eliminated the trouble immediately by specifying a panel with a built-in ventilator to be installed. This ventilator was designed to circulate a current of air through the enclosure.

Our engineering department is always at the disposal of architects, engineers, contractors, and building owners. Present your problem to our nearest representative. He will be glad to submit the information to us and we will forward our solution with no strings tied to it, no obligations at any time for our engineering service.

Fig. 531—The Mills *FLUSH PILASTER* Partition is stocked in a large assortment of sizes of all steel and steel and glass panels. At practically a moment's notice, we can ship to any destination a complete office layout of the type illustrated here and have it ready for occupancy in less than one day after the arrival of the material.

Research and careful engineering has placed manufacture and installation of Mills *FLUSH PILASTER* Partitions in a class with the production line methods of the well-known automobile manufacturers. When you specify Mills Partitions you are assured of quality merchandise plus our continued interest in the installation even after we are absolutely certain that it is satisfactory to the customer in every detail.

Our many high grade installations all over the country speak for our engineering skill and ability to produce a more than satisfactory partition. Wide acceptance by architects, contractors and buyers has been accorded this most distinctive and original line.









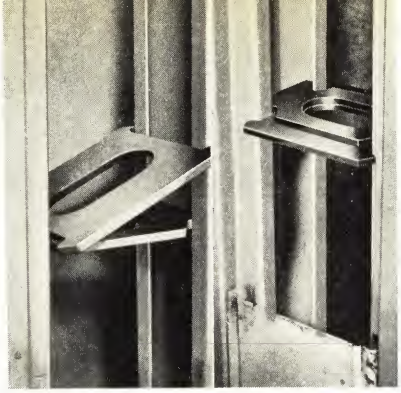


Fig. 389. Combination Tension and Compression Clip. Open and Closed

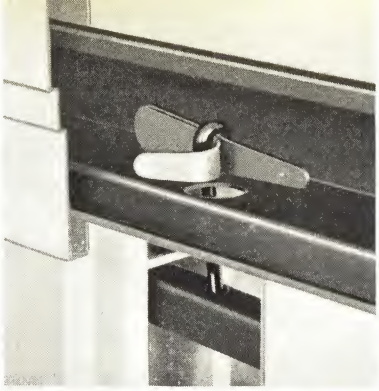


Fig. 390. Cotter Pin Key Wedge Easily and Quickly Locked, Tightly Holding Structural Cornice at Each Post

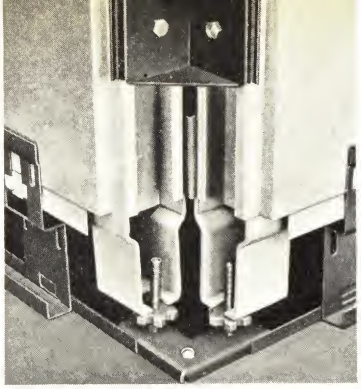


Fig. 383. Corner Post Clip and Spacer Forming Perfect "T" and Corner Connection

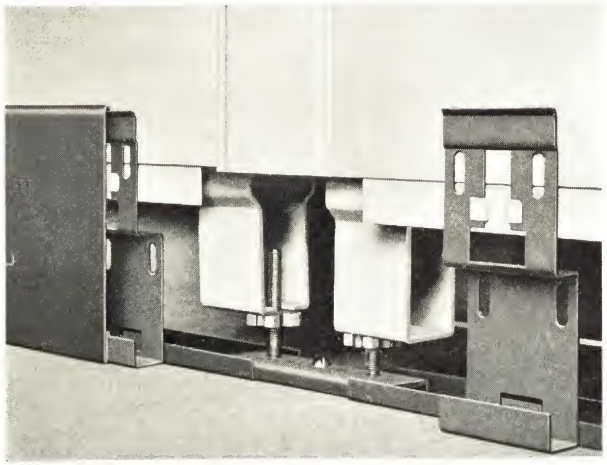


Fig. 387. Patented Leveling Device Holding Floor Channel in Perfect Alignment from Pilaster to Pilaster

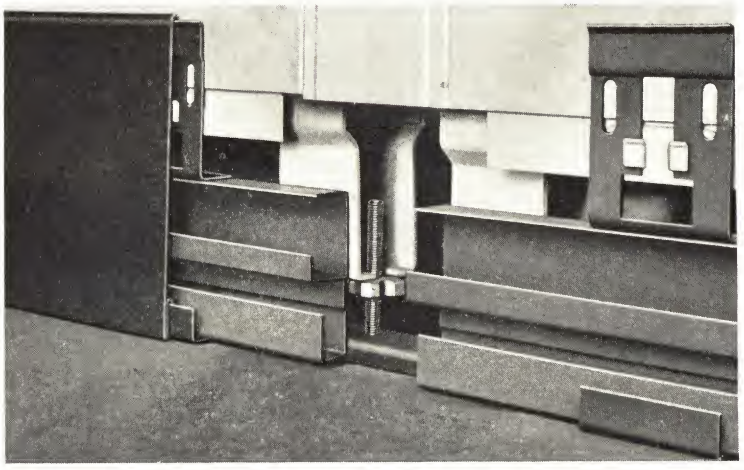


Fig. 385. Standard Assembly at Pilaster Showing Removable Base with Layin Wiring Feature

SPECIFICATIONS MILLS FLUSH PILASTER OFFICE PARTITIONS

UNITS—The partitions are to be built in standard cornice height of either 7′ 4⅞″, 8′ 9⅞″, 9′ 3″ and 10′ 1½″ to the top of the cornice trim as indicated.

All units are to be shipped from the factory in one assembly from floor to cornice in widths of multiples of 6″ not to exceed 42″ in all steel and 60″ in steel and glass. All are to be interchangeable. All 42″ wide panels will interchange with a 42″ door section. All units are to be 3″ thick.

On all ceiling height partitions the units are to be so designed that any panel below the cornice line can be removed without disturbing adjacent panels or any material above cornice.

PANELS—Shall be constructed of two sheets of high grade furniture stock steel formed at the edges to fit over and be welded to an internal core. The internal core is to consist of two slabs of ½″ thick insulating board held approximately 3″ apart by means of an internal steel frame with horizontal steel studding approximately 15″ on center. The insulation board of this core to be fastened mechanically by use of cleats on 18″ centers projecting from the horizontal steel stud.

The entire core is to be cemented under 100 lb. pressure per square foot to the two outside sheets of steel and at the same time to be welded to the internal steel frame around the entire perimeter of the panel on both faces. The edge of the entire perimeter of the insulation board is to fit into a steel groove thus formed by the above operation to prevent peeling of the board from the steel at the edges.

This entire unit to remain under pressure for 48 hours to insure a finished surface of flatness free of all waves, buckles and heat distortions.

Glass openings to be provided in the upper panels for either single or double glazing as indicated in the elevation.

DOORS—All doors shall be made of the flush design with 5″ wide stiles and flush panels. All doors to be heavily reinforced with 3/16″ thick x 1½″ wide plates securely welded in place for hinges, locks and door checks. The standard swing door with frame to fit a 42″ wide section and be approximately 3′x7′. Glass to be held in place on all four sides with mouldings without the use of screws.

TRANSOMS—To be center pivoted and operated by means of a concealed transom operator, operating handle to be conveniently located, etc.

BASE—The base shall be 6″ high of flat sanitary design and run continuous along the entire bottom of both sides of the partition without the use of plinth blocks at the pilaster point where panels are joined. This base to be attached to clips which fasten to the bottom of the panels without the use of screws. Also to have vertical adjustment to take care of the unevenness of floors. This base to be of the removable type to provide quick access to continuous wiring space below partition panels.

CORNICE—Shall run continuous over the top of the entire layout of partition. Same shall have an internal structure of two generally channel shaped sections welded back to back so as to provide maximum horizontal rigidity and continuous unobstructed wire raceway on each side of the partition. The ornamental trim of a removable type is to be snapped on individually over the wire raceway to provide a finished appearance.

WALL FILLERS—Shall be adjustable and provided at each point where the partitions attach to a column, pilaster or wall. They shall be constructed 3″ thick and insulated. Same to telescope into a channel fastened to the wall. All raw steel edges and wall fastenings to be concealed.

***FLUSH PILASTER* CAP**—To be flat ornamental inlay design. The surface of same to be flush with face of panels.

FLOOR CONNECTIONS—Shall be concealed by the base and fit below each flush pilaster cap. They shall be fastened to the floor with 1¾″ long screws through a steel pressure pad to distribute weight of partition and keep from cutting the mastic, wood or linoleum floor. They shall also be provided with vertical threaded studs and leveling wheels on which the panels shall set and be leveled, to take care of floor irregularities.

CORNICE CONNECTIONS—The cornice shall be tied to the posts by means of a cross bar that "shoulders" under a clip provided at the top of the panels and connects to the cornice with a 3/16 diameter hook bolt that fits over a split key wedge in the cornice for drawing the cornice down tight on the panels. All wedges must be split open. No bolts, screws or nuts to be used.

Panel Connections—The panels proper to be connected by means of a special design friction clip allowing ample space between panels for concealment of electric wires, switches, etc. This clip shall be so designed as to take the post cap and hold tightly in place by means of a snap on friction clip which is

A MILLS METAL PARTITION FOR EVERY PURPOSE

part thereof and shall be designed so it can be placed at any point in height of the panel.

CEILING HEIGHT PARTITIONS—Where partitions are to extend to the ceiling the space from the top of the cornice to the ceiling is to be filled with double mineral board filler with neat connections at ceiling and walls. Mineral board to be applied over studs set 24″ on center. This filler board to be painted to match ceiling by painting contractor. Joints to be buttered with compound used for that purpose and covered with perforated zinc tape to make joints invisible and prevent cracking.

FINISH—All partitions, doors and miscellaneous parts are to be thoroughly cleaned free from oil and given one coat of rust retarding primer and thereafter two coats of flat lacquer, each coat applied separately. Colors to be as selected.

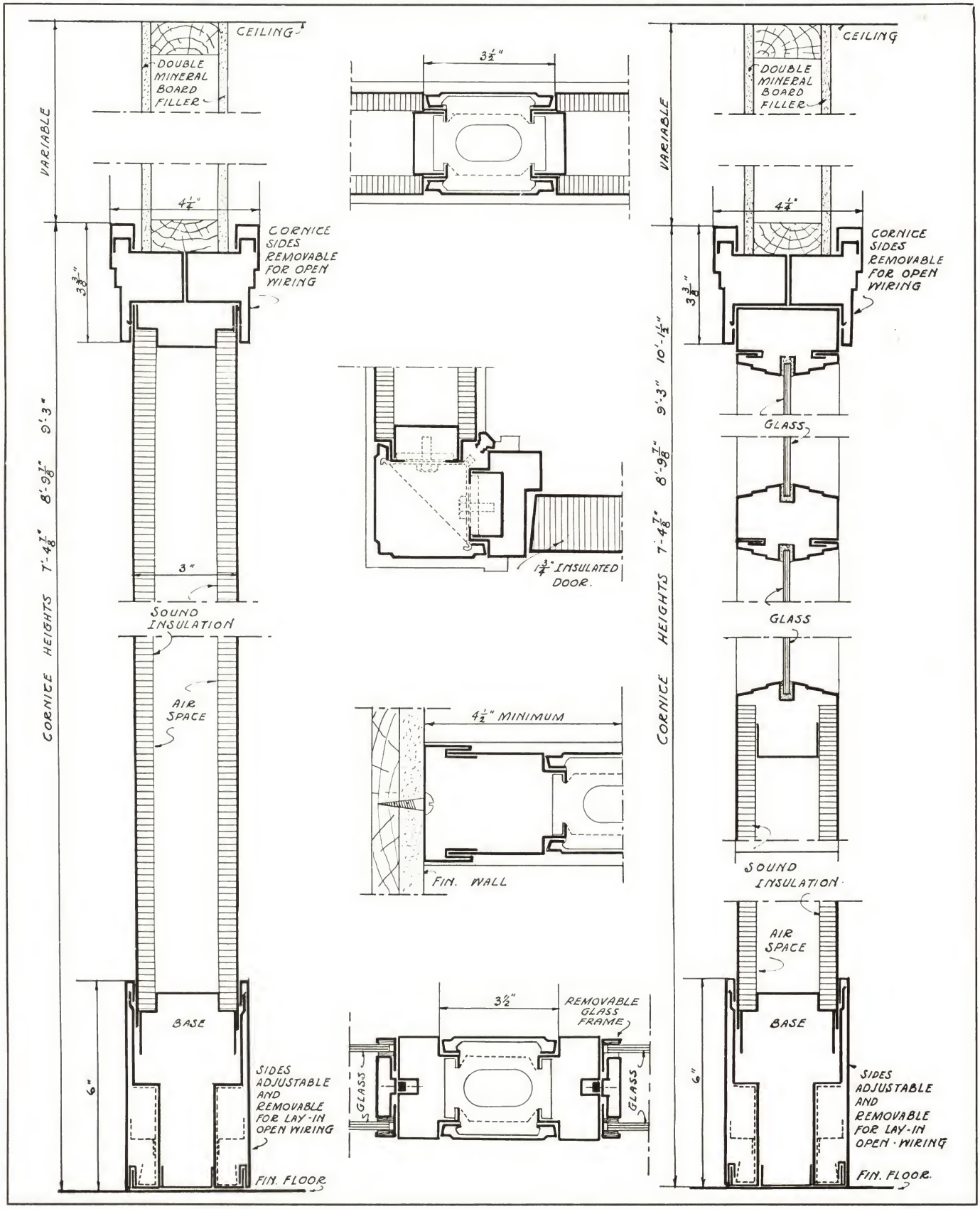




Fig. 455 Typical installation of MILLS *SINGLINE* FLUSH Partitions

MILLS *SINGLINE* FLUSH PARTITIONS

Mills *SINGLINE* Flush Partition is the closest approach to plaster in modern interchangeable walls of steel. It is a wall made of standard panels joined with a single vertical line—no pilaster—but at the same time easily taken down—reerected or rearranged without loss of material or serious inconvenience.

SINGLINE panels are built in standard width and heights, over a steel reinforced sound deadening core, assuring permanent flatness.

Cornice or picture mold is continuous and is quickly and easily removed for access to a "lay-in" wiring raceway.

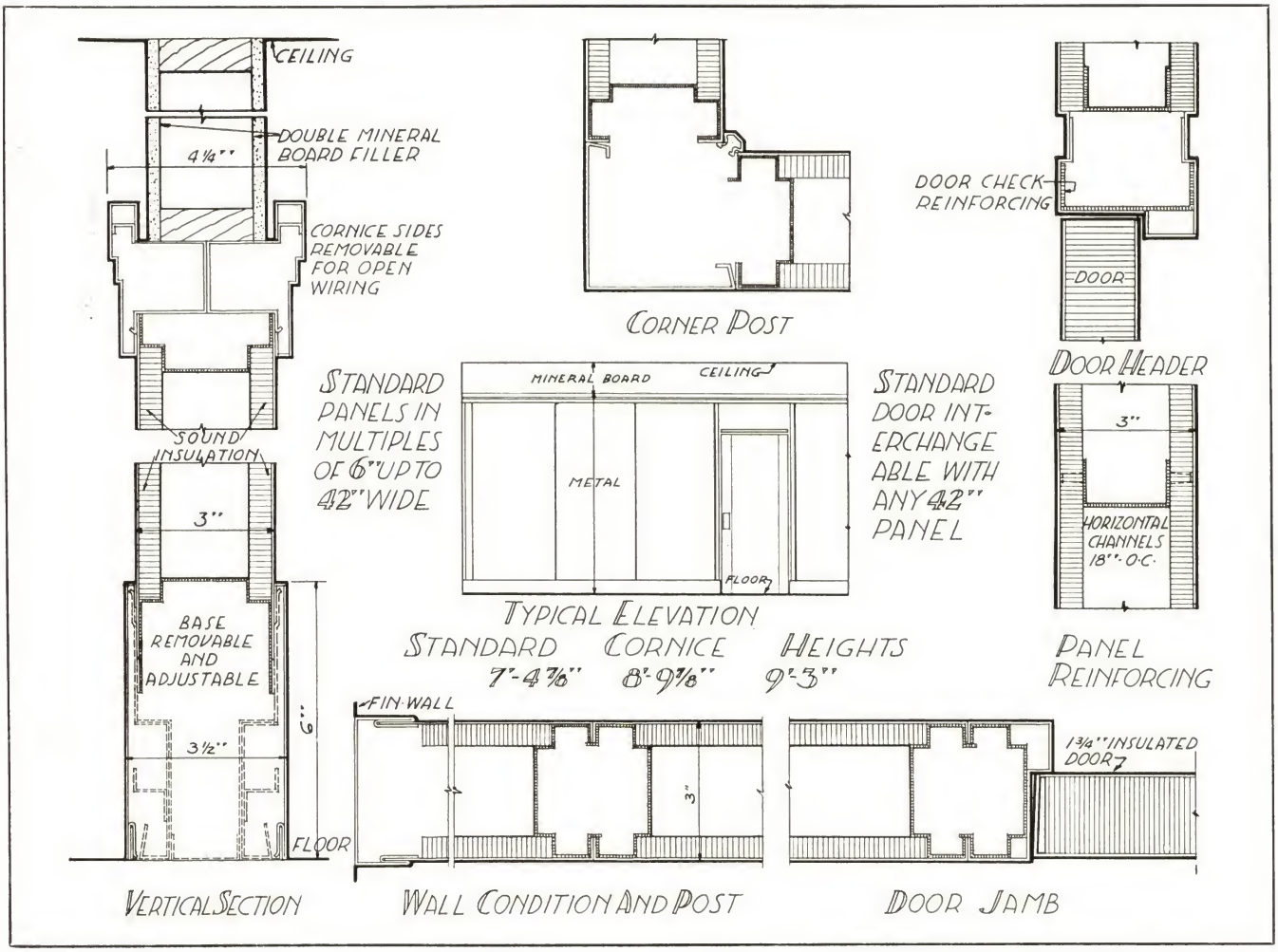
Although continuous base is automatically adaptable to hug tightly to bare floors, linoleum or carpet, it is also easily removable from either side separately for "lay-in" wiring.

Mills *SINGLINE* Flush Partitions are highly sound retarding and can be made practically sound proof.

This partition is recommended for rigid interchangeable walls without glass.

They can be furnished with glass, either single or double glazed. *SINGLINE* Flush Partitions are furnished in harmonizing plain color or paneled in perfect wood reproductions.

Dia. VII. **Details:** Mills *SINGLINE* Partitions



MILLS *EXECUTIVE* PARTITIONS

Rigidity, permanent appearance, beauty, low cost, easy erection and high salvage for office rearrangement have won great favor for Mills *EXECUTIVE* Partitions from coast to coast.

Lower panels of Mills *EXECUTIVE* Partitions are fabricated from two sheets of high grade furniture steel, insulated with suitable sound deadening material.

Upper sections may be of similar construction or of glass—glass moldings being used which will accommodate any glass of ordinary thickness without requiring the use of screws or other exposed fasteners. Floor channels are anchored tightly to the floor.

The inside structural cornice and ornamental outside cornice are both secured tightly to each post with rigid hook bolts.

Pilaster plinths are beautifully designed and are easily removed for "fish-wiring" the base. All horizontal and vertical sections are molded for additional strength.

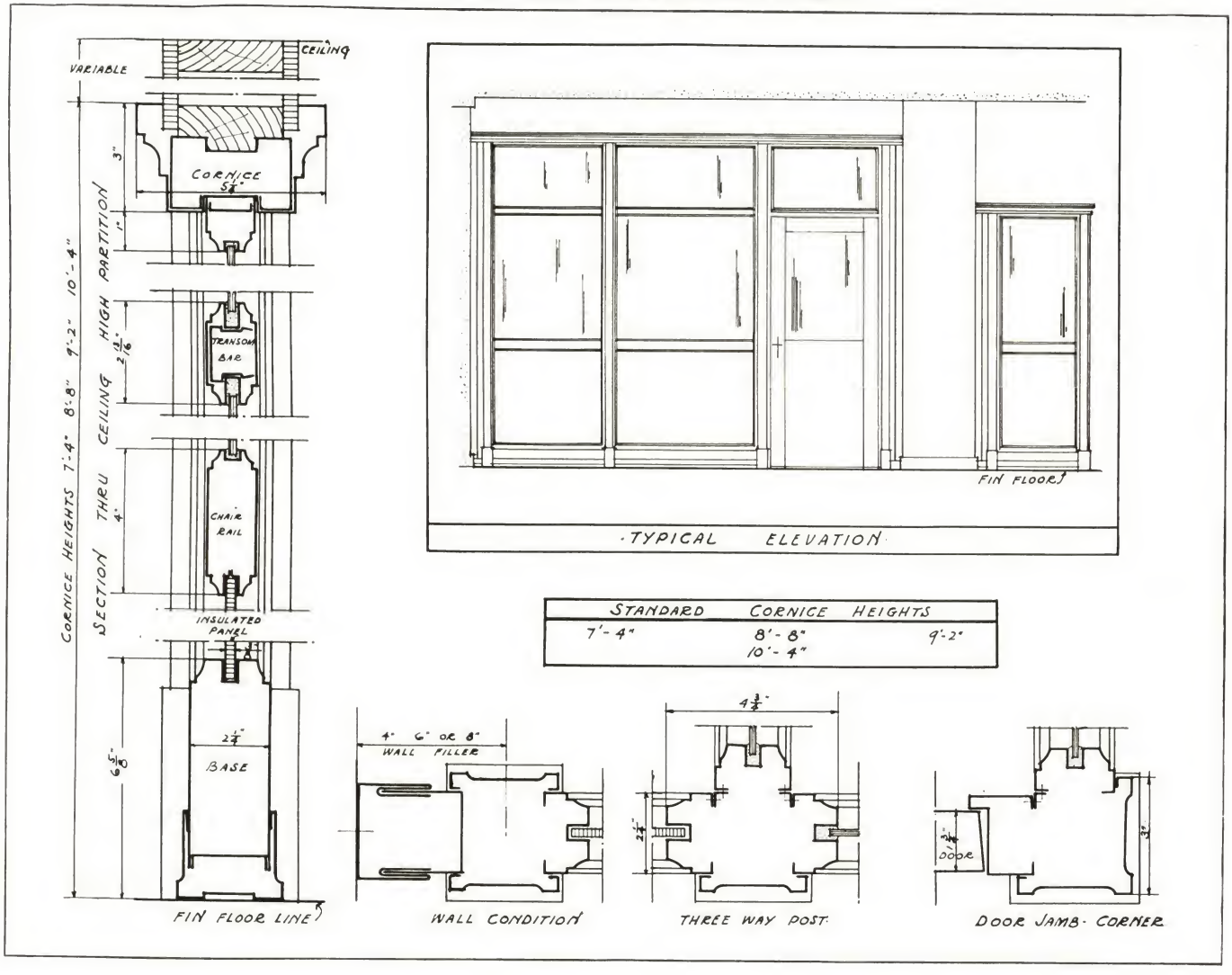
Mills *EXECUTIVE* Partitions are available in multiple widths of 5 inches for standard cornice heights. Door sections are interchangeable with 40 inch panel sections. Panels are also interchangeable, a 20 inch and 30 inch for a 50 inch, etc., to permit of any desired arrangement or rearrangement.

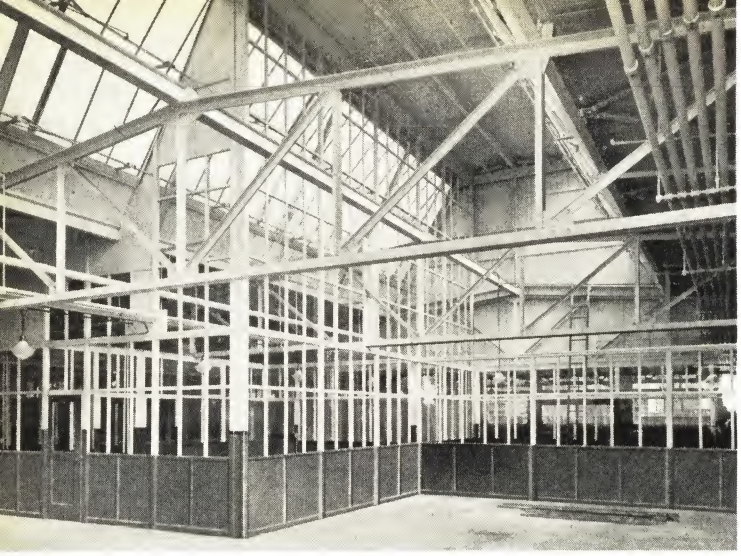
Panels, transoms, doors, grilles and wickets are standardized. Standard units are furnished in flat finishes to harmonize with any color scheme.



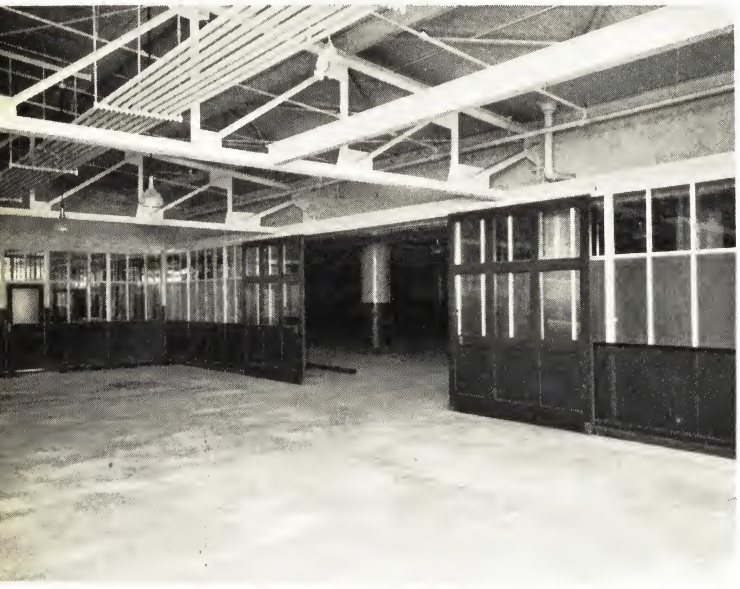
Fig. 206. **Office Built Entirely of Standard Units**—Mills *EXECUTIVE* Partitions

Dia. VIII. **Details:** Mills *EXECUTIVE* Partitions



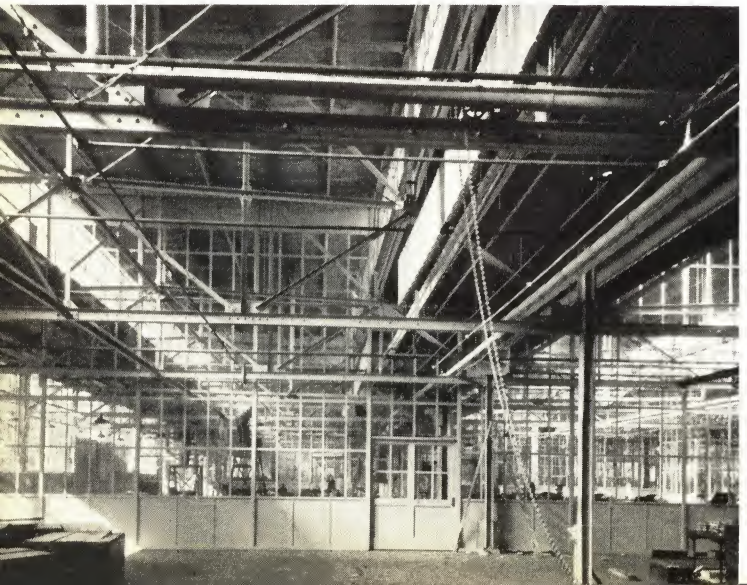


ig. 185. Mills *COMMERCIAL* Partition—Extreme Height with Strength and Rigidity.



ig. 183. Mills *COMMERCIAL* Partition—Steel and Glass Where Light Is at a Premium.

ig. 159. Mills *COMMERCIAL* Partition—Minimum Maintenance with Ruggedness for Hard Usage.



MILLS *COMMERCIAL* PARTITIONS

The adaptability of Mills Metal Partitions is practically unlimited. Made in standard size interchangeable units of 20, 40, 60, 80 and 100 in. Two 40's will exactly replace one 80; a 60 and a 40 will exactly replace one 100, and so on. A standard door is interchangeable with any 40-in. unit.

As a result we have a straight line production proposition, the product being manufactured like any standard commodity and shipped from the factory to the job just like so many bricks ready to use.

On the job, erection is easy and simple. Every piece is manufactured precisely to fit with its companion piece. It is rigidly bolted to the others and the erection completed in a remarkably short time.

All this means extreme economy. Standardized production always means economy. We are large producers and this contributes to economy. Shipped to the job ready to erect means a running start for the erectors.

When office or factory department changes are required there is nothing to tear down and haul out in a wheelbarrow. Nothing new to buy. Any ordinary workman can quickly disassemble the partitions and reassemble them in any position required.

Economy now. Economy every year.

A Mills Metal representative in every principal city, or the Home Office, is ready to give you a complete price including erection and glazing.

FEATURES OF ECONOMY AND DURABILITY

1. The difference in height between the ceiling and the maximum height obtainable by the use of standard units is filled with a two-piece filler, and this filler is adjustable so that it will fit tight against uneven ceilings. Fillers of various heights are carried in stock.

2. DOUBLE ADJUSTABLE WALL FILLER. If standard panels do not exactly fill the required space, the difference is taken up between the last post and the wall with double fillers—stronger, neater and adjustable, thereby saving considerable erection time. We recommend double fillers; however, single fillers can be furnished at a reduced cost.

3. ADAPTABILITY OF MILLS METAL *COMMERCIAL* PARTITIONS. Practically any desired arrangement can be had in panel construction of this partition. Glass, wire mesh, ply-metal, grills, ventilators can replace standard units as desired.

4. All glazing is very simply done by merely setting the glass in the proper panel and snapping on a removable cap after the glass is set. The cap is removable from one side of the partition only.

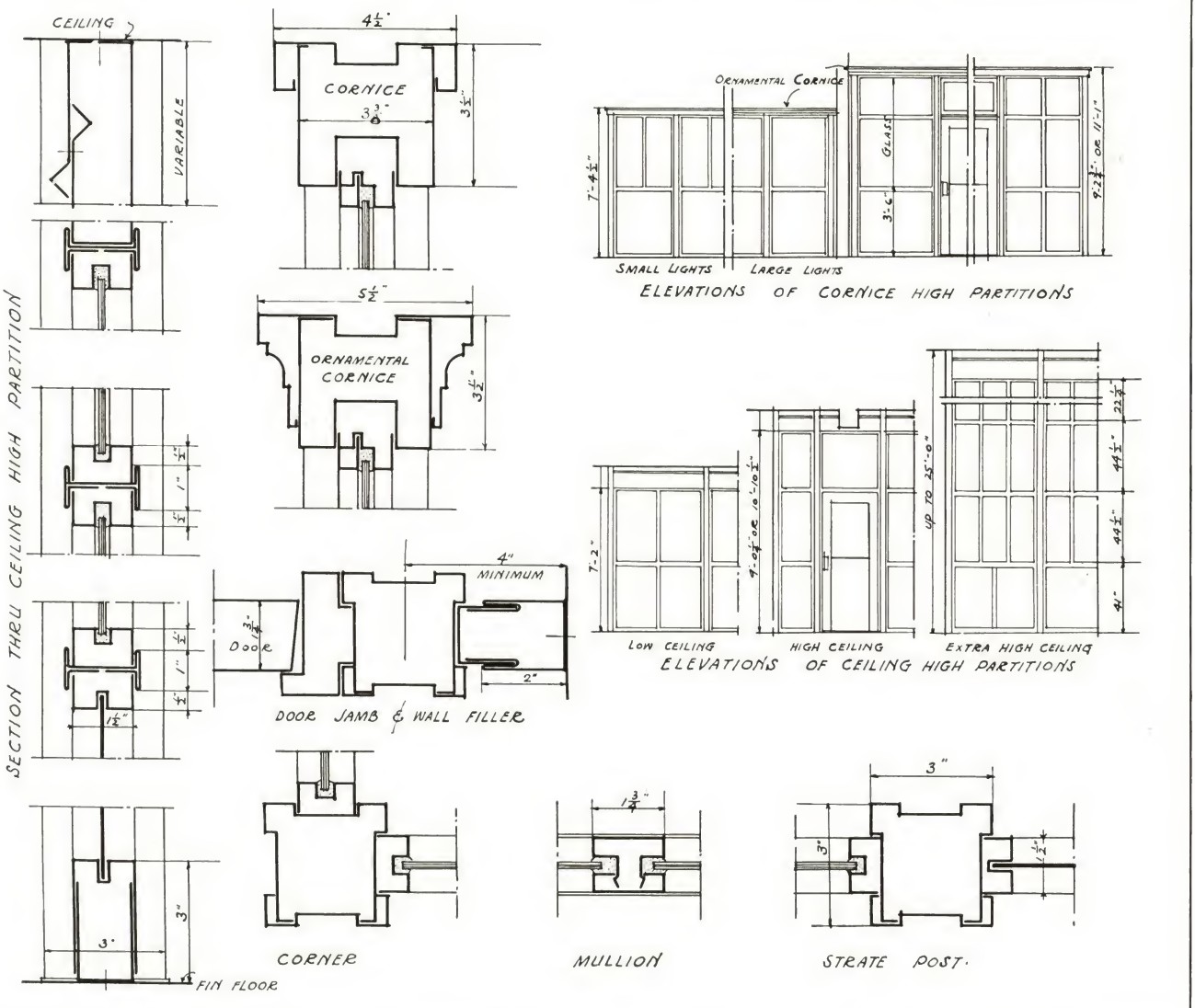
5. HOLLOW METAL DOOR FRAME. Instead of an angle door strike with two right angle bends, the Mills Metal frame has EIGHT angle bends. This means greater strength, less noise, and the door rests always in place. The door frame is unusually heavy in construction and is interchangeable with any 40-in. section. A standard door is 35 x 83 in. and the top of the center rail is 42 in. off the floor corresponding with the panel height.

6. THE SPECIAL TELESCOPIC FLOOR CHANNEL and bottom panel rail provides for an adjustment up to 2½ in. so that the partition adheres tightly to the most uneven floors. This section also provides a raceway for electric wires and cables. The bottom of the post is punched to permit wires to extend straight across the run of partition.

7. STEEL and GLASS PANELS are made easily interchangeable by means of an intermediate rail connection.

8. THE INTERMEDIATE RAIL OF I-BEAM SECTION adds both in strength and appearance. Partitions without this intermediate rail often fail in the wear and tear of shop practice.

9. OUR DOOR HEADER is so constructed as to permit easy and quick attachment of door checks, transom controls, etc., and to permit horizontal wiring over the door space. The cornice is of rigid two-piece construction.



Dia. IX. Details of Mills *COMMERCIAL* Partitions

SPECIFICATIONS

Partitions shall be built by the assembly of standard units of panels, posts, chair rails, transom bars, and sash. The lower panel shall be approximately 42 in. high and either glass or steel units above the lower panels which shall be in standard units of either 42½ in. or 20 3/16 in. high. With this combination any required ceiling height can be accommodated.

All units shall be built in multiple widths of 10 in. and built so that two 40s, a 50 in. and a 30 in., or four 20's make an 80 in., etc. 40-in. units shall be interchangeable with standard doors.

Steel panels and glass frames shall be kept rigid by means of an interlocking I-section running between posts.

In ceiling height partitions, posts shall run from floor to ceiling and shall be paneled on all four sides, and shall be so designed that a run of partition may be extended in any direction from any post.

Panels and sash shall be rigidly attached to the post. Post caps shall be fastened to posts without the use of screws or any exposed fastenings.

Where cornice height partitions are required they shall be finished at the top with a two-piece box cornice.

Cornice base, and post shall be unobstructed to provide for and make easy wiring.

Where standard units do not exactly fill the space, double fillers are to be used at the ends of the run.

Units shall be built to accommodate any ordinary thickness of glass and permit easy glazing by removing only the stops on the muntin bars.

Glass shall be run to within 18 in. of the ceiling where adjustable metal filler plates shall be provided to fill the balance of the opening.

Standard color is olive green—other colors as specified.

Hardware: Doors shall be provided with two 4½ x 4½ in. loose pin ball bearing butts and shall be punched to accommodate any one of five styles of Yale and Towne Locks, ranging from an ordinary bitt key lock to a high grade cylinder lock.

Door checks: LCN standard—Yale and Towne optional.

Finish: Baur-Barff (dead black), or polished bronze.

Glass as specified.



Fig. 541-A. A New, Quality Toilet Compartment Engineered by Mills.

MILLS *MARBLMETAL* TOILET COMPARTMENT

THE MILLS COMPANY is setting a new standard in the metal compartment field, we offer MILLS *MARBLMETAL*, THE QUALITY LINE. A line carefully planned, correctly engineered and manufactured with painstaking attention to every small detail not commonly given to a product in present day production methods. In MILLS *MARBLMETAL* you get CUSTOM BUILT partitions under standard specifications for YOUR PROTECTION.

Building owners, realizing the need for modernization, individuality and greater sanitation with which to hold present tenants and to secure new tenants, have been casting about for new and different, yet durable and economical restroom accessories. Mills *MARBLMETAL* is the solution to this pressing need.

In this product, as in our other compartments, we have used high grade stretcher leveled steel formed and assembled to provide great strength and longevity. In this our de luxe, compartment line, we have taken careful precautions to provide a finish tested and proved to be long lasting and easy to keep clean and sanitary. As in our other widely accepted lines, we use a finish highly resistant to odors and stains.

A notable feature of this outstanding partition, the units are designed to attach to the wall and floor so that they are RIGIDLY braced WITHOUT THE USE OF THE CUSTOMARY HEADRAIL, thus giving your toilet room a more PLEASING APPEARANCE.

This QUALITY product is especially recommended for MONUMENTAL TYPE buildings, for clubs, for hotels and institutions.

THE MILLS *MARBLMETAL* COMPARTMENTS ARE equipped with our high quality modernistic hardware. Hardware built for hard usage as well as beauty of shape and design. Of a specified design to present a minimum of exposed fastenings and projections making the compartments easier to clean and to stay clean and dust free longer.

With the Mills top and bottom hinge no oiling or attention is necessary, assuring long life at no expense. The lower gravity type hinge may be adjusted to hold the compartment door at any desired angle.

All floor fittings are of high grade cast brass and heavily nickle plated. All are 3″ high and solidly anchored to the floor with two concealed bolts spaced apart and attached to the front panel of the unit with two bolts spaced apart.

All fastenings are of the new recessed head tamper proof type which cannot be removed without a special tool.

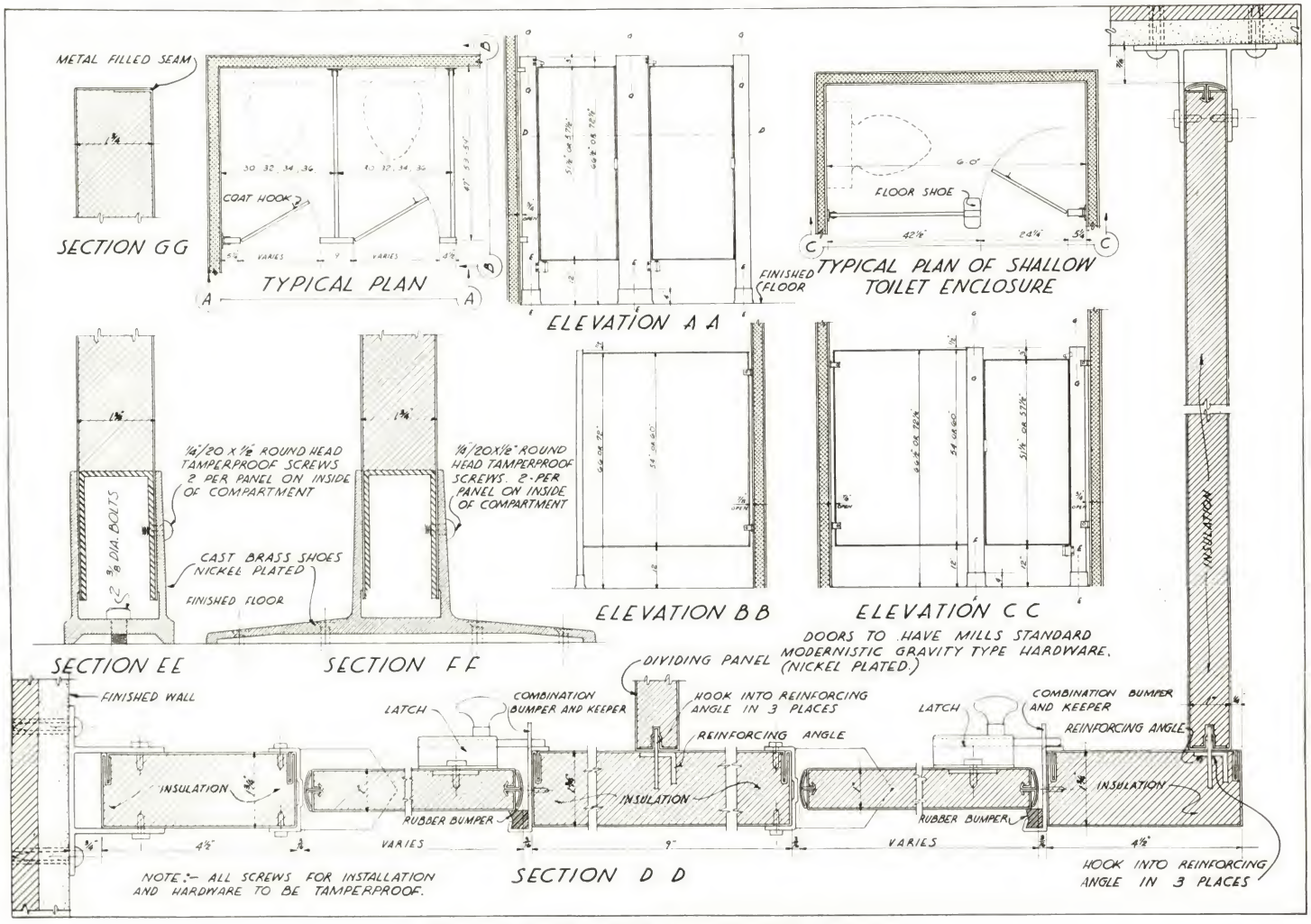
All panels and doors are given a rust resisting primer coat and baked. A Finish coat is then applied and baked to a hard enamel-like surface.

MILLS *MARBLMETAL* TOILET COMPARTMENTS can be furnished in a wide variation of color to match any color scheme in your toilet rooms or any color specified.

Fig. 541-B. . MARBLMETAL—Mills New Development of the Modern Sanitary Partition.



A MILLS METAL PARTITION FOR EVERY PURPOSE



Dia. X. Details of Mills *MARBLMETAL* Partitions

SPECIFICATIONS FOR MILLS *MARBLMETAL* TOILET COMPARTMENTS

GENERAL—The Toilet Compartments shall be *MARBLMETAL* as manufactured by THE MILLS COMPANY, 965 Wayside Road, Cleveland, Ohio. THERE SHALL BE NO POSTS OR HEAD-RAIL.

DIVIDING PARTITIONS—Shall be 1 in. thick made of two sheets of 22-gauge stretcher leveled furniture stock steel spaced and insulated with a laminated fibre filler cemented to inner surfaces with a waterproof rust-resisting binder. To assure uniform adhesion all panels shall stand under pressure for 24 hours. Edges of panels shall be bound and interlocked with rolled steel moulding welded at all corners.

DOORS—Where shown on plans shall be 1 in. thick and of same design and construction as specified for dividing partitions mentioned above. All doors to be reinforced for hardware, rigid and free of wind. Top of doors to finish 3 in. below top of front panels.

FRONT PANELS—Shall be 1¾ in. thick made of two sheets of 20-gauge stretcher leveled furniture stock steel spaced and insulated with a laminated fibre filler cemented to inner surfaces with a waterproof rust-resisting binder. To assure uniform adhesion, all fronts shall stand under pressure for 24 hours. Front panels shall be made of interlock construction with no seam showing on outside face of panel. Top edge shall be metal filled and filed smooth to insure a clear-cut workmanlike finish. Rear of panel shall have concealed reinforcing for dividing panel attachments (the dividing panel is attached to the front panel by 3 concealed hooks that draw the dividing panel tight to front panel). Bottom of front panel shall be heavily reinforced to receive shoe fitting.

HARDWARE—To be Mills Company standard, consisting of Universal gravity bottom hinge, covered top hinge, slide bar latch, bumper, rubber tipped coat hook. All to be brass, nickel plated.

BOTTOM HINGE shall be of gravity type operating with a ball-bearing roller on a hardened steel cam with pintle extending into door reinforcing. Cam shall be adjustable to permit door to rest at any desired angle. Entire bottom hinge to be enclosed with a cover of modern design in keeping with the architectural appearance of the compartments.

TOP HINGE shall have pin completely enclosed with a cover of modern design and pin shall extend into door reinforcing without the use of exposed saddle on door. Both top and bottom hinge pins to operate in graphite impregnated fibre bushings.

LATCHES to be of slide bar type with anti-rattle springs and attached securely to face of door over a concealed reinforcing plate.

BUMPERS shall be 3 in. long rubber lined and fastened securely to face of front panel. Bumper to have keeper for slide latch as part of same.

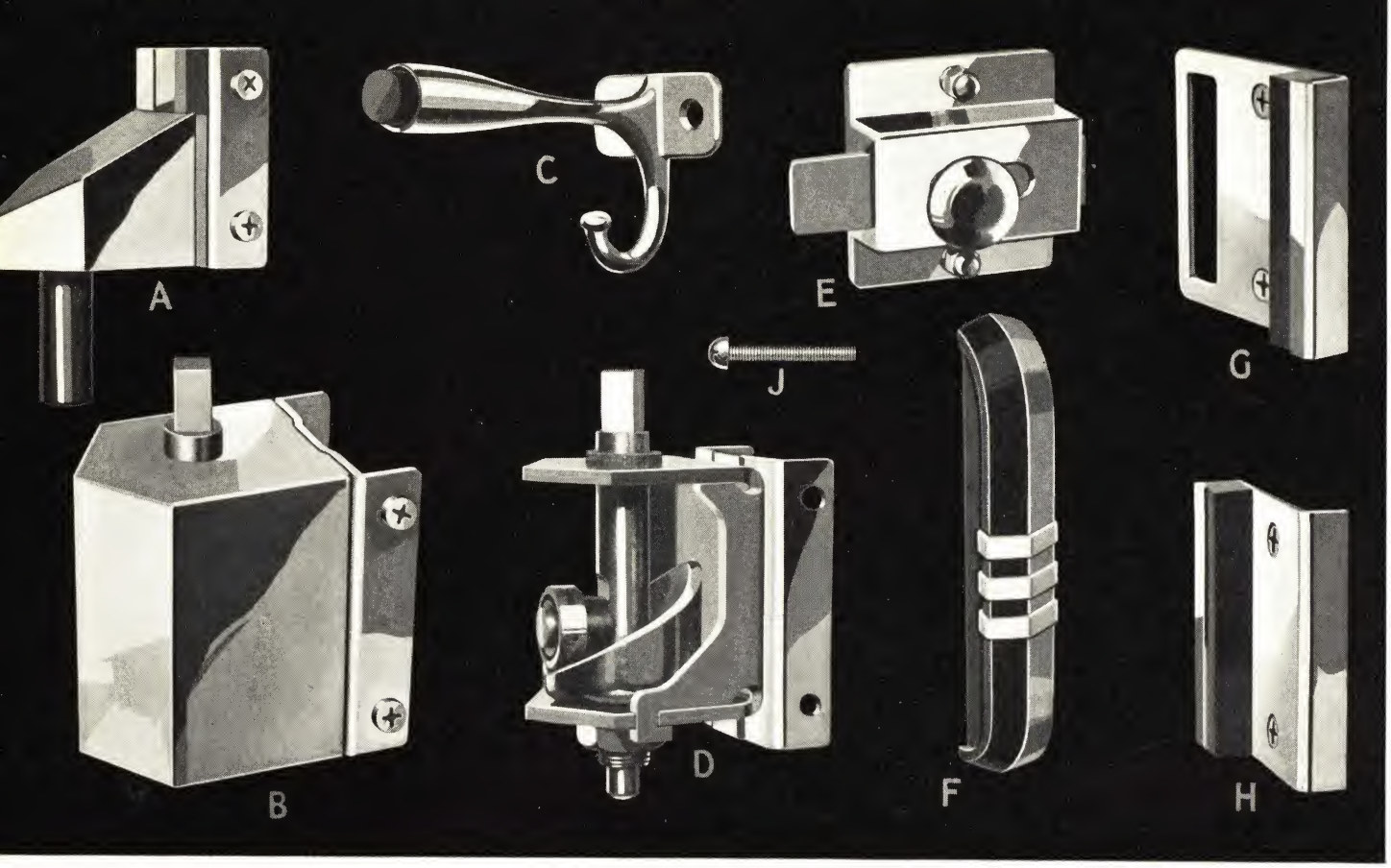
COAT HOOKS shall be 4½ in. long with rubber tip securely fastened to concealed reinforcing on inside face of the door. Bottom of coat hook to carry a bulge so as not to tear through clothes.

FLOOR CONNECTIONS—Floor fittings shall be of heavy cast brass nickel plated 4 in. high and bolted securely to the floor in two concealed places with ⅜-in. diameter bolts spaced apart. Bottom of front panel is bolted to shoe from inside of compartment with 2 bolts spaced apart.

WALL CONNECTIONS—All panels (front and dividing) shall be fastened to masonry walls with 2 cast stirrup brackets each 6" from top and bottom of panels. Stirrup brackets shall be designed to hold panels away from wall ¾ in.

SCREW CONNECTIONS—All fastenings to masonry walls or hardware that are exposed are to be tamper-proof so they cannot be removed without the use of a special design tool.

FINISH—All material shall be completely finished at the factory. Material shall be first thoroughly cleaned and given a heavy coat of rust-resisting primer inside and out. After baking two finish coats shall be applied separately. Standard colors are olive green or gray. Other colors available as specified.



MILLS TOILET COMPARTMENT HARDWARE . . .

Modern in Design and Styling

A partition is no better than its hardware . . . and certainly no more sightly. Mills Hardware meets the standard of modern design . . . it combines beauty of shape with efficiency in use.

All Mills fastenings are of the recessed head tamper-proof type. THE MILLS COMPANY, realizing the need for protection against pranksters, etc. especially in schools and other institutions, now equip all hardware with this new fastening.

A The upper hinge spindle is locked rigidly in place and is attractively housed.

B The lower hinge is entirely enclosed and is styled to harmonize with the other hardware. Bracket can be furnished to fit different thicknesses of marble.

C Coat hangers are fitted with rubber door bumpers and shaped to prevent tearing apparel.

D Lower hinge with cover removed to show ball-bearing roller mounted on a hardened steel cam which can be adjusted to stop the door at any desired angle.

E Latches of sliding bar type, fitted with anti-rattle springs and through-bolted. Round recessed head bolt "J" is used from the inside when doors are out-swinging, holding the door handle tightly to the door without exposed fastenings.

F Door handles are modern in design . . . made of non-breakable bakelite, chromium trimmed.

G Door bumper for in-swinging doors with keeper and rubber cushion.

H Bumper used with out-swinging doors.

MILLS *METAL FLUSH* TOILET PARTITIONS

FEATURES

Mills *METAL FLUSH* Partitions for toilets, showers, cubicles and dressing rooms are the product of wide experience and research. In reality, a splendid quality product which embraces all of the fine features of sanitation, ease of cleaning and flush, attractive appearance. Double cold rolled furniture steel sheets are used, insulated between securely welded seams and posts. The Mills *METAL FLUSH* odor-proof partition defies comparison.

SIZE

METAL FLUSH panels are in multiples of 6 inches in depth and either 54 or 60 inch heights. However, we will furnish greater height partitions upon request. Doors are in multiples of 2 inches in width and of heights to correspond with the panels.

CONSTRUCTION AND FINISH

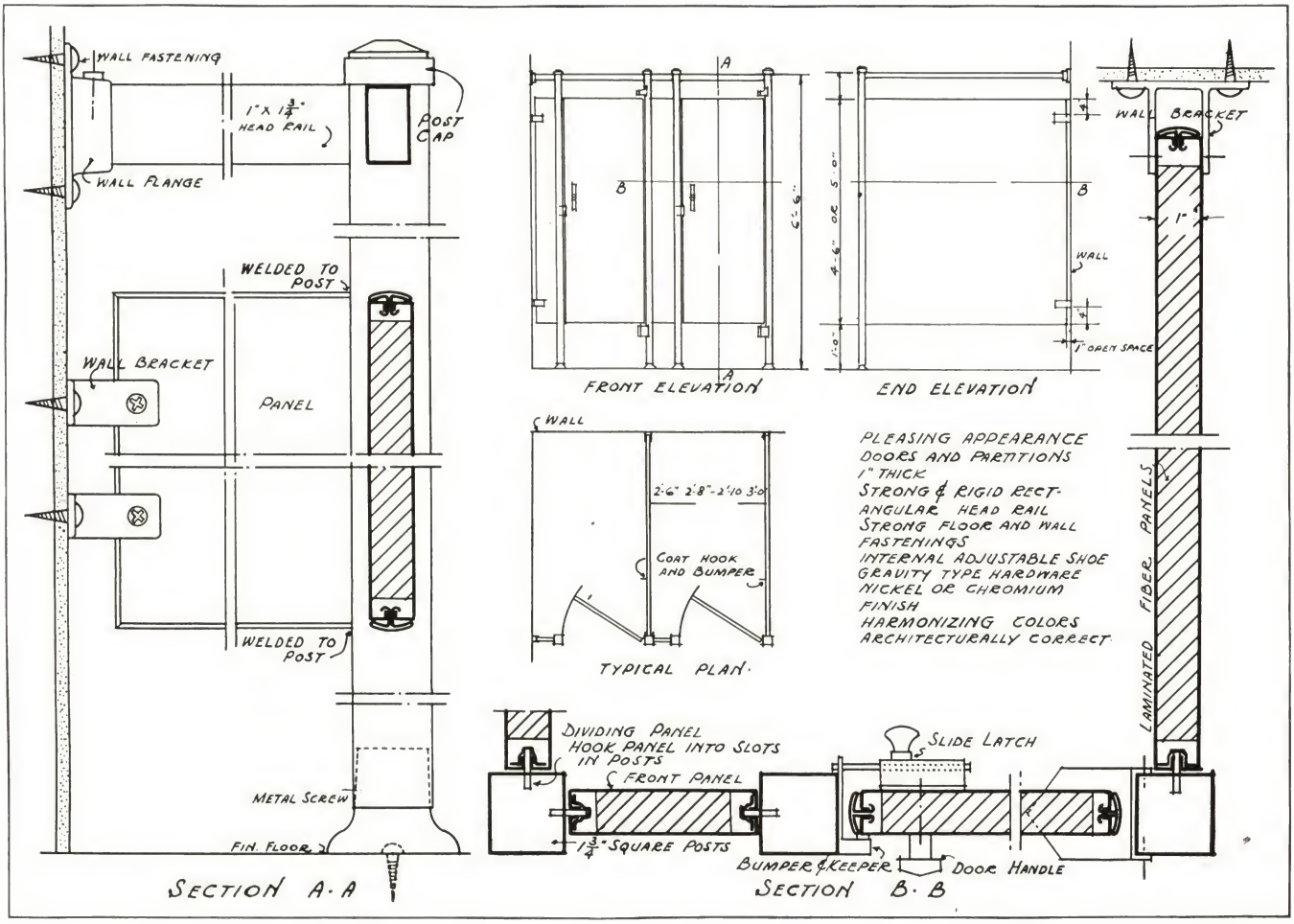
METAL FLUSH is extremely strong, and consists of two sheets of 20-gauge steel formed at the edges and cemented under pressure to a laminated fibre core. This is bound with an interlocking mould, welded at all four corners and interlocked to each post with concealed hooks. Posts are 1¾ in. square tubing and are welded top and bottom to partition panel. Doors are of the same construction as panels, and are further reinforced for the attractive modernistic hardware. The design of all hardware is in complete harmony. *METAL FLUSH* Compartments are available in other non-ferrous metals, such as aluminum, at increased cost. This material is also manufactured to special specifications for Federal work.

Furnished in standard Olive Green or Gray baked enamel. Other colors at slight additional cost.



Typical Installation—Mills *METAL FLUSH* Partitions

Dia. XI. Details of Mills *METAL FLUSH* Partitions

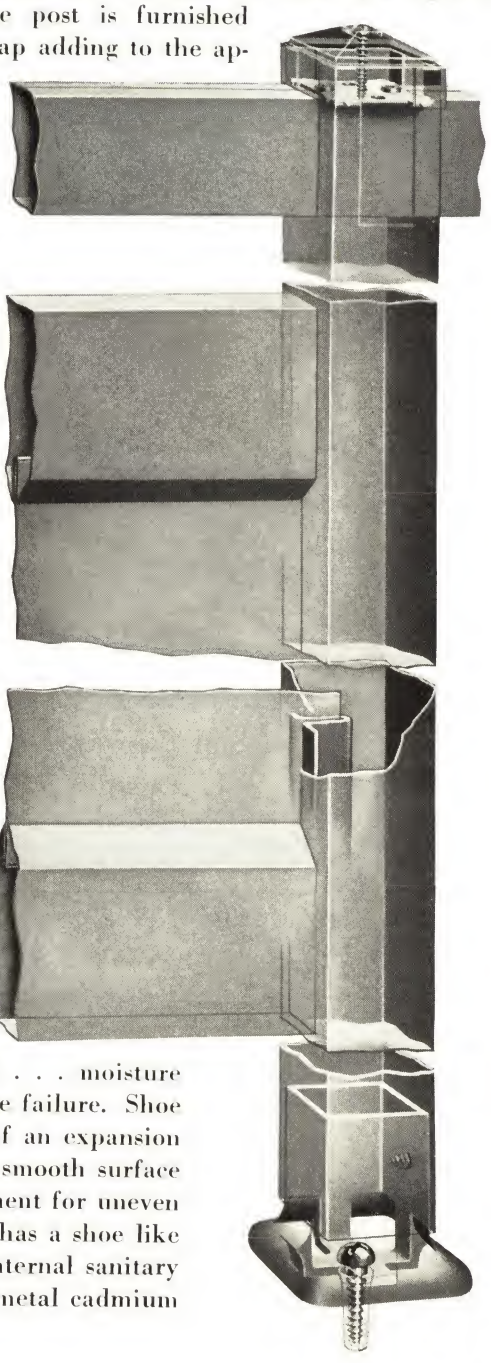




MILLS *CHALLENGER* TOILET COMPARTMENTS—PANEL TYPE

Here is a newly perfected design for toilet compartments, dressing rooms and similar uses, which truly challenges comparison . . . in its attractiveness of appearance, in the perfection of every detail of its engineering, in the completeness with which it meets every sanitary requirement, in its adaptability to wide variations of space and arrangement, and in its sturdiness of construction. It successfully challenges comparison on a basis of desirability, efficiency and utility . . . added to this, its simplicity and ease of installation, and its freedom from maintenance expense stamp it as incomparable in dollar value.

Partitions are securely braced by a 1 x 1¾ in. headrail running *THROUGH* the post adding structural strength and making a rigid installation. A knock-out type post is furnished topped with an ornamental cap adding to the appearance of the compartment. A patented type *TENSION AND COMPRESSION* clip grips the headrail securely in place.



Posts are steel tubing 1¾ in. square . . . sturdy with flat sanitary surfaces.

Panels are held rigidly to the 1¾ in. square perfectly smooth sanitary post by extending the panel sheet into the post . . . welding it into a stensor locking strip . . . wedging the top and bottom rails tightly between the posts—automatically locking the panel sheet into rigid tension eliminating any possibility of rattle or belly. The panel is fabricated with a 3 in. rail at top and bottom, with no open joints to catch dirt.

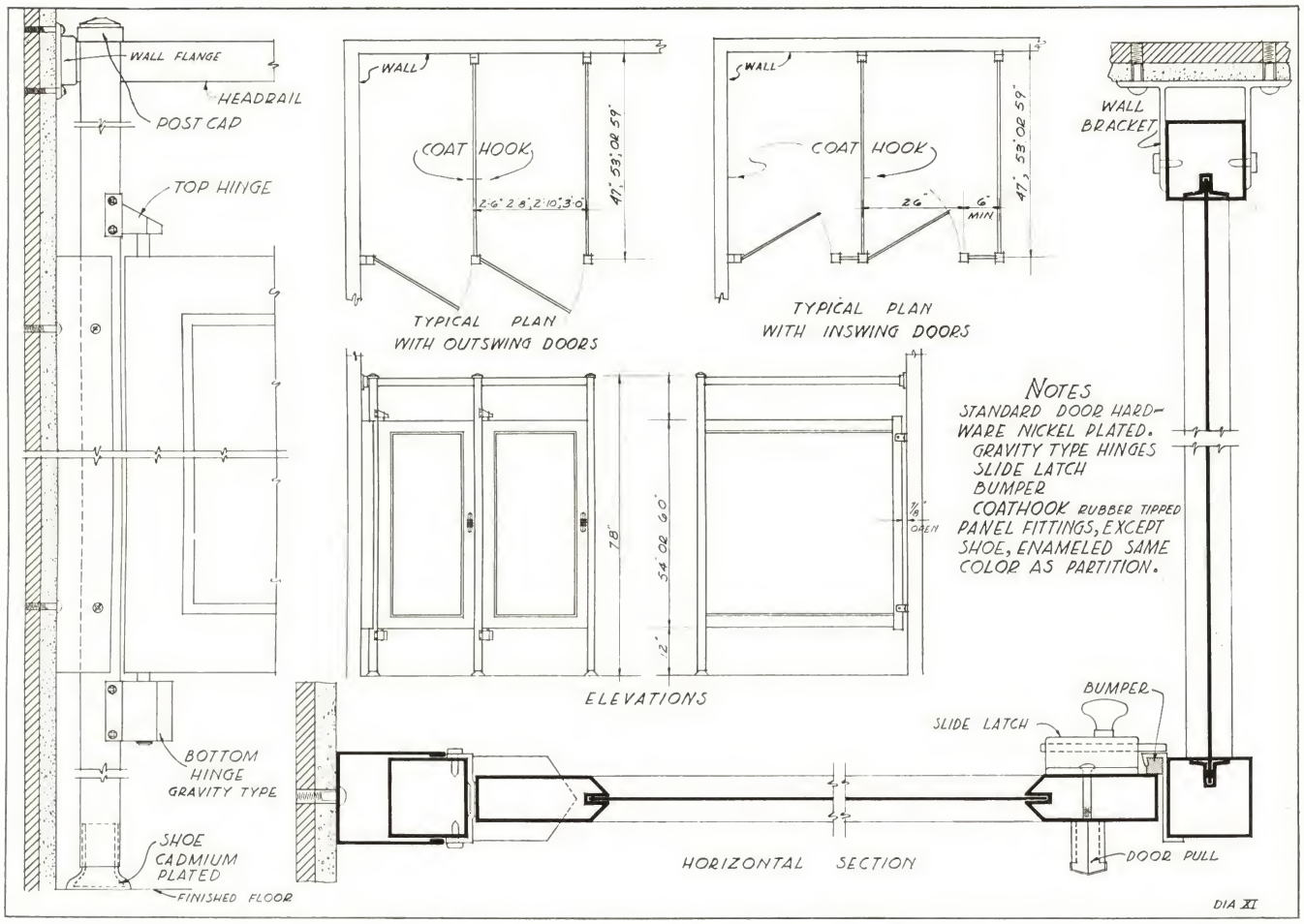
Panels and doors are fabricated from 16- to 18-gauge furniture steel in strict accordance with Simplified Practice Recommendation R101-29 of the Department of Commerce Bureau of Standards . . . standard in either 54 in. or 60 in. height . . . set 12 in. off the floor, the headrail bracing in all cases being 6 ft. 6 in. off the finished floor.

Panel sheets are locked into the rail rigidly so as to prevent rattling of the panel sheet and assuring a tight solid unit.



Doors are made with a 3 in. rail reinforced and welded at all corners and carried entirely around the door with a sanitary plain mould.

The shoe fits inside the post . . . moisture positively cannot lodge and cause failure. Shoe attaches to the floor by means of an expansion bolt inside the shoe . . . perfect smooth surface to the floor . . . two-inch adjustment for uneven floors. No other toilet partition has a shoe like this. A valuable feature! The internal sanitary adjustable post shoes are white metal cadmium plated.



Dia. XII. Details of Mills *CHALLENGER* Partitions

DETAILED SPECIFICATIONS (IMPROVED)

GENERAL—All toilet partitions and doors, entrance screens and dressing rooms shall be *"THE CHALLENGER"* panel type construction as manufactured by THE MILLS COMPANY, 965 Wayside Road, Cleveland, Ohio.

PANELS AND POSTS—All partition panels shall be made with 3 in. x 1 in. sanitary rail at top and bottom and with 1¾ in. square, perfectly smooth, sanitary post front and rear. Panel sheet shall extend into the post and be welded to a tensor locking strip. Top and bottom rails shall be wedged between front and back posts and held in place by welding to hold the panel sheet in tension and eliminating rattle. Front 1¾ in. square sanitary post shall extend to the floor approximately 12 in. below the bottom panel rail. Front post shall extend above the top panel rail to the headrail approximately 6 ft. 6 in. from the floor. Rear 1¾ in. square sanitary post shall extend just above and below the top and bottom panel rails. Gauges to be in accordance with the recommendations of the U. S. Bureau of Standards, Simplified Practice Recommendations R101-29. In panels 54 in. x 54 in. and larger, panel sheets shall be 16-gauge (.0613). In panels smaller than 54 in. x 54 in. and doors, panel sheets shall be 18-gauge (0.490).

FITTINGS—The front posts of panels are to be rigidly secured to the floor by means of an INTERNAL white metal shoe heavily cadmium plated to prevent rusting. Shoe shall permit of adjustment for uneven floors and shall be tightly fastened to the floor without exposed fastenings. Panels shall be attached to the wall by means of two stirrup brackets set approximately 4 in. from the top and bottom of the rear panel post and shall keep the panel approximately 1 in. away from the wall. These brackets shall be fastened to the wall at 2 places and be bolted to the rear panel post. They shall be finished to match the partition.

HEADRAIL—Partitions when erected shall be securely braced by a 1 in. x 1¾ in. perfectly smooth rectangular tubular headrail. This headrail shall be inserted into or run through the post, which shall be furnished with a four-way knock-out type receptor. A tension and compression type clip shall grip the headrail securely in place. The post shall be topped with slip on post cap fastened with a recessed head screw and finished to match the panels.

DOORS—All doors shall be made with 3 in. x 1 in. sanitary rails on all four sides. Rails shall be designed to grip the panel sheet and prevent rattles. Rails shall be mitered and reinforced at all corners and welded into one solid unit. All welds shall be dressed before finish is applied. Doors shall be properly reinforced for hardware.

HARDWARE—Doors shall be equipped with brass nickel plated gravity hinges of modern design with concealed hardened ball-bearing roller running on a hardened steel cam. Hinges are to be adjustable to permit doors to rest at any desired angle. Bumper and latch are to be of brass nickel plated. Each outswinging door is to be equipped with a black bakelite pull of modern design inlaid with chrome-plated stripes. Pull is to be through-bolted to the latch. All hardware shall be fastened with recessed head-tamperproof bolts or screws.

UTILITY SPACE—Where utility spaces are clearly indicated on the plans to be of metal, they shall be furnished in semi-flush construction of single-sheet design to completely cover the utility space.

FINISH—All material shall be thoroughly cleaned of oil and grease primed inside and out with one dip coat baked on. Finish coat shall be green or gray sprayed on and baked separately.

MILLS METAL HOSPITAL CUBICLES



Fig. 370. An installation of Mills Hospital Cubicles in an industrial dispensary

Mills Hospital Cubicles have the same features as the Challenger or Metal Flush Compartments or Flush Pilaster partitions as illustrated in Fig. 466.

Mills Hospital Cubicles are especially designed for hospital ward service and give the ward patient a feeling of privacy and satisfaction so necessary to the welfare of the individual. They are constructed to present a minimum of projections to catch dirt and dust, to permit easy cleaning and to resist odors and stains.

Mills Hospital Cubicles are a definite control of contagion and infection. They are light and permit easy circulation of air and create quiet restful surroundings. They are rigid in construction with or without headrail, and can be set against the wall or erected free standing, as desired.



Fig. 347. Portable Type Hospital Screen

In depth, they may be obtained in any multiple of six inches within a minimum of 5 ft. and a maximum size of 10 ft.

These cubicles are exceptionally easy to glaze, it being only necessary to remove the glass stops from either side to set in the glass. The stops are held in place by means of concealed fastenings.

Finished standard in lustrous gray enamel, they aid in the cleanly appearance as well as the actual sanitation of wards and semi-private rooms.

Using Mills Metal Construction, they are as permanent as the building itself, yet easily and quickly installed.

Designed so as to permit easy rearrangement when desired.



Fig. 466. Flush Pilaster Type Cubicle

Suitable for any size ward, room, hallway or corridor.

Built of standard sections on a quantity production basis that ensures uniformity with minimum costs.

The sections are standard with the metal panels and glass divided as your particular needs may require.

The glass extends above the metal panel to the necessary height and may be either clear, reinforced or translucent as preferred.

Additional privacy may be obtained with curtains along the sides as well as in front.

The services of our Engineering Department are available entirely without obligation in both planning and estimating on the use of Mills Hospital Cubicles.

SPECIFICATIONS FOR MILLS METAL HOSPITAL CUBICLES

GENERAL

All cubicles and screens shall be "The Challenger" or "Metal Flush" construction as manufactured by THE MILLS COMPANY, 965 Wayside Rd., Cleveland, Ohio.

POSTS

Challenger: Upright posts shall be 1¾ in. square with perfectly flat sanitary sides. Front 1¾ in. square sanitary post shall extend to the floor approximately 12 in. below the bottom panel rail. Rear 1¾ in. square sanitary post shall extend just above and below the top and bottom panel rails. On panels 5 ft. 0 in. in length or longer an intermediate post of identical construction to the front sanitary post shall be built in to maintain rigidity in the cubicles.

Metal Flush: Upright post shall be 1¾ in. square with flat sanitary sides and shall be interlocked and welded to panels to give an integral rigid cubicle unit.

BOTTOM PANEL

Challenger: All lower panels shall be made with 3 in. x 1 in. flat sanitary rail at top and bottom. Panel Sheet shall extend into the post and be welded to a Tensor Locking Strip. Top and bottom rails shall be wedged between front and back posts and held in place by welding to hold the panel sheet in tension and eliminating rattle. Gauges to be in accordance with the recommendations of the U. S. Bureau of Standards, Simplified Practice Recommendations R101-29.

Metal Flush: All bottom cubicle panels shall be 1 in. thick and shall be made of two sheets of 22-gauge furniture steel spaced and insulated with a laminated corrugated fibre filler, cemented to their inner surfaces with a rust-resisting binder. To assure uniform adhesion, all panels shall stand under pressure 24 hours.

TOP PANELS

Top panel to be of glass, either D.S.A. Polished Plate, Polished Plate Wire, or Rough Wire as selected. Glass stops to be of steel moulding and held in place by means of concealed fastenings.

FITTINGS

All posts extending to the floor shall be rigidly secured by means of an INTERNAL white metal shoe heavily Cadmium plated to prevent rusting. Shoe shall permit of adjustment for uneven floors and shall be tightly fastened to the floor without exposed fastenings. Panels shall be attached to the wall by means of two stirrup brackets and shall keep the panel approximately 1 in. away from the wall. These brackets fastened to the wall at two places. All fastenings shall be recessed head temper-proof type.

HEADRAIL

Cubicles when erected shall be securely braced by a 1 in. x 1¾ in. perfectly rectangular tubular headrail. This headrail shall be inserted into or run through the post which shall be furnished with a four-way knock-out type receptor. A tension and compression type clip shall grip the headrail securely in place. The post shall be topped with slip on post cap fastened with a recessed head screw and finished to match the panels, and returned to the wall at end panels. Where curtains are used, headrail bracing shall act as curtain rod. When panel length is 5 ft. 0 in. or over a headrail shall be furnished from the front post to the wall at each cubicle.

FINISH

All material shall be thoroughly cleaned and given a heavy coat of rust resisting primer and baked. Two finish coats of high grade enamel green or gray shall be sprayed on and baked separately.

MILLS *ALL-METAL* UNIT SHOWERS

DISTINCTIVE FEATURES OF CONSTRUCTION

The Mills *ALL-METAL* Unit Shower is an absolutely water-tight and leakproof, self-contained unit with its own rustproof receptor. The *ALL-METAL* Shower will not chip, sag or crack due to vibration or settling of the building or from other causes. Mills Showers will not absorb odors . . . they are absolutely sanitary and are easy to keep clean.



Fig. 255. Mills All-Metal Unit Shower

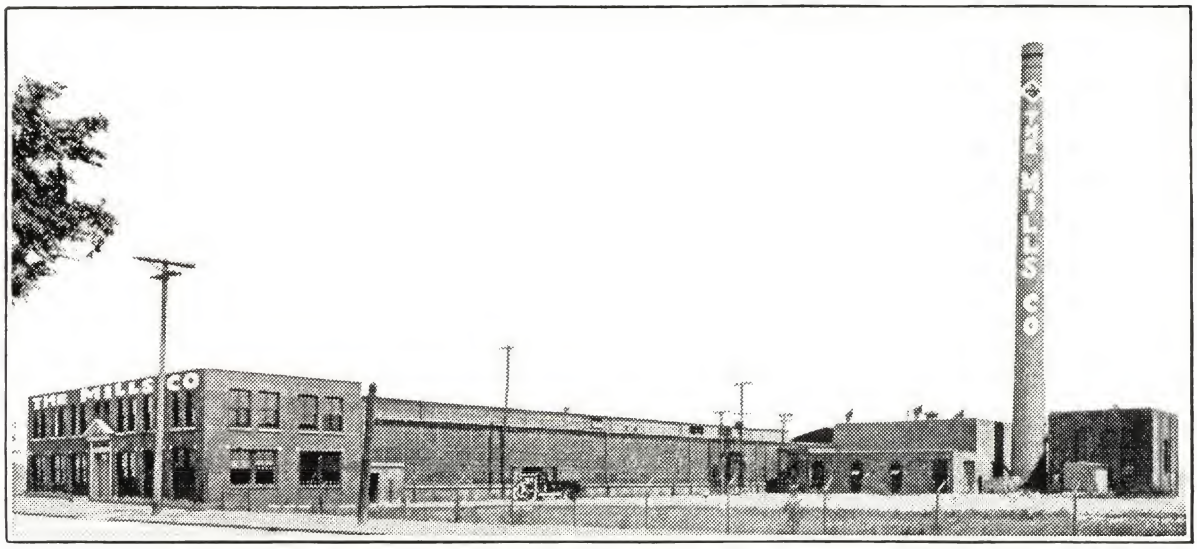
SIZES AND INSTALLATION DETAILS

Standard wall height is 84 in. to extend beyond the usual shower head height. Stock showers are 36x36 in. in cross-section. Showers 30, 32, 34 or 36 in. deep or wide are available in any combination. Corners are of an interlocking water-tight construction. Water pipes leading to the shower head are brought over the top, through the back, or from either side. The 4-in. removable brass drain is secured with water-tight gaskets.

Mills *ALL-METAL* Unit Showers are shipped knocked down—with curtain rod and fasteners—complete with instructions for their erection in minimum space. Specially prepared marble, terrazzo, concrete tile, or waterproof wood floors are not required. An ordinary, un-waterproofed floor furnishes sufficient support.

FINISH

ALL-METAL Shower Receptors are cadmium plated by the Udylite process (Navy Specifications) for permanent rustproofing. Walls are finished in Mills Standard grey or olive green, or in other colors at slight extra cost—also furnished in aluminum or other special metals. Shower head, valve controls, soap dishes and curtains can be furnished, if desired, at slight extra cost.



Over 50,000 Square Feet of Floor Space Devoted Exclusively to the Production of Metal Partitions

"A MILLS METAL PARTITION FOR EVERY PURPOSE"

REPRESENTATIVES

ALABAMA
Birmingham: C. S. Caldwell, 1910 First Ave.
ARIZONA
Phoenix: Steffy Sales Agency, 830 N. Central Ave.
ARKANSAS
Little Rock: Capitol Steel Co., 329 Gazette Bldg.
CALIFORNIA
Fresno: Healey & Popovich, 1911 Merced St.
Huntington Park (Los Angeles): B. L. Wilcox, 2071 Laura St.
San Francisco: Munthe Equipment Co., 604 Mission St.
COLORADO
Denver: Ideal Builders Service, 1163 California St.
CONNECTICUT
Bridgeport: Lindquist Hardware Co., 383 Fairfield Ave.
Hartford: W. E. Kelsey, 8½ Ford St.
DELAWARE
See Philadelphia, Pa.
DISTRICT OF COLUMBIA
Washington: James A. Cassidy, Chandler Bldg., 1427 Eye St.
Harry Schnabel, 4316 15th St.
FLORIDA
Jacksonville: George P. Coyle, 418 Park St.
Miami: Paul E. Shipe, 1750 N. Miami.
St. Petersburg: E. L. March, 303 Third Ave. N.
GEORGIA
Atlanta: Luke Seawell, 152 Nassau St. P. O. Box 1353
IDAHO
Boise: Baxter Foundry and Machine Works, Capital Blvd. P. O. Box 1016.
ILLINOIS
Chicago: Struck Equipment and Supply Corp., Room 418, 160 N. LaSalle St.
Peoria: Builders Steel Products Co., 330 Central National Bank Bldg.
Rockford: Ornamental Iron Division All Steel Welded Truck Corp., 1149 Railroad Ave.
INDIANA
Fort Wayne: Don White, 2300 Taylor St.
Indianapolis: John J. Tuite, 841 Architects and Builders Bldg.
IOWA
Davenport: Builders Service Co., 203 Kresge Bldg.
Des Moines: Perkins Supply & Fuel Service, 10th and Vine Sts.
Dubuque: Baumgartner Sales and Service, 973 Main St.
Waterloo: C. M. Berkley Hardware, 302 W. 4th St.
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Topeka: Ray Anderson, 622 New England Bldg.
Wichita: Grabendike Engineering Sales Co., P. O. Box 333
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Lexington: Faulkner Builders Supply Co., 585 E. 3rd St.
Louisville: Thomas L. Barret, 712 W. Main St.
LOUISIANA
New Orleans: J. R. Quaid, 808 Perdido St.
Shreveport: Davenport and Allen, 503 Giddens Lane Bldg.
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MARYLAND
Baltimore: Wm. E. Gambrill Co., 213 East St.
MASSACHUSETTS
Boston: Stel-Wod Engineering Co., Room 508, 88 Broad St.
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Detroit: Building Accessories Co., 199 Tennyson Ave.
Grand Rapids: Michigan Builders Material & Supply Co., 118½ Pearl St. N. W.
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St. Paul: R. E. Stanton & Co., 786 Eustis St.
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Gulfport: Hugh Bourgeois, 500 Hewes Bldg.
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Omaha: Kraus & Trustin, 636 Paxton Bldg., 16th and Farnam Sts.
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See Philadelphia, lower section.
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Albany: United Roofing Co., 425 Orange St.
Buffalo: James M. Hawkins Co., 320 Jackson Bldg.
New York: Mills Metal Partition Co., 11 West 42nd St.
Rochester: E. W. Maurer, 703 Temple Bldg.
Syracuse: F. J. Ludwick, 1126 Chimes Bldg.
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Chapel Hill: S. H. Basnight, P. O. Box 943, 104 E. Franklin.
Charlotte: R. R. Robertson, 1201 Commercial Bank Bldg., P. O. Box 56.
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Fargo: Northern School Supply Co., P. O. Box 1571.
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Cincinnati: Central Building Products Co., 622 Broadway.
Cleveland: Mills Sales Co., Plymouth Bldg.
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Dayton: A. B. Luther Co., 900 Albany St.
Portsmouth: Earl C. Hayes & Co., P. O. Box 509.
Toledo: Jos. P. Kessler Co., 1152 E. Broadway, P. O. Box 83.
Youngstown: L. D. Sheffield, 144 W. Wood St.
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Tulsa: Building Specialties Co., 421 Philcade Bldg.
OREGON
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PENNSYLVANIA
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Harrisburg: Fred O. Smith, P. O. Box 728.
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Philadelphia: M. A. Webster, 1600 Arch Street.
Pittsburgh: James Hood Miller, 1214 Chamber of Commerce Bldg.
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Chattanooga:: Commercial Stationery & Supply Co., 737 Cherry St.
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Nashville: Kerrigan Ornamental Iron Works, 209 N. 2nd St.
TEXAS
Amarillo: Forrest R. Barnes, 210 W. 10th St.
Dallas: Metal Products Co., 406 Linz Bldg.
El Paso: Neff Stiles Co.
Houston: Coastal Sales Agency, 523 First National Bank Bldg.
San Angelo: San Angelo Building Material Co., 808 Western Reserve Life Bldg.
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Salt Lake City: Manufacturers Specialties Co., Exchange Bldg.
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Milwaukee: J. R. Petley Co., 759 N. Milwaukee St.
WYOMING
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FOREIGN REPRESENTATIVES

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Haifi: Hans Praunsnitz, P. O. Box 678.

Philippines
Manila: Charter Brunner, P. O. Box 1201, 176 Calle Juan Luna.

Columbia, S. A.
Bogota: P. Porta, Calle 25 No. 8-23

NATIONAL STEEL PARTITION CO., INC.

TELEPHONE
Watkins 9-3390-1

Manufacturers of Steel Office Partitions
43 West 17th Street, NEW YORK, N. Y.

BOSTON, MASS.
NEWARK, N. J.
WASHINGTON, D. C
HARRISBURG, PA.
PHILADELPHIA, PA.
PITTSBURGH, PA.
CINCINNATI, OHIO
DETROIT, MICH.



Appellate Division Supreme Court, Brooklyn, N. Y.



New York State Journal of Medicine, New York, N. Y.

The NATIONAL Type SM Partition has been designed to meet all the problems of modern office planning. It is attractive in appearance, modern in line, flexible and sturdy, yet retains all its sound deadening and fire resisting features. This partition is the economic solution to all problems of space division.

SPECIFICATIONS

Panels

Consist of two 20-gauge patent leveled steel sheets with a corrugated filler between, for sound deadening.

Formed Members

Rails—20-gauge rolled steel, snap-on type, for glazing and accessibility to electric wiring.

Base—20-gauge, conforming in design with rails and pilaster—hollow metal type.

Cornice—18-gauge, one-piece, designed for strength.

Verticals—16- or 18-gauge, designed for rigidity, pierced to receive rail clips for locking panel into one unit.

Pilasters—18-gauge, snap-on type, designed to conform with base and rails.

Mop Strip—20-gauge, self-adjusting for uneven floor conditions.

Doors

Hollow metal, 1¾ in. thick, with full glass panel. Two-panel or special doors available.

End Fillers

Two 20-gauge full length steel sheets fastened to wall channel.

Top Fillers

Double mineral board scribed to ceiling.

Hardware

Schlage cylinder lock and a pair of 4½ x 4½ in. ball-bearing hinges. Special hardware at extra cost.

Glazing

Snap-on type rail, ⅛-in. clear or obscure glass equal to Syenite is standard.

Finish

All standard colors are available in eggshell or high lustre finish. Grained and metallic finishes supplied if required.

Standard Units

Available in multiples of 10 in. in width, and in 7 ft. 2 in., 8 ft. 6 in., 9 ft. 3 in., 10 ft. 3 in. and 12 ft. 9 in. in height. Sections are interchangeable with other units or door units of the same width.

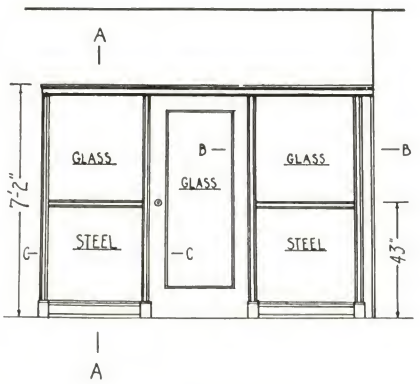
Note: All steel used is cold rolled patent leveled.

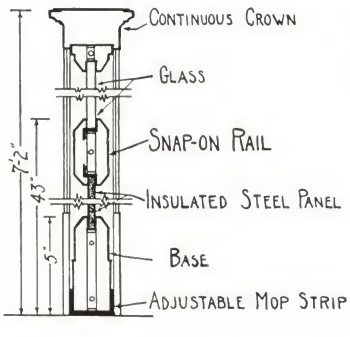
Our Construction Department offers a complete information service for office and factory planning, without obligation.

FLUSH TYPE PARTITION

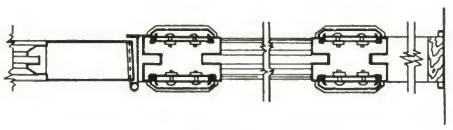
A distinctive partition, **T**ype FM, is now available. Details may be obtained on request.

TYPE SM DETAILS

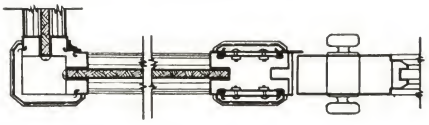




SECTION A-A



SECTION B-B



SECTION C-C

W. & J. SLOANE

PARTITION AND CONTRACT DIVISION

575 Fifth Avenue, NEW YORK, N. Y.

REPRESENTATIVES IN PRINCIPAL CITIES

For Sloane Mantels and Telephone Book Racks, see File Index

SLOANE MOVABLE OFFICE PARTITIONS

W. & J. SLOANE has set the standard for interior furnishings since 1843. Because of our extensive facilities and the experience acquired in the manufacture of fine furniture, we are able to make partitions at competitive prices which have the added distinction and care found in all Sloane products.



Conference Room in the Traditional Manner

Whether your office is in a bank or in a factory—you will find everything you need for an appropriate business setting . . . partitions, bank screens, wall paneling, office furniture, draperies, carpets, linoleum, special woodwork.

Our experienced engineers and decorators are always glad to co-operate with you in solving office division problems. The chances are that such sub-dividing problems can be solved with our movable partitions.

Sloane Office Partitions are available in several types for sub-dividing virtually all classes of buildings. Immediate shipments are made from large stocks constantly on hand. All units are sectional, fastened together with concealed screws, and can be taken down and re-erected by any local carpenter, without detracting from the appearance of original installation. Experienced representatives in principal cities. For further information, please address W. & J. SLOANE, Partition Division.

SNEAD & Company

Founded 1849



Steel

MOBILWALLS

SOUND PROOFED AND SOUND ABSORBING

Ninety Years of Specialized Experience in Architectural Metal Products

SNEAD & COMPANY FOUNDED IN 1849

Snead & Company have been engaged in the fabrication of metal products for ninety years. Executives and principal employees have been brought up in the business, assuring that excellent quality and workmanship which only years of experience can produce.

SNEAD MOBILWALLS AND PARTITIONS

Modern developments in the design of Snead Mobilwalls have resulted in a product which offers all the advantages of the fixed masonry wall, with the additional advantage and economy of re-use and rapid rearrangement.

New high standards of sound insulation and fireproofing are offered. All parts are functional. Lines are straight and simple. Exposed parts are roller-die processed. Vertical and horizontal members are designed to facilitate wiring or re-wiring. A wide selection of finishes to match any decorative scheme is available.

FUTURE SERVICE ASSURED

The management and ownership of Snead & Company have been continuous during its entire ninety years of corporate life, assuring a permanent source of supply for future requirements and replacement parts.

QUICK DELIVERY FROM STOCK

A large stock of standard units is always kept on hand ready to be finished as required and shipped on short notice.

SNEAD PLANNING SERVICE

The Snead staff of experienced engineers is available for consultation, the development of efficient layouts, and the creation of special designs to meet individual requirements to assure the most practical and efficient arrangement of available space—all without obligation.



Fig. 1. Corridor built of Snead Mobilwalls Type SF-3, finished to match light cream building walls. Doors green. Base, black japan.

SNEAD & COMPANY

MAIN OFFICE—Jersey City, N. J.
NEW YORK OFFICE—205 East 42nd Street
FACTORIES—Jersey City, N. J. and Orange, Va.

OTHER OFFICES

Snead & Company, 164 Newbury Street, Boston, Mass.
Snead & Company, 161 E. Erie Street, Chicago, Ill.
Agents in all principal cities

Snead Iron Works, Ltd., Toronto, Canada.
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Forges de Strasbourg, 160 Rue Montmartre, Paris 2, France.
Etablissement G. Moens, 23 Chaussee de Charles Roi, Brussels, Belgium.
Parma Antonio & Figli, Saronno, Italy.
Mannesmann Stahlblechbau, A. G., Schicklerstrasse 7, Berlin, C 2, Germany.
A/S Viig, Vraalsen & A. P. Foss, Hasleveien, Oslo, Norway.
Precisian Engineering Company, Wellington, New Zealand.
Wormald Brothers, Ltd., Young Street, Waterloo, Australia.

Snead Mobilwalls Keep Pace With Modern Building Construction

PERMANENT YET REMOVABLE

Snead Soundproof Mobilwalls meet the demand of architects and owners for a practical, movable, re-usable wall which offers the privacy, permanency and soundproofness of a masonry wall, not heretofore found in ordinary steel partitions. It is no longer a mere adaptation of the wood partition, but frankly utilizes all the advantages of steel construction.

RE-USABLE WITHOUT WASTE

Several types of Mobilwalls are offered which combine the general characteristics of fixed masonry walls with instant mobility. Panels and door units of the same size and type are interchangeable. Snead Mobilwalls are easily and economically erected, altered or rearranged whether of all steel or steel and glass. These walls reduce to a minimum the number of operations and the time required for erection. Changes can be made overnight without disturbing the routine of the office. There is no muss or dust. All units are 100% re-usable.

As field assembly is wholly accomplished by means of internal connections, the taking down and re-erection entail no danger of marring outside wall finish. There are no exposed screws or bolts.

SOUNDPROOFING AS DESIRED

Quiet in offices increases the efficiency of the occupants. The same degree of privacy is not necessary for all conditions. Different degrees of soundproofing to meet practically any requirement are available among the various types of Snead Mobilwalls.

OTHER GENERAL FEATURES

Units are locked in place by positive, self-aligning internal one-piece link plates resulting in rigid and true construction. These link plates also receive "snap-on" pilaster covers.

All members are made of best furniture grade steel, roller die-processed, giving uniformity, sharp definition of arrises, snug fit and cabinet work appearance.

FINISHES

Formerly masonry walls with abutting movable partitions invariably resulted in a two-color office. A wide range of light colors to match plastered wall finishes are now available if desired. Any other finishes are obtainable, including natural wood grain and fabric or wood veneer coverings of various kinds.



Fig. 2. Snead Mobilwall Type SF-3, finished in warm light gray. Black base.

Snead Mobilwalls are a Profitable Investment



Fig. 3. Snead Mobilwalls Type SF-3 in light buff, with doors in dark green, both matching building finishes. Base, black japan.

SNEAD MOBILWALLS COST LESS

While the question of "How much will it cost?" is of prime interest to the owner and the building operator, there are a number of factors which must be considered in evaluating the cost of walls and partitions.

These factors include:

1. Comparative First Cost and Cost of Making Changes—Snead Mobilwalls pay for themselves after the first alteration, and still retain their original investment value for future use and alterations, as is shown in the following analysis.

These figures are based upon costs from building contractors and operators for typical installations with a door, transom, glass and hardware.

	Masonry Wall	Snead Mobilwall
Original cost of wall	$201.00	$310.00
Cost of taking down the wall	29.00	11.00
Labor and new material cost to re-erect wall	125.00	38.00
Total invested after first change	$355.00	$359.00
The salvage value at this point is	76.00	300.00
Unrecoverable capital loss	$279.00	$ 59.00
Every subsequent change will cost	$154.00	$ 49.00

How many times will you change your office arrangement?

2. Maintenance Costs—Snead Mobilwalls cost less to maintain. The durable baked-enamel finishes are practically indestructible. The finish is not marred or parts injured in alterations. Cleaning costs are cut to a minimum as there are no dust-catching projections or ledges.

3. Other Generally Unconsidered Costs — When masonry walls are torn down and rebuilt the cost is far greater than the money actually spent for labor and materials, viz.,

(a) Space lost to use during the alteration.

(b) Loss due to disturbance of employees and general interruption of business.

(c) Cleaning expense and damage to typewriters and other costly business machines caused by dust, dirt and dampness incidental to removal and re-erection of old-fashioned masonry walls.

(d) The unknown cost occasioned by not making changes which should be made, but are not made because of the hesitancy of facing the difficulty of making them with masonry walls.

Each Rearrangement Pays Another Dividend

4. Permanence of Investment and Design — Snead Mobilwalls are modern, but not modernistic. They are designed and built on simple, straight functional lines, to harmonize with masonry walls and will not be out-moded in a few years. They are a real investment.

5. Saving of Time—In a few hours, overnight if necessary, Snead Mobilwalls can be erected or altered to suit the present needs of the business. Snead construction permits the easy removal of panels without disturbing adjacent units or top filler.

EASILY ERECTED—INTERCHANGEABLE

The simplicity of construction and ease of erection are outstanding features of Snead Mobilwalls. The main units are factory assembled. These units are locked together in the field with Snead link plates.

A door unit can be changed or re-located without dirt or muss in less than two hours. Snead precision construction makes this possible.

In the illustrations at the bottom of the page, note the 45° angle edges of the units and the method by which the link plates securely anchor the units and hold them rigid. This 45° feature permits three-way and four-way arrangements and corners to be made without the use of applied mouldings.

MINIMUM OF PARTS TO HANDLE AND STOCK

A multiplicity of loose parts increases erection costs and leads to inevitable losses of parts as well as time and money.

1. Snead construction requires no separate post members.
2. Only six parts are required for a complete unit; panel section, pilaster cover, cornice trim, cornice reinforcement, base cover and link plate.

CONCEALED WIRING

Wire-way base and all vertical and horizontal members are designed to carry light, telephone and annunciator wiring. Switches and outlets are readily installed in base and pilasters, which have removable covers for easy accessibility.

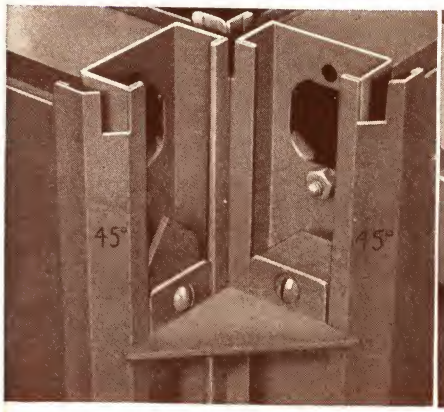


Fig. 6A
Typical corner condition for all SF and RF Mobilwalls.

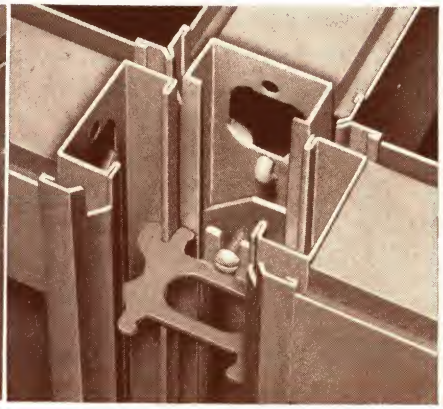


Fig. 6B. Three-way intersection, all RF and SF types. Note wireway chases and 45° panel verticals.

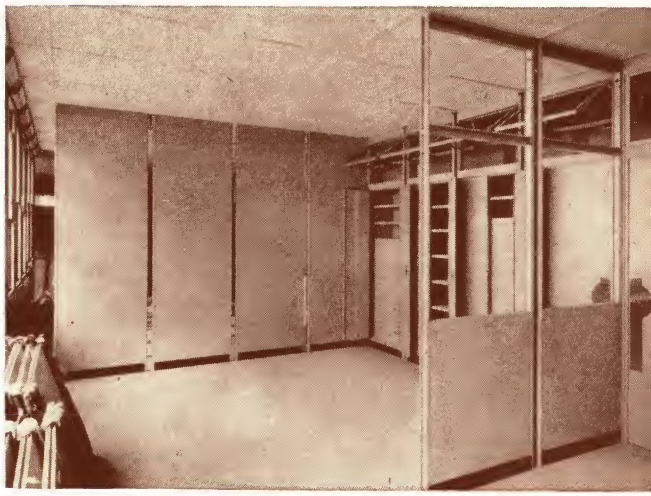


Fig. 4. Litter and dirt entirely absent during erection of Snead Mobilwalls Type SF-3.



Fig. 5. Snead Mobilwalls Type RF-1 being assembled in field. Note few parts required. Fig. 7, below, shows complete room.



Fig. 7. Same room as above, after completion. Finish is grained walnut.



Fig. 8. Assuring privacy and freedom from corridor noises, Snead Mobilwall Type RF-1 with dado at 4'-0" height and light buff finish above.

Snead Mobilwalls Reduce

GLOSSARY OF TERMS

NOISE: Any undesired sound.

RESIDUAL NOISE: All noise within an enclosure, originating from outside sources, such as street, building and vibration noises.

TONE AND PITCH: Frequency of vibrations in cycles per second.

DECIBEL: Unit of sound intensity.

Comfortable quiet (40 to 55 decibels) is necessary for efficient work. Distracting noise is always present. Snead Soundproof Mobilwalls, used to isolate a noise source, will prevent passage of 40 to 50 decibels of such noise. THIS REDUCTION IS GREATER THAN IS OBTAINED WITH A TILE AND PLASTER WALL 5" to 6" IN THICKNESS.

We are principally concerned with the isolation of distracting office noises (business machine and typewriter operation, buzz of conversation, the use of miscellaneous equipment, such as files, etc.), or their reduction to the Quiet Comfortable Range. This "quiet range," however, approximates most closely the range of room "residual noise" always present to the extent of 40 to 45 decibels. To reduce this residual or room noise level, sound absorbing material within the room is used. Snead Mobilwalls equipped with sound absorbing panels are furnished for this purpose.

Snead Soundproof Mobilwalls, in all cases, will lower the outside office sound level to that of the "residual" or room noise. No other wall can do more. The change in noise levels made possible by Snead Mobilwalls is shown in the accompanying "Table of Familiar Sounds".

For clerks and executives a reduction of noise throughout an eight hour day by as little as five decibels is a very profitable investment. Outside disturbances cause ill temper and nerve strain, which materially reduce efficiency. Actual records show that with noise source isolated, office errors have been reduced by as much as 50 percent.

FEATURES OF SNEAD SOUNDPROOF MOBILWALLS

Panels, posts, rails and top filler packed with inorganic insulating material, entire periphery sealed.

Door jambs equipped with felt strikes, automatic compression felt seals built into the door bottoms.

Double glazing where glass is used to give the degree of soundproofing desired.

TABLE OF FAMILIAR NOISES WITH THEIR INTENSITY SHOWN IN DECIBELS

		DECIBELS	SOURCE OF NOISE
	Deafening Noise Range	120	Threshold of Painful Feeling
		110	Artillery Firing
			Airplane Motor
		100	Subway Train
		90	Elevated Train from Street
SNEAD MOBILWALLS Reduce Noise in This Range Down to THIS LEVEL →	Distracting Office Noise Range	85	Business and Tabulating Machines
		80	
		75	
		70	Stenographic Room
		65	
		60	Office of 4 to 6 People
	Very Quiet Comfortable Range, Also Range of Residual Noise	55	Average Private Office
		55	Ordinary Conversation 3 ft. from Source
		45	
		40	Very Quiet Private Office
		35	
		30	
	Extreme Quiet Not Commercially Practical for Offices	25	Broadcasting Studio
		20	Whisper 4 Feet from Source
		15	Ordinary Breathing
		10	
		5	
		0	Threshold of Audibility

Sound Transmission to a Minimum

SNEAD MOBILWALLS SELECTED AS RESULT OF COMPARATIVE TESTS ON MASONRY AND SOUNDPROOF STEEL WALLS

Some of the most elaborate acoustical tests ever made on masonry vs. sound insulated steel walls were in connection with the large office building constructed by Compagnie Parisienne de Distribution d'Électricité, in Paris, France. Snead Soundproof Mobilwalls were the only type that proved to be more soundproof than masonry.

Tests showed this type of wall to be more efficient than plaster block walls weighing 110 kilograms per square meter. Over a range of pitch limits from 100 cycles per second to 6,900, Snead Mobilwalls gave better sound insulation than 4 in. tile-and-plaster walls by a ratio of 22.9 to 20.05. The ratio over the competing insulated steel wall was 22.9 to 9.3.

Reverberation, resonance from percussion, sound absorption and other practical acoustical factors were measured. The official report published in the "Science in Industry" edition of "Travaux" particularly stressed the soundproof characteristics of Snead Mobilwall construction.

As a result of these tests, the architect, M. Urban Cassan, specified Snead Soundproof Mobilwalls for 14½ miles of corridor and office walls, wainscoting, closets and other enclosures.

Outer walls were lined with Snead Mobilwalls to obtain uniform appearance.

A continuous series of closets were built of standard stock units in the corridor partitions, opening on the room side. Over 200 of these integral wall closets were installed on each floor for the storage of supplies, books, files and clothing. Wash rooms with all plumbing concealed within the walls were likewise built of standard units.

FIRE TESTS

The American Society for Testing Materials One-hour Test requires that exterior surface temperatures must not show a temperature increase of more than 250° F over the atmospheric temperature, after the confined surface has been exposed to a temperature rise of 1700° F in one hour from a heat source originating in a confined space. At the end of the hour's test the exposed surfaces are subjected to a 30 lb. water pressure from a 1⅛" nozzle. The wall must withstand this water pressure without passage of water or flame.

Snead Mobilwalls have been subjected to this test, and fully comply with these requirements.

It should be noted that the walls so tested are **not special** walls, but of Snead **standard** 3" construction.

Further details on request.



Fig. 9. Illustrating the flexibility of Snead Mobilwalls Type SF-3. Storage cabinets integrally built in corridor walls.

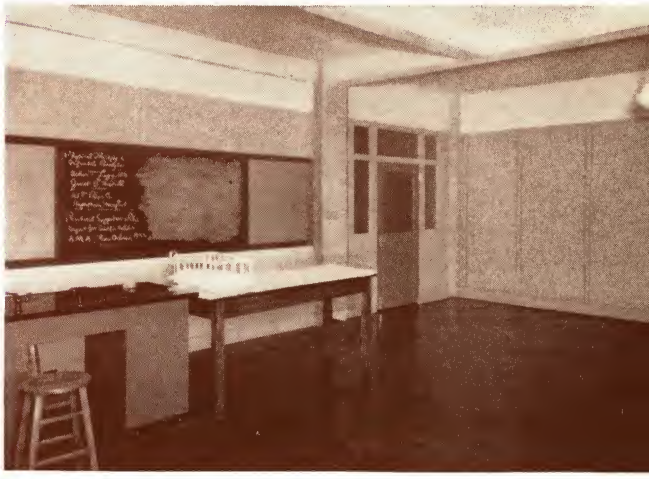


Fig. 10. Lecture room, built of Snead Mobilwalls Type SF-3. These walls, in light tan finish, subdivide ten floors of a noted medical college.



Fig. 11. Snead Mobilwall Type SF-3 in light tan with doors in darker tan color. Simulates masonry walls. Base is black. Note similar door unit in masonry walls.



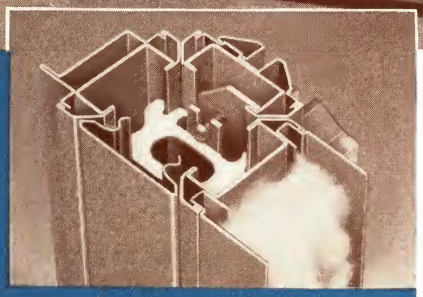


Fig. 12. Executive office, showing Snead Mobilwalls Type RF-1, closets and wainscote with window embrasures and radiator covers, all finished in grained walnut, with black base.

Fig. 13. Three-way intersection of RF-1 panel units. Note interlocking single piece link plate.

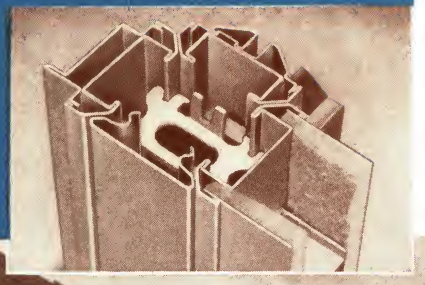


Fig. 14. Three-way intersection of Type SF-3 panel units.

Fig. 15. Snead Mobilwalls Type SF-3 in medium light green with black base.



FOUR GENERAL TYPES OF MOBILWALLS

TYPE RF 3" FLUSH

(1) SOUNDPROOF *(Type RF-1)*

Reinforced double panel sheets — interior solidly packed with inorganic, verminproof soundproof filler.

(2) SOUNDPROOF AND FIREPROOF *(Type RF-2)*

Reinforced double panel sheets — interior solidly packed with inorganic, verminproof, fireproof and soundproof filler.

(3) SOUNDPROOF — SINGLE LINE JOINT *(Type RF-3)*

Flush units, without pilasters, set in progressive assembly, showing only a single line joint. Solid fibre soundproof insulation.

These walls are especially adapted to the highest class of executive offices, where fine workmanship and finish with either fireproof or soundproof or both qualities are desired.

For Description and Details see pages 10 to 15

TYPE SF 3" SEMI-FLUSH

(1) SOUNDPROOF *(Type SF-1)*

Fibre insulated double wall panels with space between filled with an inorganic, verminproof, soundproof filler.

(2) SOUNDPROOF AND FIREPROOF *(Type SF-2)*

Insulated double wall panels with space between filled with an inorganic, verminproof, fireproof and soundproof filler.

(3) SOUND INSULATED *(Type SF-3)*

Fibre insulated double wall panels.

A standard type of steel wall for corridors and office divisions. Its soundproof qualities are equal to the RF Types. The main difference is that in the SF Types the panels in the units are recessed 1/3 inch. Pilasters and horizontal rails are flush.

For Description and Details see pages 16 to 19

CLASSIFICATIONS AND PARTITIONS

TYPE M MOULDED

(1) SOUND INSULATED

(Type M-1)

Double Steel Panels with 1/2" thick fibre core insulation.

(2) UNINSULATED

(Type M-2)

Single Sheet Steel Panel.

A high-grade moulded and paneled steel partition for general office and industrial use. It has all the flexibility, re-usability and salvageability of Snead Mobilwalls.

For Description and Details see pages 20 and 21



Fig. 16. Light cheerful offices with Snead Type M-1 partitions, finished in old ivory. Base black japan.



Fig. 17. One-way intersection of Type M-1 panel units.

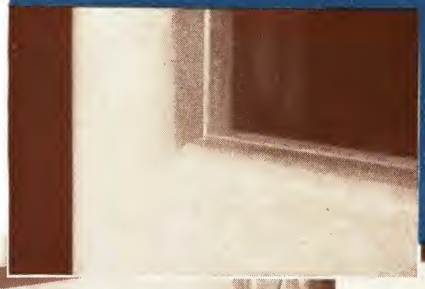


Fig. 18. Detail of Type H-1 cubicle post and panel. Post flush with panel.

Fig. 19. Snead Hospital Cubicle Type H-1. Open base. Finished in light warm gray. White metal sanitary shoe.

TYPE H-1 HOSPITAL CUBICLES

Designed with the cooperation of leading hospital authorities, to meet for the first time their demand for a real "hospital designed" steel and glass screen, providing privacy in multi-bed wards. Modern flush construction with bull-nosed panel edges. No dust-catching ledges. No projections to interfere with moving bed. White bronze chromium plated sanitary front post shoe is only contact with floor. Back post is separated from and securely fastened to wall. No bulky, dust-catching curtain rods. New design cornice conceals curtain carrying rollers having integral hooks, and provides utmost rigidity to panels. Built-in signal button, wiring and switches. Specifications on Page 27 are for standard units. Special sizes made to meet any condition.



Snead 3" Flush Mobilwalls (Types RF-1 and RF-2)



Fig. 20. Conference room of Snead Mobilwalls Type RF-1. Finished in walnut grain. Built-in alcove of standard panel units. Louvred doors. Black japan base.

SOUNDPROOF (Type RF-1), SOUNDPROOF and FIREPROOF (Type RF-2)

The Snead 3" Flush Mobilwall is designed for executive and similar type offices. It offers the architect and building owner many new possibilities where dignity of appearance and conformity of interior with exterior walls is desired for corridors and subdividing walls.

All members are made of best furniture grade steel, roller die-processed, giving uniformity, sharp definition of arrises, snug fit and cabinet work appearance.

PANEL UNITS

Roller die-formed posts are integral with ends of panel units. Panel sheets are of patent leveled furniture stock, reinforced with channels electrically welded at frequent intervals on inside surfaces to assure permanent flatness and rigidity of panels. Inside panel sheet surfaces are sprayed with non-hardening fibre-bearing mastic which dampens all metallic reverberations.

CORNICE

Cornices are optional, and may be omitted if vertical lines are to be accentuated for architectural purposes. When used, cornices may receive and conceal electric wiring.

TOP FILLER

Top filler may be either double mineral board or double insulated sheet steel, neatly scribed to ceiling beams or other irregularities. Butt joints of mineral board filler are reinforced with perforated zinc tape. Top filler is painted to match ceiling. Steel filler matches steel wall finish.

END FILLERS

Steel end fillers are of the same construction as panels and are securely anchored to building walls at intersections.

The Ultimate in Flush Wall Construction

DOORS

Hollow metal doors, 1¾" thick, are solidly packed and hung on heavy butts. They are mortised and reinforced for application of all hardware. One or two panel, or flush all steel doors are furnished as desired. Glazing is accomplished without loose glazing strips. Doors close on felt strikes and are fitted with automatic compression seals at the floor.

WIRING

All horizontal and vertical members can be wired or rewired by simply removing snap-on covers. Switches and receptacles may be installed at any point on the pilaster covers or base.

FINISH

Recent technological developments provide new possibilities in permanent metal finishes. Any color, grain or texture can be furnished to satisfy the decorative requirement.

INSULATION

In Snead Soundproof Mobilwalls (Type RF-1), panels, top fillers, and end fillers are solidly packed with inorganic verminproof, soundproof filler material. The entire periphery is sealed. A non-fusible filler having equal soundproofing qualities is furnished for Snead Fireproof and Soundproof Mobilwalls (Type RF-2).

GLASS

Any type or style of glass can be furnished. Glass is bedded in putty and back puttied. Special metal partition putty is colored to match wall finish. Glazing stops are snapped on eliminating use of screws. Double glazing is recommended for complete soundproofing, in which event, different thicknesses of glass are provided to eliminate tuned frequencies. The glass is set in removable frames to facilitate cleaning. In single glazed units, recesses for the glass are formed integral with panel sheets.

ERECTION

Panel units are rigidly secured to each other by means of one-piece internal link plates, which also receive snap-on pilaster covers. Corners, three and four-way extensions are easily accomplished without disturbing other units, by simply removing pilaster covers.

An adjustable base compensates for floor irregularities. Each base cover is independently removable. Walls are erected plumb and true. Hardware is properly adjusted. All wall surfaces are thoroughly cleaned after erection.

SPECIAL WALL ACCESSORIES

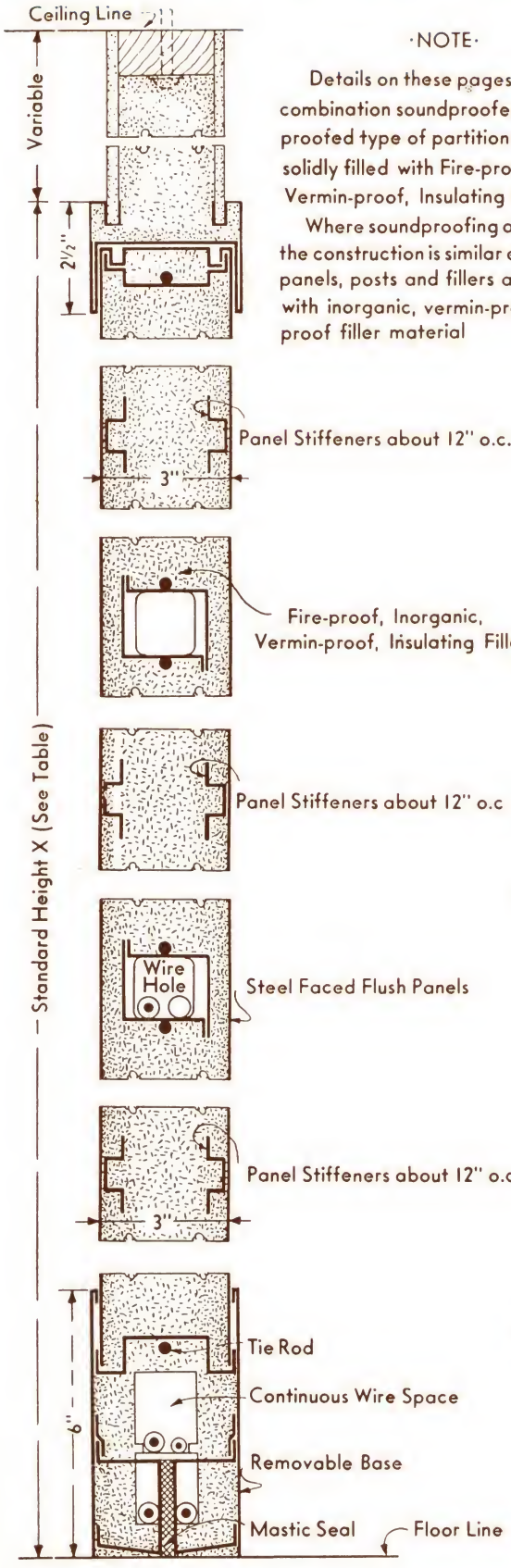
Closets for book storage supplies or clothing, etc., either in dividing walls or in corridor walls, can easily be accommodated in the standard units.

Other types of wall accessories such as wickets, railings, gates, etc., will be found on pages 22, 23 and 24 of this catalog.

Fig. 21. Snead Mobilwall Type RF-1 corridor with transom run of glass. Mobilwalls and door match building finish.



Details of Snead Flush Mobilwalls (Types RF-1 and RF-2)

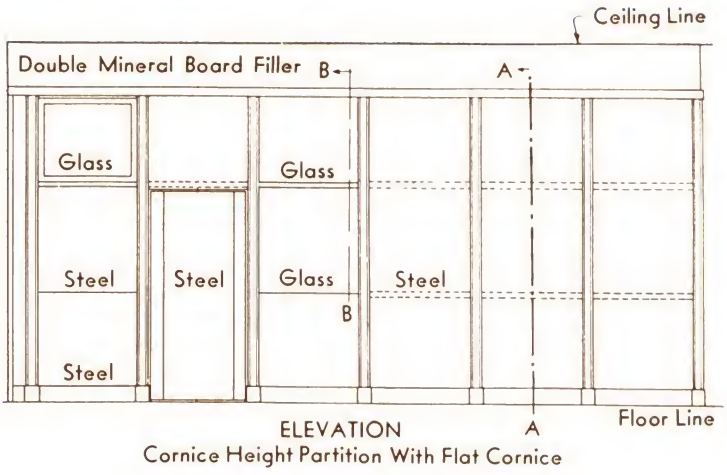


VERTICAL SECTION
A-A
Solid Wall With Flat Cornice

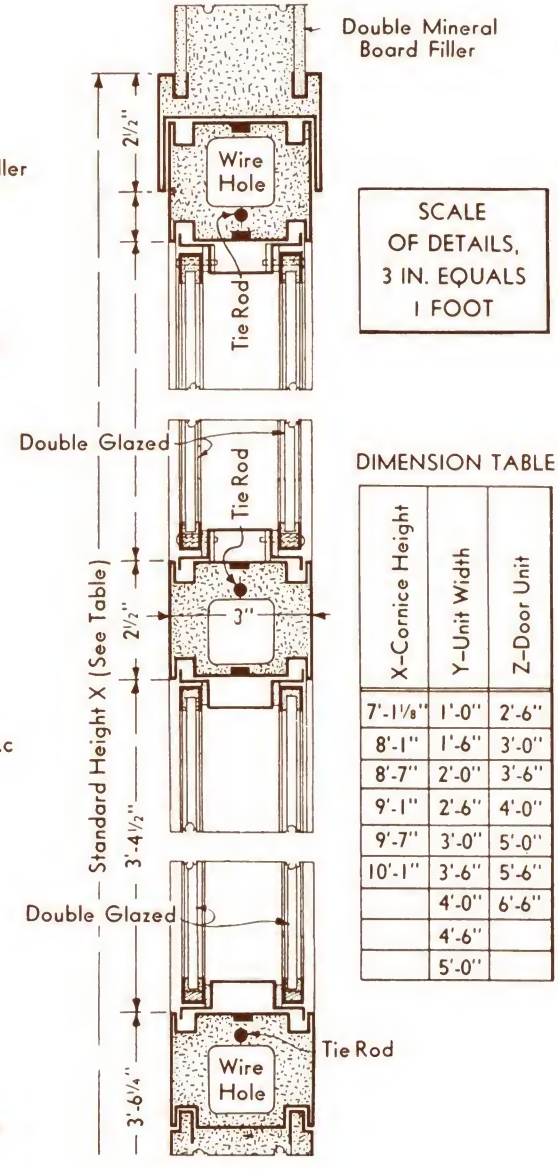
·NOTE·

Details on these pages show the combination soundproofed and fire-proofed type of partition with walls solidly filled with Fire-proof, Inorganic, Vermin-proof, Insulating Filler.

Where soundproofing only is desired the construction is similar except that panels, posts and fillers are packed with inorganic, vermin-proof, sound-proof filler material



ELEVATION
Cornice Height Partition With Flat Cornice

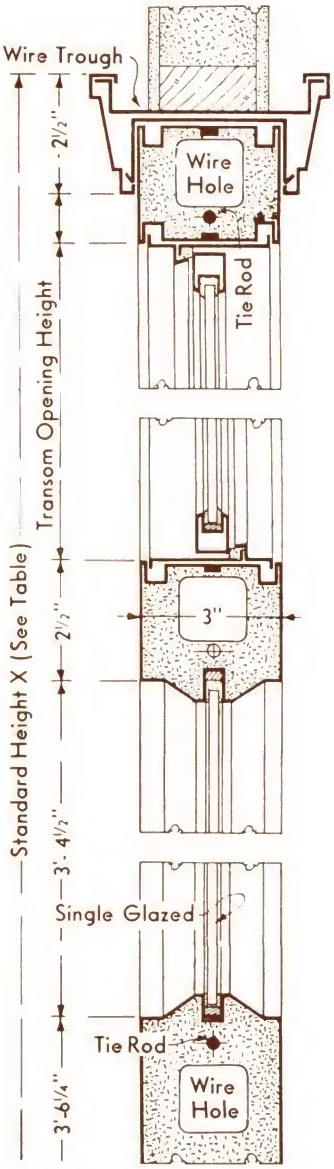


SCALE OF DETAILS, 3 IN. EQUALS 1 FOOT

DIMENSION TABLE

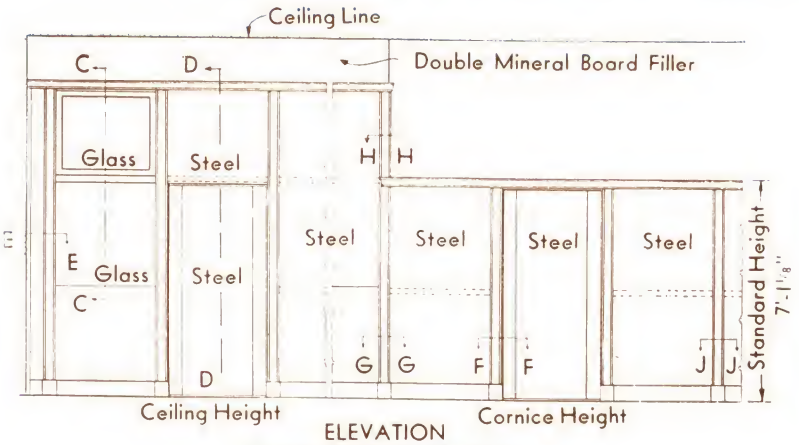
X-Cornice Height	Y-Unit Width	Z-Door Unit
7'-1⅛"	1'-0"	2'-6"
8'-1"	1'-6"	3'-0"
8'-7"	2'-0"	3'-6"
9'-1"	2'-6"	4'-0"
9'-7"	3'-0"	5'-0"
10'-1"	3'-6"	5'-6"
	4'-0"	6'-6"
	4'-6"	
	5'-0"	

VERTICAL SECTION
B-B
Double Glazed With Flat Cornice

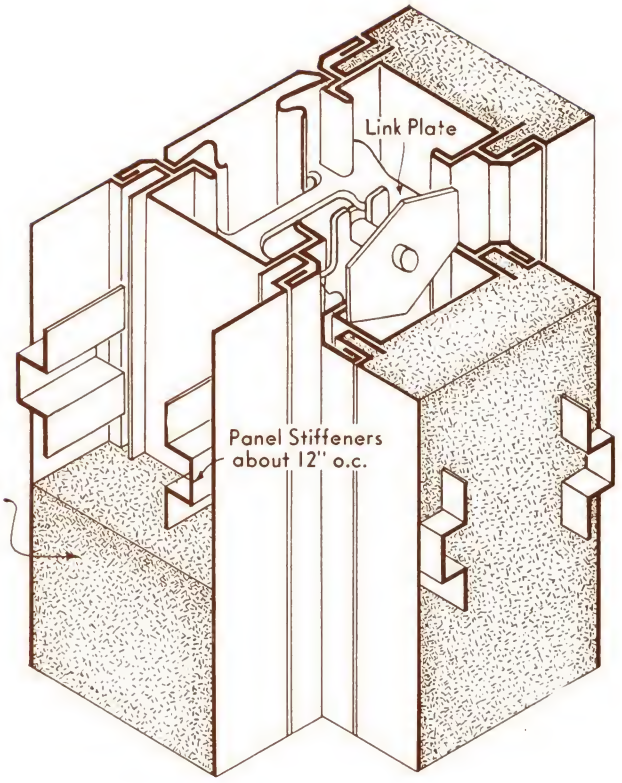


VERTICAL SECTION
C-C
With Moulded Cornice

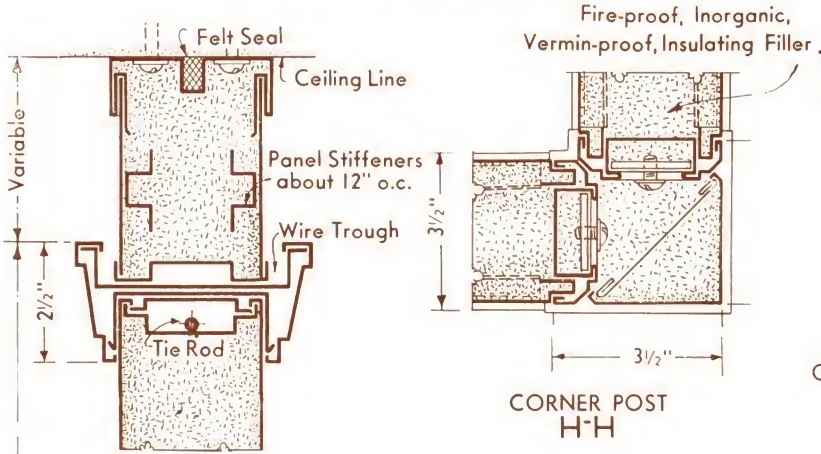
Details of Snead Flush Mobilwalls (Types RF-1 and RF-2)



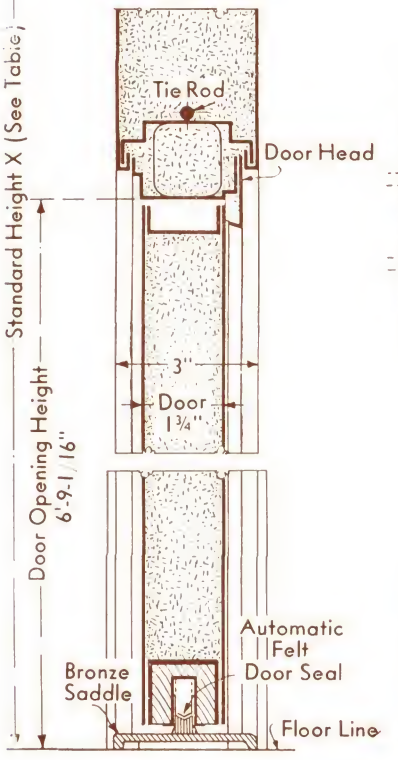
ELEVATION
Partition With Moulded Cornice



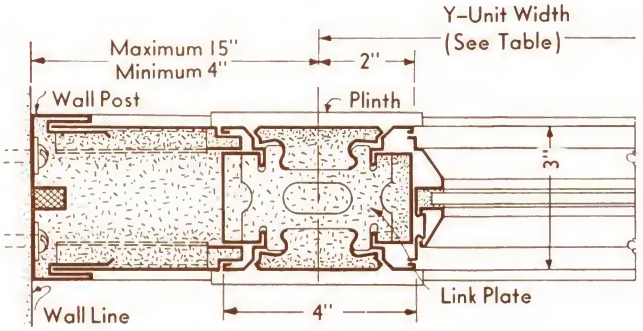
CUT-AWAY SECTION THRU THREE-WAY POST AND RAIL
Showing Method of Assembling Posts and Panels
by Use of The Patented Link Plate.



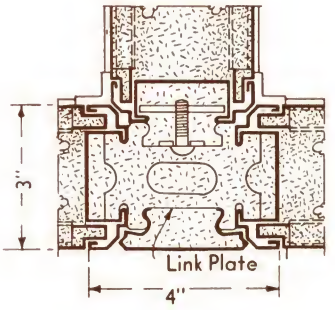
CORNER POST
H-H



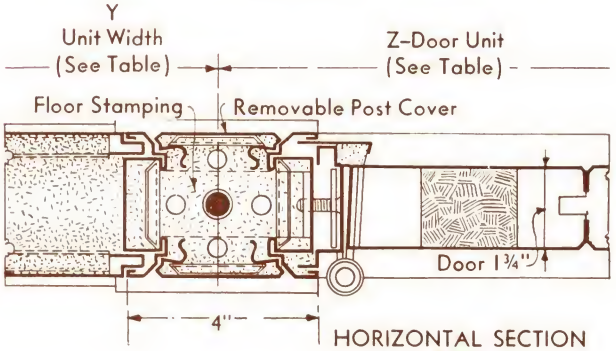
VERTICAL SECTION
D-D
Solid Wall With Moulded Cornice



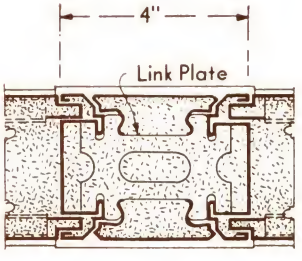
HORIZONTAL SECTION
E-E
Wall Filler



THREE-WAY POST
G-G



HORIZONTAL SECTION
F-F



HORIZONTAL SECTION
J-J

Snead Single Line Joint 3" Flush Mobilwalls (Type RF-3)



Fig. 22. Single line joint Snead Mobilwall Type RF-3. Light tan finish with darker tone picture moulding and black japan base.

AN IDEAL SOLID WALL FOR USE WHERE LIGHT TRANSMISSION IS NOT REQUIRED

This 3" thick sound insulated wall of absolutely flush design has but a single line joint. Panel sheets are made of highest grade patent-leveled furniture steel. The one piece flush units are constructed by permanently bonding steel panel sheets to a solid insulating core, resulting in an absolutely rigid unit.

Vertical edges of the units are formed and reinforced to provide a unique wedge type tongue and groove joint which provides the necessary rigidity without the use of posts. Units are interlocked with one another in progressive assembly. Heavy channel cornice reinforcement provides extreme rigidity and receives the cornice trim which is clipped on. Any cornice design furnished with other 3" thick partitions may also be used with this wall.

Door units are interchangeable with panel units of the same size. No glazed units are provided. A continuous wireway base simplifies wiring. Outlets and switches are located at any point desired.

TOP FILLER Top filler may be either double mineral board or double insulated sheet steel, neatly scribed to ceiling beams or other irregularities. Butt joints of mineral board filler are reinforced with perforated zinc tape. Top filler is painted to match ceiling. Steel filler matches steel wall finish.

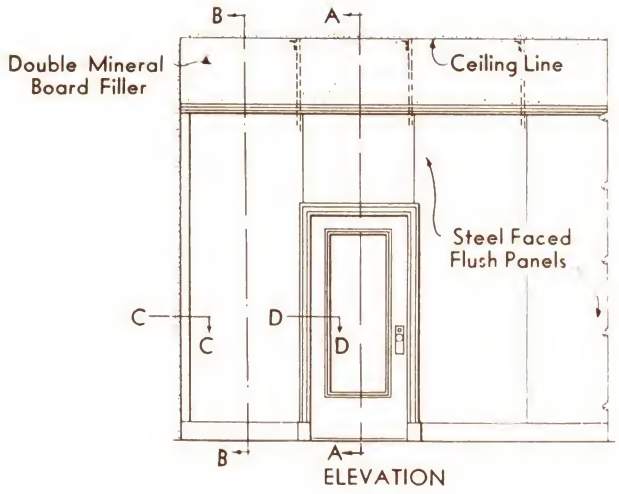
END FILLERS Steel end fillers are of the same construction as panels and are securely anchored to building walls at intersections.

DOORS Hollow metal doors, 1¾" thick, are solidly packed and hung on heavy butts. They are mortised and reinforced for application of all hardware. One or two panel, or flush all steel doors are furnished as desired. Glazing is accomplished without loose glazing strips. Doors close on felt strikes and are fitted with automatic compression seals at the floor, where required.

FINISH Recent technological developments provide new possibilities in permanent metal finishes. Any color, grain or texture can be furnished to satisfy the decorative requirement.

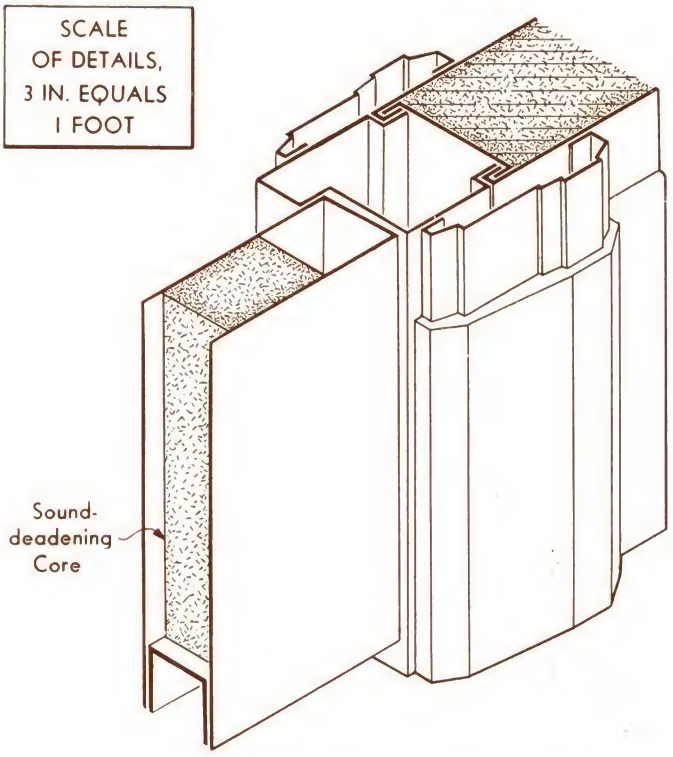
ERECTION Panels are interlocked in progressive assembly. An adjustable base compensates for floor irregularities. Each base cover is independently removable. Walls are erected plumb and true. Hardware is properly adjusted. All wall surfaces are thoroughly cleaned after erection.

Details of Snead Single Line Joint Mobilwalls (Type RF-3)

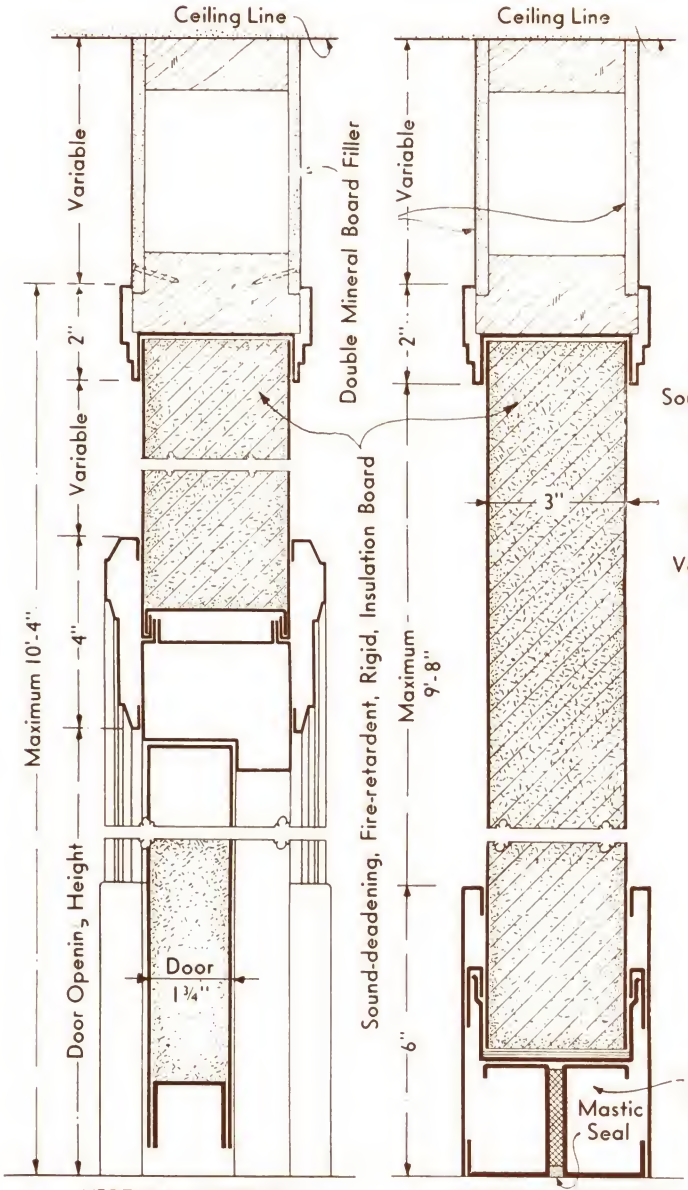


ELEVATION

SCALE OF DETAILS, 3 IN. EQUALS 1 FOOT

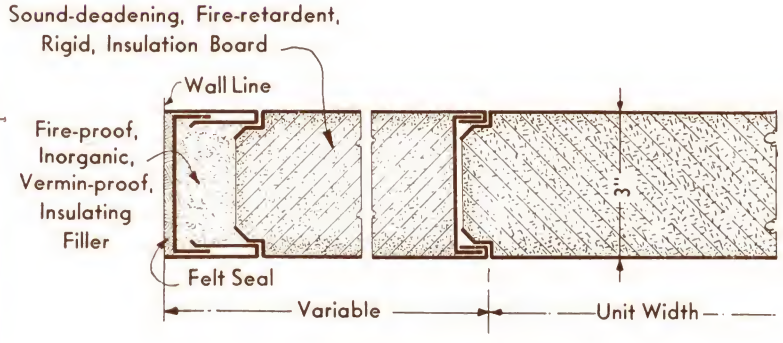


CUT-AWAY SECTION THRU DOOR JAMB

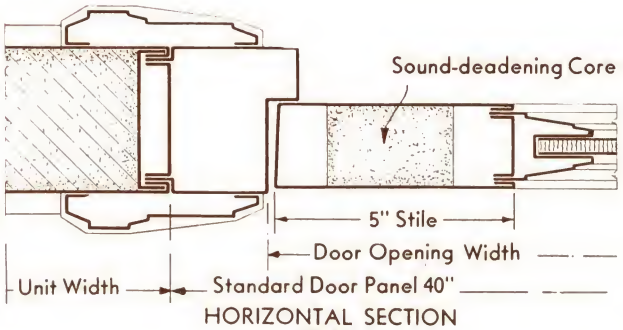


VERTICAL SECTION
A-A
Thru Partition at Door

VERTICAL SECTION
B-B
Thru Panel



HORIZONTAL SECTION
C-C
Thru Wall Filler and Panel



HORIZONTAL SECTION
D-D

Snead 3″ Semi-Flush Mobilwalls (SF Type)



Fig. 23. Featuring extra large glass units without intermediate rail at 7'-0" level, and without conventional cornice. Snead Mobilwalls Type SF-3. Green finish with black japan base.

SOUNDPROOF (Type SF-1), SOUNDPROOF and FIREPROOF (Type SF-2), SOUND INSULATED (Type SF-3)

The standard type of wall for dividing offices and for corridor walls. It affords all the soundproofness and privacy necessary for comfort and production efficiency.

It is similar in general construction to the Flush Mobilwall (RF Types), except that pilaster covers and cross rails project 1/8" beyond the 2¾" thick double insulated panels. The fireproof and soundproof qualities of this wall equal those of the Flush Mobilwall. This is the type selected by the Compagnie Parisienne de Distribution d'Électricité (pages 6 and 7).

All members are made of best furniture grade steel, roller die-processed, giving uniformity, sharp definition of arrises, snug fit and cabinet work appearance.

PANEL UNITS

Roller-die formed posts are integral with ends of panel units. Double panel sheets with air space between are each securely and permanently bonded to heavy sound deadening, fire retarding insulation boards to prevent warping and buckling. Panels are absolutely flat, and rigidly held in place. They may be cut down in the field as required without loss of material. Rails are flush with pilaster covers.

CORNICE

Cornices are optional, and may be omitted if vertical lines are to be accentuated for architectural purposes. When used, cornices may receive and conceal electric wiring.

TOP FILLER

Top filler may be either double mineral board or double insulated sheet steel, neatly scribed to ceiling beams or other irregularities. Butt joints of mineral board filler are reinforced with perforated zinc tape. Top filler is painted to match ceiling. Steel filler matches steel wall finish.

END FILLERS

Steel end fillers are of the same construction as panels and are securely anchored to building walls at intersections.

DOORS

Hollow metal doors, 1¾" thick, are solidly packed and hung on heavy butts. They are mortised and reinforced for

For Office Divisions and Corridors

application of all hardware. One or two panel, or flush all steel doors are furnished as desired. Glazing is accomplished without loose glazing strips. Doors close on felt strikes and are fitted with automatic compression seals at the floor, where required.

WIRING

All horizontal and vertical members can be wired or rewired by simply removing snap-on covers. Switches and receptacles may be installed at any point on the pilaster covers or base.

FINISH

Recent technological developments provide new possibilities in permanent metal finishes. Any color, grain or texture can be furnished to satisfy the decorative requirement.

INSULATION

In Snead Soundproof Mobilwalls (Type SF-1), panels, top fillers, and end fillers are solidly packed with inorganic verminproof, soundproof filler material. The entire periphery is sealed. A non-fusible filler having equal soundproofing qualities is furnished for Snead Soundproof and Fireproof Mobilwalls (Type SF-2).

GLASS

Any type or style of glass can be furnished. Glass is bedded and back puttied. Special metal partition putty is colored to match wall finish. Glazing stops are snapped on eliminating use of screws. Double glazing is recommended for complete soundproofing, in which event, different thicknesses of glass are provided to eliminate tuned frequencies. The glass is set in removable frames to facilitate cleaning. In single glazed units, stops are formed integral with the rails.

ERECTION

Panel units are rigidly secured to each other by means of one-piece internal link plates, which also receive snap-on pilaster covers. Corners, three and four-way extensions are easily accomplished by simply removing pilaster covers, without disturbing other units.

An adjustable base compensates for floor irregularities. Each base cover is independently removable. Walls are erected plumb and true. Hardware is properly adjusted. All wall surfaces are thoroughly cleaned after erection.

SPECIAL WALL ACCESSORIES

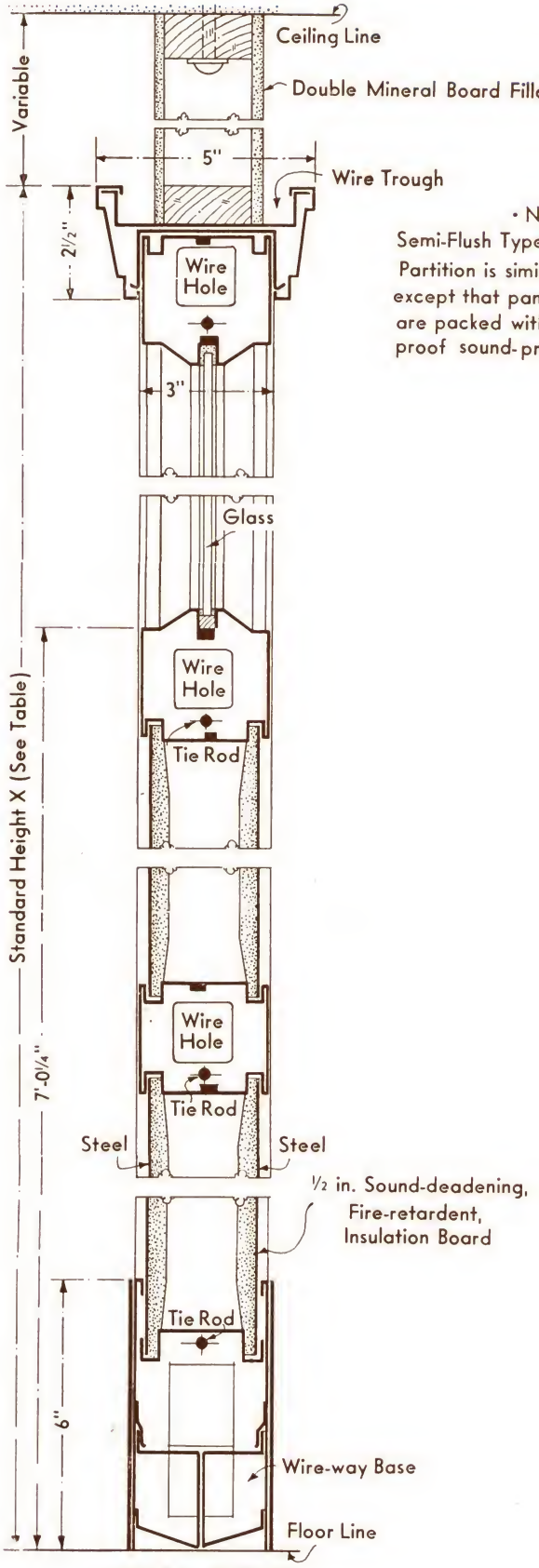
Closets for book storage supplies or clothing, etc., either in dividing walls or in corridor walls, can easily be accommodated in the standard units.

Other types of wall accessories such as wickets, railings, gates, etc., will be found on pages 22, 23 and 24 of this catalog.



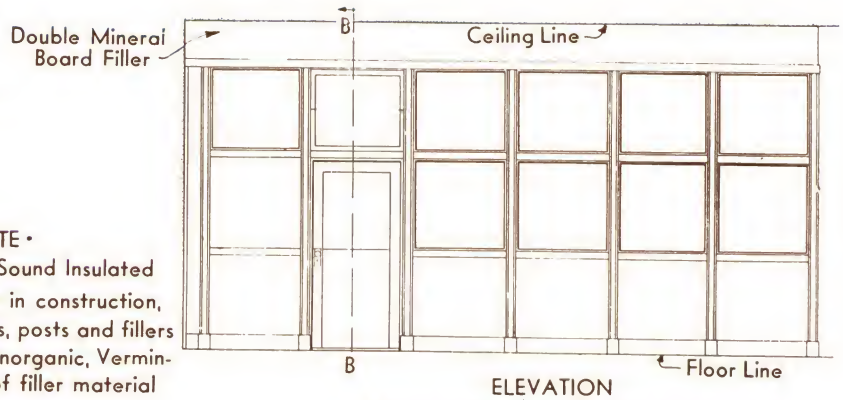
Fig. 24. Snead Mobilwall Type SF-3, 7'-2" high, finished to harmonize with building walls and doors.

Details of Snead Semi-Flush Mobilwalls (Type SF-3)

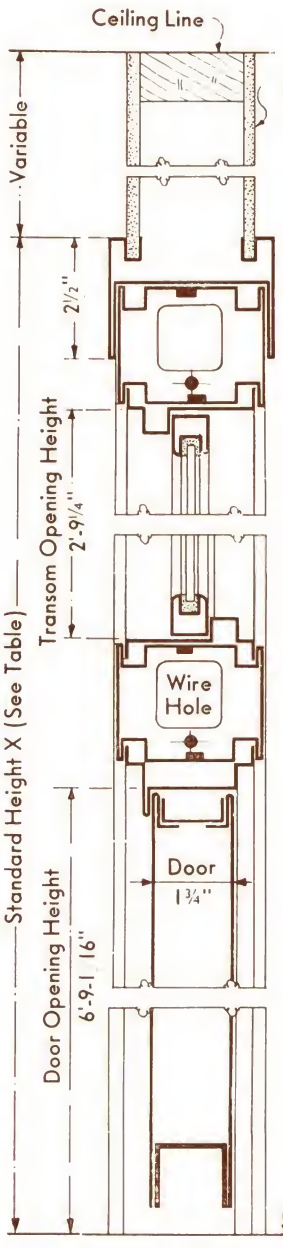


VERTICAL SECTION
A-A
With Moulded Cornice

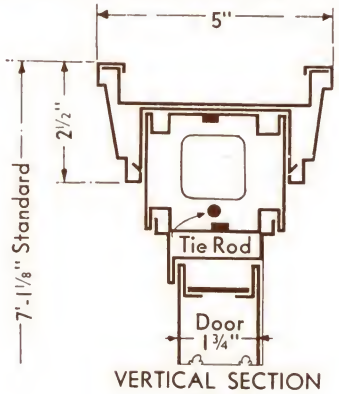
• NOTE •
Semi-Flush Type, Sound Insulated Partition is similar in construction, except that panels, posts and fillers are packed with inorganic, Vermin-proof sound-proof filler material



ELEVATION
Ceiling Height Partition With Flat Cornice

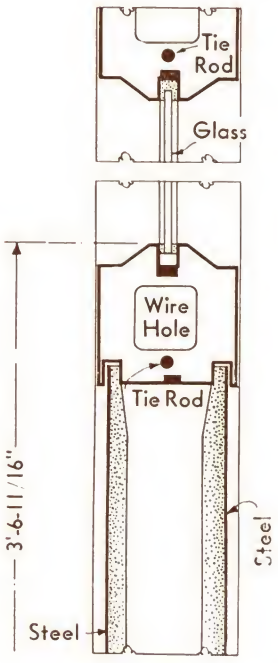


VERTICAL SECTION
B-B
With Flat Cornice



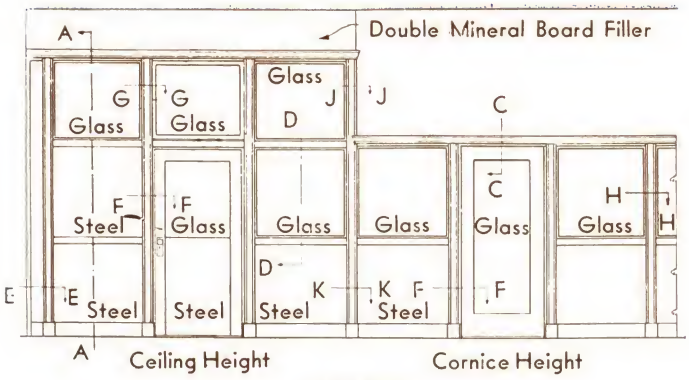
VERTICAL SECTION
C-C
Cornice Height Partition
With Moulded Cornice

SCALE OF DETAILS, 3 IN. EQUALS 1 FOOT

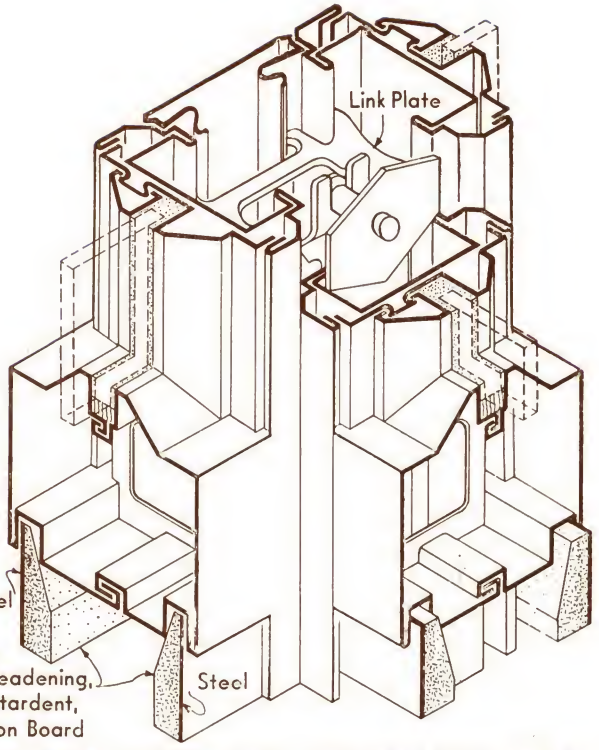


VERTICAL SECTION
D-D

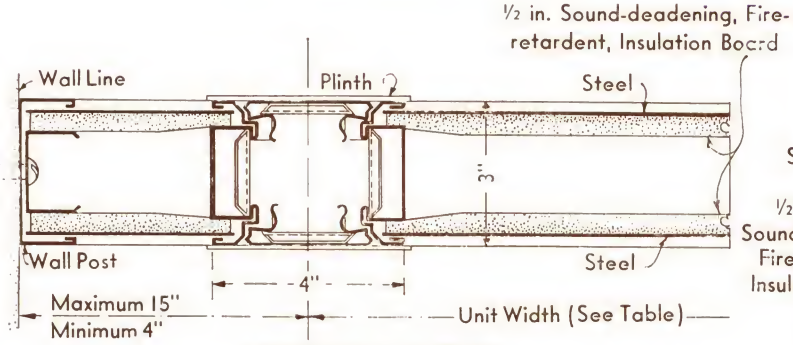
Details of Snead Semi-Flush Mobilwalls (Type SF-3)



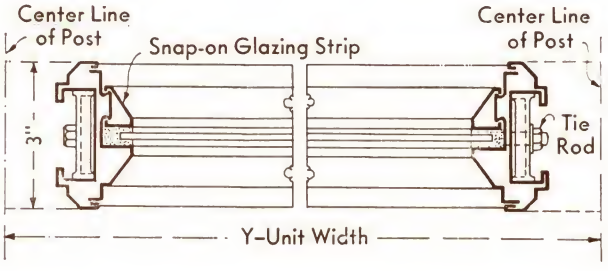
ELEVATION
Partition With Moulded Cornice

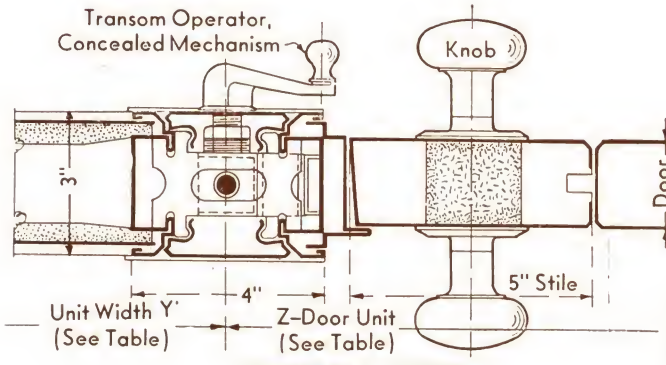


CUT-AWAY SECTION THRU THREE-WAY POST AND RAIL
Showing Method of Assembling Posts and Panels by Use of The Patented Link Plate.



HORIZONTAL SECTION
E-E

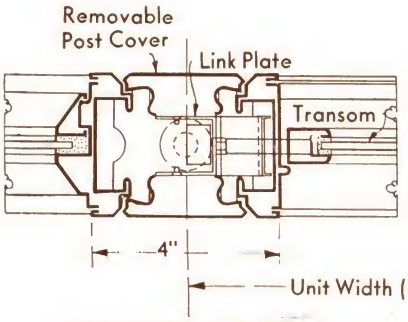




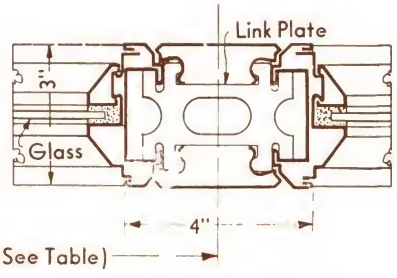
HORIZONTAL SECTION
F-F

DIMENSION TABLE

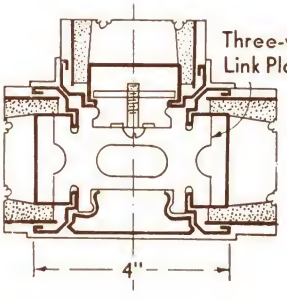
X–Cornice Height	7'-1⅛"	8'-1"	8'-7"	9'-1"	9'-7"	10'-1"			
Y–Unit Width	1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"
Z–Door Unit	2'-6"	3'-0"	3'-6"	4'-0"	5'-0"	5'-6"	6'-6"		



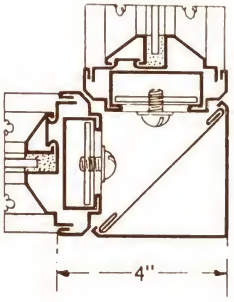
HORIZONTAL SECTION
G-G



HORIZONTAL SECTION
H-H



THREE-WAY POST
K-K



CORNER POST
J-J

Snead Movable Moulded Partition (M Type)



Fig. 25. Snead Type M-1 partition forms attractive corridor. Light green finish with black base.

INSULATED (TYPE M-1) UNINSULATED (TYPE M-2)

Snead Movable Moulded Partitions are of standard paneled type with all the flexible, re-usable and salvagable features of the Snead Semi-Flush Mobilwalls (SF Type). Any combination of steel and glass may be had, and changes from steel to glass or vice versa may be accomplished at any time.

PANEL UNITS

Roller-die formed posts are integral with ends of panel units. Type M-1 panels are constructed of two steel sheets securely and permanently bonded to both sides of a single thickness of fire-retarding insulating board. Type M-2 panels are built of a single sheet of steel. Panels may be cut down in the field without loss of material.

CORNICE

A one-piece cornice with heavy internal reinforcement provides extreme rigidity.

TOP FILLER

Top filler may be either double mineral board or double insulated sheet steel, neatly scribed to ceiling beams or other irregularities. Butt joints of mineral board filler are reinforced with perforated zinc tape. Top filler is painted to match ceiling. Steel filler matches steel wall finish.

END FILLERS

Steel end fillers are of the same construction as panels and are securely anchored to building walls at intersections.

DOORS

Hollow metal doors, 1¾" thick, are solidly packed and hung on heavy butts. They are mortised and reinforced for application of all hardware. One or two panel, or flush all steel doors are furnished as desired. Glazing is accomplished without loose glazing strips.

WIRING

All horizontal and vertical members can be wired or rewired by simply removing snap-on covers. Switches and receptacles may be installed at any point on the pilaster covers or bases.

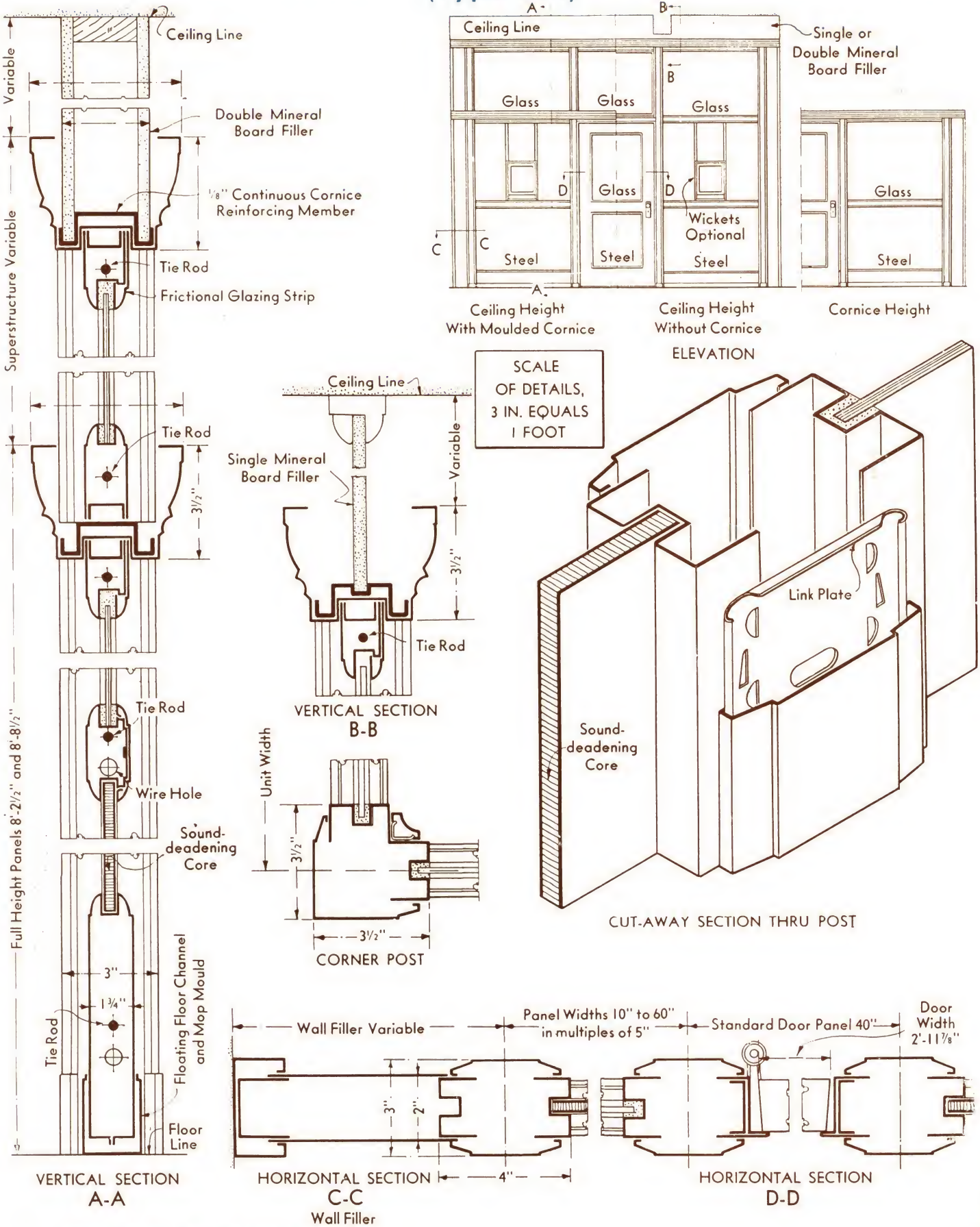
FINISH

Recent technological developments provide new possibilities in permanent metal finishes. Any color, grain or texture can be furnished to satisfy the architectural requirement.

ERECTION

Panels are rigidly secured to each other by means of one-piece link plates which also receive snap-on pilaster covers. Partitions are erected plumb and true, and shims compensate for floor irregularities. Hardware is properly adjusted. All wall surfaces are thoroughly cleaned.

Details of Snead Movable Moulded Partitions
(Type M-1)



Snead Mobilscreens and Mobilrails



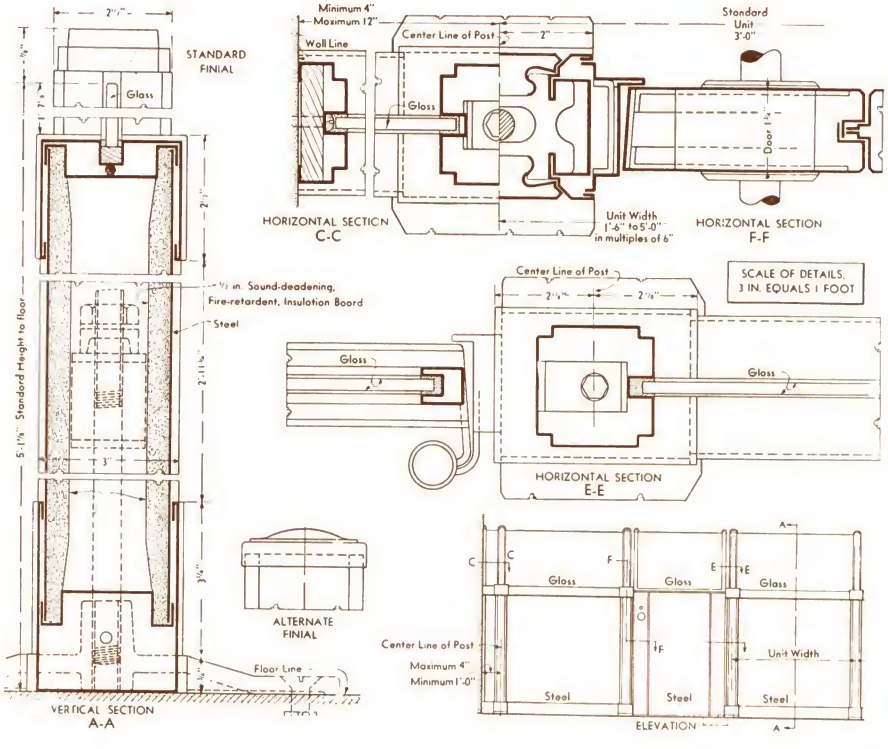


Fig. 26. Typical installation of Type SF-3 Mobilwalls forming corridor, and Mobilscreens dividing semi-private offices.

The construction and architectural details of Snead Mobilscreens are the same, type for type, as those of the Mobilwalls. Surfaces are semi-flush and the units are made in the same widths as the Mobilwall units. They connect to the Mobilwall without fillers or adapters.

Over-all height may be from 5 to 6 ft., the steel panel being from 3 to 5 ft., and the balance glass. For all heights the Snead floor anchorage assures absolute rigidity.

Mobilscreens are especially suitable for semi-private offices where ventilation and interior lighting are factors. Glass is either ¼ inch plate or ¼ inch obscure, top edge ground smooth.

Details of Snead Mobilscreens (Type SF-3)

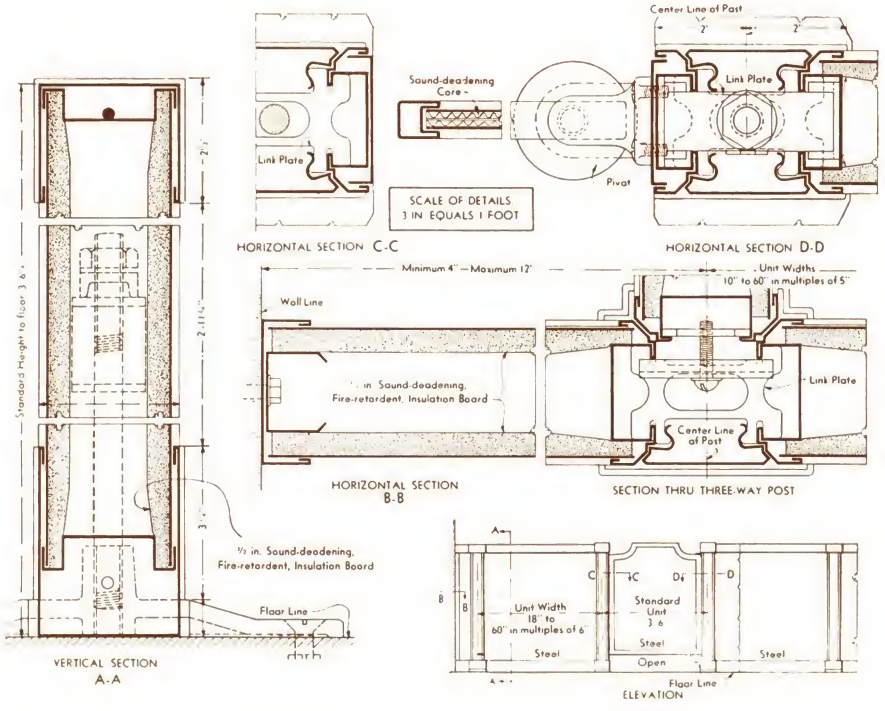
Snead Mobilscreens and Mobilrails



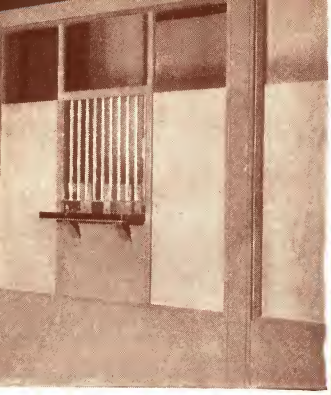
Fig. 27. Waiting room formed by Type M-1 railing, and library enclosed by Type M-1 bank screens.

Mobilrails are uniform in construction with Mobilwalls and Mobilscreens, and are available in either 36 or 42 in. in height. Gates are hung on non-sag pivots and may be located where desired. Single acting and double acting gates are optional. Gate posts remain absolutely rigid. There are no angle braces to obstruct floor space or to trip over.

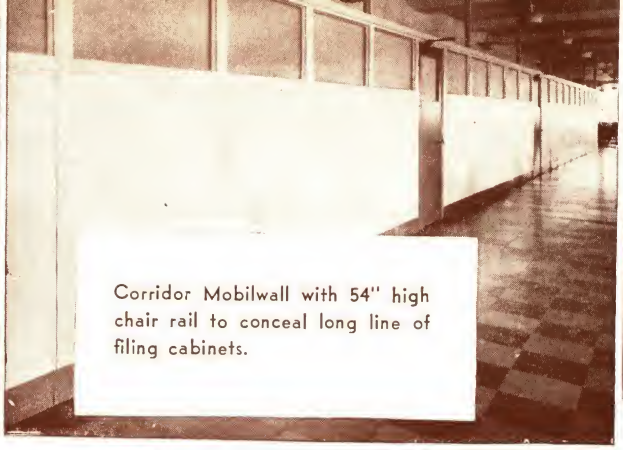
The construction of Snead Type M-1 bank screens and rails is identical with the Type M-1 Partition.



Details of Snead Mobilrails (Type SF-3)



Bank Type bronze fixed grille and carrara glass deal plate.



Corridor Mobilwall with 54" high chair rail to conceal long line of filing cabinets.



Integrally built-in counter with sliding doors and shelves in rear. Rubber top with white metal edging.

SNEAD MOBILWALL ACCESSORIES

Listed below are Standard Integral Units available for all Types of Mobilwalls and partitions. Details on request.

- Access Doors to Switchboards, etc.
- Cabinets
- Closets
- Cashier's wickets
- Counters, steel or linoleum covered, on
  - Railings
  - Bank screens
  - Partitions
- Cash drawers
- Display cases
- Doors, single or double
  - Steel or glass
  - Flush or panelled
  - Single and double acting
  - Dutch, with or without shelf
- Electrical receptacles
  - Switches, push buttons, etc.
- Hardware, for all uses
- Information windows
  - Hinged wickets
  - Hinged grilles
  - Speak holes
- Louvres, in doors or panels
  - Ventilating
  - Lightproof
- Pipe spaces
  - Plumbing enclosures
- Roofs or ceilings
  - In glass, steel, wire mesh
  - Insulated and acoustic type
- Radiator grilles and enclosures
- Shelves—for all uses
- Sliding sash
  - Horizontal
  - Vertical
  - Counterbalanced
- Sliding Cabinet Doors
- Transoms
  - Vertical or horizontal pivoted
  - Bottom or top hinged
  - Pole or concealed operated
- Wainscoting
- Window Embrasures
- Hollow Metal for Masonry Walls
  - Doors and bucks
  - Picture moulds
  - Chair rails
  - Base moulds, plain or wireway



Flush Door all steel.



Door with full glass panel.



Flush Door with louvre.



Door with half glass panel.

Information window built-in all steel 7'0" panel with transom lights above.

Information windows easily incorporated in all types of Mobilwalls.

Built-in wardrobe with or without washstands, with private cabinet above.

Window embrasure, radiator cover, built-in closets and book shelves.









Built-in display window with cupboards and sliding doors below.



SNEAD MOBILWALL SPECIFICATION

FLUSH SOUNDPROOF (Type RF-1)

(Similar Specification on Fireproof Construction (Type RF-2) Identical in Appearance. Details on Request).

1 General

1-1 Furnish and erect complete Snead & Company's standard flush soundproof three inch thick steel Mobilwall (Type RF-1).

1-2 They shall be movable and of hollow metal type.

1-3 All door units and panels shall be interchangeable with panel units of like size. Units shall be arranged to present the most symmetrical appearance, using standard panel widths. Double steel end fillers shall be used at walls and the space above the partition panels shall have double mineral board fillers to underside of ceilings, beams or (and) girders. No exposed screws shall be allowed in this work. They shall be so constructed and assembled as to permit the easy future extension of two or three or four way conditions, without use of special mouldings, fillers, or adapters, or removal of adjacent units.

2 Shop Drawings

Shop drawings shall be submitted in duplicate showing the proposed Mobilwall arrangement, elevations, gauges of various members, finish, hardware schedule and details of any special conditions before fabrication.

3 Materials

Concealed structural members shall be of steel. All exposed sheet metal shall be cold rolled furniture stock steel that has been properly annealed and process leveled, and has smooth clean surfaces. Gauges specified below are U. S. Standard, and are the minimum that will be acceptable under the contract. Mineral board shall conform with Federal Specification No. SS W 51A and shall be at least ¼" thick.

4 Posts

The posts shall be integral with the panel end formed by roller dies from No. 16 Ga. steel. One piece, four point bearing link plates placed approximately 24" apart shall be used to lock and align posts in field assembly. These link plates shall also be designed to receive the snap-on pilaster cover. All connections used in field assembly shall be concealed.

5 Panels

Panels shall be flush with the face of the post and pilaster cover, and shall be spaced a minimum of 3' apart, exposing a double line joint. Panel plates shall be 20 gauge steel reinforced with horizontal steel members, spaced approximately 12" apart, and electrically welded to panel every 3". Inside of panels are to be coated with non-hardening fibre bearing mestic to prevent metallic noise and packed solidly with inorganic verminproof insulating filler material, with a minimum density of 3 lbs. per cubic foot.

6 Rails

Rails shall be flush and of No. 20 Ga. steel. Where rails receive glass the stops shall be integral with the rail. (Vertical snap-on glazing stops to be provided on posts).

7 Post Covers

Post covers shall be roller die formed of No. 20 Ga. steel and designed to snap on over concealed link plates. They shall be flush with panel and permit of easy removal for wiring and for two, three or four way extensions.

8 Plinths

Plinths shall be No. 14 Ga. steel of flat design, with vertical adjustment on post cover to meet floor irregularities.

9 Base

Base shall be of No. 18 Ga. steel 6" high, of flat design and with vertical adjustment to floor. Each side to be independently removable for access to lighting, telephone and annunciator wire ways.

10 Cornice

Cornice reinforcement shall be of No. 14 Ga. Cornice trim shall be of No. 18 Ga. and clip on to cornice reinforcement. Cornice designed to receive concealed electric wiring and top filler construction.

11 Top Filler

11-1 Top filler shall be of double mineral board where partitions extend to the ceiling. They shall be flush and neatly scribed to ceilings, beams, walls and pipes, and solidly packed with inorganic verminproof insulating filler material. All joints to be filled and reinforced, and then sanded smooth. Finish on top filler shall match ceiling.

11-2 **Alternate:** Top filler shall be of double insulated steel, flush and with single line joint. Construction shall be of snap-on type to provide for easy removal. It shall be similar in construction to that of panel to insure permanent flatness, and solidly packed with inorganic soundproofing material. Finish to match partitions, and factory applied.

12 End Fillers

Steel end fillers of similar construction as Mobilwall panels shall be used at walls. They shall be insulated like the partition panels and tightly and securely anchored to the building wall.

13 Doors

Doors shall be 1¾" thick, of hollow metal and packed with sound deadening filler. There shall be not more than 3/32" clearance at head and jambs. All doors shall be provided with proper mortises and reinforcement for all hardware application. They shall be standard, one or two panel, glass or all steel type as shown on drawings. Standard lock mortise to provide for application of interchangeable hardware. Doors shall be glazed without use of loose glazing stops. Double doors shall have beveled meeting stiles with astragal. Inactive leaf shall be provided with top and bottom flush bolts. Where required "soundproof" doors shall close on felt strikes and shall be fitted with automatic compression seal at floor.

14 Transoms

Center horizontal pivot transoms shall be furnished as shown on drawings. Operation of transoms shall be by means of concealed operators. In the soundproof type transoms shall close on felt strikes.

15 Hardware

Hardware shall be of Mobilwall manufacturer's standard, which shall provide for ready interchange of locks covering the various operations required. Doors shall be hung on one pair of 5" x 4" ball bearing antifriction wrought steel butts.

16 Electrical Provisions

Provision shall be made for easy wiring through all vertical and horizontal members. Cutouts for switches and receptacles and installation of same shall be in base or post covers as shown on plan. Wire way base with raceways shall be readily accessible for wiring. All wiring BX cable by others.

17 Finish

17-1 All surfaces shall be properly cleaned of all oil, grease and dirt, and shall be dry before the application of finish. All surfaces shall then receive a coat of rust-resisting paint, baked on and sanded smooth. Flat color finish shall consist of two coats of color as specified, each baked.

17-2 Grained finish shall consist of one coat of rust-resisting paint, baked on, followed by graining, after which two independent coats of clear flat varnish or lacquer shall be applied.

18 Glass and Glazing

18-1 Glass shall be as specified on drawings, and shall be furnished and set by this contractor. Special Mobilwall putty shall be used, and the glass bedded in putty and back puttied. Glazing stops shall be of "snap-on" type, without use of screws. Putty shall generally match color of Mobilwalls.

18-2 In soundproof type double glass shall be furnished set in removable frames for easy cleaning.

19 Erection

19-1 The finished work shall be strong and rigid, neat in appearance and free from defects. Plain surfaces shall be smooth and free from warp and buckle.

19-2 All Mobilwalls shall be erected plumb and true. The floor shall be leveled with shims to insure level of all horizontal lines. Mastic or felt seal shall be provided at floor and all wall fillers. Mobilwalls shall be erected on top of finished floor covering. Floor to ceiling reinforcements shall be provided in all otherwise unsupported runs of over 20 ft. in length. All hardware shall be properly adjusted and left in perfect working order. All metal surfaces shall be cleaned and left free of scratches or abrasions. Glass shall be cleaned by others after putty has properly set.

SNEAD MOBILWALL SPECIFICATION

FLUSH SINGLE LINE JOINT (Type RF-3)

1 General

1-1 Furnish and erect complete Snead & Company's standard single line joint 3" thick flush soundproof steel Mobilwall (Type RF-3).

1-2 They shall be movable and so constructed as to present a single line joint. No chair or transom rails or post covers shall be permitted. Rearrangements of panels to be made only by rearrangement of entire run of Mobilwalls.

2 Shop Drawings

Shop drawings shall be submitted in duplicate showing the proposed Mobilwall arrangement, elevations, gauges of various members, finish, hardware schedule and details of any special conditions before fabrication.

3 Materials

Concealed structural members shall be of steel. All exposed sheet metal shall be cold rolled furniture stock steel that has been properly annealed and process leveled, and has smooth, clean surfaces. Gauges specified below are U. S. Standard, and are the minimum that will be acceptable under the contract. Mineral board shall conform with Federal Specification No. SS W 51A and shall be at least ¼" thick.

4 Panels

Panels shall be 3" thick, constructed of two No. 20 gauge steel sheets permanently bonded to a solid, sound deadening, fire retarding insulation board sealed to prevent warp and buckle. The vertical sides of panels shall be formed and reinforced so as to provide a wedge type tongue and groove means of interlocking the panels in progressive field assembly.

5 Plinths

Plinths shall be of No. 14 Ga. and to be used only at the bottom of snap-on door casing trim.

6 Base

Base shall be of the continuous wireway type, of No. 14 Ga., arranged to support the panels. The outside members shall be of No. 18 Ga. 6" high, independently removable for access to lighting, telephone and annunciator wireways.

7 Cornice

Cornice shall be of No. 18 Ga., of a flat type, continuous over the top of panel units, and arranged to receive top filler construction.

8 Top Filler

Top fillers shall be of double mineral board where Mobilwalls extend to the ceiling. They shall be flush and neatly scribed to ceilings, beams, walls and pipes. All joints shall be filled and reinforced, and then sanded smooth. Finish on top fillers shall match ceiling.

9 End Filler

Steel end fillers of similar construction as Mobilwall panels shall be used at walls. They shall be insulated like the Mobilwall panels and tightly and securely anchored to the building wall.

10 Doors

Doors shall be 1¾" thick, of hollow metal panel type, packed with sound deadening filler. There shall be not more than 3/32" clearance at head and

jambs. All doors shall be provided with proper mortises and reinforcement for all hardware application. They shall be one or two panel, open for glass or all steel type, as shown on plans. Standard lock mortises shall provide for application of interchangeable hardware. Doors shall be glazed by the use of a single horizontal removable glazing stop to be held in place by bronze screws. Double doors shall have bevelled meeting stiles with astragal. Inactive leaf shall be provided with top and bottom flush bolts.

11 Door Casings

Door casings shall be provided where shown on plans, and shall be of No. 18 Ga., roller die formed and held in place by concealed snap on clips. The door casings shall be of a design to match the mouldings on the panel doors.

12 Transoms

Center horizontal pivoted transoms shall be furnished as shown on the plans. Operation of transoms shall be by means of friction pivots.

13 Hardware

Hardware shall be of Mobilwall manufacturer's standard, which shall provide for ready interchange of locks covering the various operations required. Doors shall be hung on one pair of 5" x 4" ball bearing anti-friction wrought steel butts.

14 Finish

14-1 All surfaces shall be properly cleaned of all oil, grease and dirt, and shall be dry before the application of finish. All surfaces shall then receive a coat of rust-resisting paint, baked on and sanded smooth. Flat color finish shall consist of two coats of color as specified, each baked.

14-2 Grained finish shall consist of one coat of rust-resisting paint, baked on, followed by graining, after which two independent coats of clear flat varnish or lacquer shall be applied.

15 Erection

15-1 The finished work shall be strong and rigid, neat in appearance and free from defects. Plain surfaces shall be smooth and free from warp and buckle.

15-2 All Mobilwalls shall be progressively erected plumb and true. The floor base shall be leveled with shims to insure level of all horizontal lines. Mobilwalls shall be erected on top of finished floor covering. Floor to ceiling reinforcements shall be provided in all otherwise unsupported runs of over 20 ft. in length. All hardware shall be properly adjusted and left in perfect working order. All metal surfaces shall be cleaned and left free of scratches or abrasions.

Glass shall be cleaned by others after putty has properly set.

SNEAD MOBILWALL SPECIFICATION

SEMI-FLUSH STANDARD INSULATED (Type SF-3)

1 General

1-1 Furnish and erect complete Snead & Company's standard semi-flush soundproof three inch thick steel Mobilwall (Type SF-3).

1-2 Wall shall be movable and of hollow metal type.

1-3 All door units and panels shall be interchangeable with panel units of like size. Units shall be arranged to present the most symmetrical appearance, using standard panel widtns. Double steel end fillers shall be used at walls and the space above the partition panels shall have double mineral board fillers to underside of ceilings, beams or (and) girders. No exposed screws shall be allowed in this work. They shall be so constructed and assembled as to permit the easy future extension of two or three or four way conditions, without use of special mouldings, fillers, or adapters, or removal of adjacent units.

2 Shop Drawings

Shop drawings shall be submitted in duplicate showing the proposed Mobilwall arrangement, elevations, gauges of various members, finish, hardware schedule and details of any special conditions before fabrication.

3 Materials

Concealed structural members shall be of steel. All exposed sheet metal shall be cold rolled furniture stock steel that has been properly annealed and process leveled and has smooth clean surfaces. Gauges specified below are U. S. Standard, and are the minimum that will be acceptable under the contract. Mineral board shall conform with Federal Specification No. SS W 51A and shall be at least 1/4" thick.

4 Posts

The posts shall be integral with the panel end formed by roller dies from No. 16 Ga. steel. One piece, four point bearing link plates placed approximately 24" apart shall be used to lock and align posts in field assembly. These link plates shall also be designed to receive the snap-on pilaster cover All connections used in field assembly shall be concealed.

5 Panels

Panels shall be flush, with projections of post and pilaster cover not to exceed 1/8". Panel plates shall be No. 20 Ga. steel spaced a minimum of 2¾" apart and permanently bonded to 1/2" thick sound-deadening, fire retarding insulation boards, sealed to prevent warp and buckle. Panel assemblies shall have approximately 1¾" dead air space between.

6 Rails

Rails shall be flush with posts and of No. 20 Ga. steel. Where rails receive glass the stops shall be integral with the rail. (Vertical snap-on glazing stops to be provided on posts).

7 Post Covers

Post covers shall be roller die formed of No. 20 Ga. steel and designed to snap on over concealed link plates. They shall be flush with posts and permit of easy removal for wiring and for two, three or four way extensions.

8 Plinths

Plinths shall be No. 14 Ga. steel of flat design, with vertical adjustment on post cover to meet floor irregularities.

9 Base

Base shall be of No. 18 Ga. steel 6" high, of flat design and with vertical adjustment to floor. Each side to be independently removable for access to lighting, telephone and annunciator wireways.

10 Cornice

Cornice reinforcement shall be of No. 14 Ga. Cornice trim shall be of No. 18 Ga. and clip on to cornice reinforcement. Cornice designed to receive concealed electric wiring and top filler construction.

11 Top Filler

Top fillers shall be of double mineral board where Mobilwalls extend to the ceiling. They shall be flush and neatly scribed to ceilings, beams, walls and pipes. All joints shall be filled and reinforced, and then sanded smooth. Finish on top filler shall match ceiling.

12 End Fillers

Steel end fillers of similar construction as Mobilwall panels shall be used at walls. They shall be insulated like the partition panels and tightly and securely anchored to the building wall.

13 Doors

Doors shall be 1¾" thick, of hollow metal and packed with sound deadening filler. There shall be not more than 3/32" clearance at head and jambs. All doors shall be provided with proper mortises and reinforcement for all hardware application. They shall be standard, one or two panel, glass or all steel type as shown on drawings. Standard lock mortise to provide for application of interchangeable hardware. Doors shall be glazed without use of loose glazing stops. Double doors shall have beveled meeting stiles with astragal. Inactive leaf shall be provided with top and bottom flush bolts. Where required "soundproof" doors shall close on felt strikes and shall be fitted with automatic compression seal at floor.

14 Transoms

Center horizontal pivot transoms shall be furnished as shown on drawings. Operation of transoms shall be by means of concealed operators. In the soundproof type transoms shall close on felt strikes.

15 Hardware

Hardware shall be of Mobilwall manufacturer's standard, which shall provide for ready interchange of locks covering the various operations required. Doors shall be hung on one pair of 5" x 4" ball bearing anti-friction wrought steel butts.

16 Electrical Provisions

Provision shall be made for easy wiring through all vertical and horizontal members. Cutouts for switches and receptacles and installation of same shall be in base or post covers as shown on plan. Wireway base with raceways shall be readily accessible for wiring. All wiring BX cable by others.

17 Finish

17-1 All surfaces shall be properly cleaned of all oil, grease and dirt, and shall be dry before the application of finish. All surfaces shall then receive a coat of rust-resisting paint, baked on and sanded smooth. Flat color finish shall consist of two coats of color as specified, each baked.

17-2 Grained finish shall consist of one coat of rust-resisting paint, baked on, followed by graining, after which two independent coats of clear flat varnish or lacquer shall be applied.

18 Glass and Glazing

Glass shall be as specified on drawings, and shall be furnished and set by this contractor. Special Mobilwall putty shall be used, and the glass bedded in putty and back puttied. Glazing stops shall be of "snap-on" type, without use of screws. Putty shall generally match color of Mobilwalls.

19 Erection

19-1 The finished work shall be strong and rigid, neat in appearance and free from defects. Plain surfaces shall be smooth and free from warp and buckle.

19-2 All Mobilwalls shall be erected plumb and true. The floor shall be leveled with shims to insure level of all horizontal lines. Mobilwalls shall be erected on top of finished floor covering. Floor to ceiling reinforcements shall be provided in all otherwise unsupported runs of over 20 ft. in length. All hardware shall be properly adjusted and left in perfect working order. All metal surfaces shall be cleaned and left free of scratches or abrasions. Glass shall be cleaned by others after putty has properly set.

SEMI-FLUSH SOUND INSULATED (Type SF-1)

This specification is the same as Semi-Flush Standard Insulated Mobilwalls (Type SF-3) except as follows:

5 Panels

Panels shall be flush with projections of post and pilaster cover not to exceed 1/8". Panel plates shall be No. 20 Ga. steel spaced a minimum of 2¾" apart and permanently bonded to 1/2" thick sound deadening fire retarding insulation boards, sealed to prevent warping and buckling. Panel assemblies shall be packed solidly with inorganic, verminproof insulating filler material.

11 Top Filler

Top fillers shall be of double mineral board where Mobilwalls extend to the ceiling. They shall be flush and neatly scribed to ceilings, beams, wall and pipes and solidly packed with inorganic verminproof insulating filler material. All joints shall be filled and reinforced, and then sanded smooth. Finish on top fillers shall match ceiling.

18 Glass and Glazing

18-1 Glass shall be as specified on drawings, and shall be furnished and set by this contractor. Special Mobilwall putty shall be used, and the glass bedded in putty and back puttied. Glazing stops shall be of "snap-on" type, without use of screws. Putty shall generally match color of Mobilwalls.

18-2 Glass shall be double glazed and set in removable frames for easy cleaning.

19 Erection

19-1 The finished work shall be strong and rigid, neat in appearance and free from defects. Plain surfaces shall be smooth and free from warp and buckle.

19-2 All Mobilwalls shall be erected plumb and true. The floor shall be leveled with shims to insure level of all horizontal lines. Mastic or felt seal shall be provided at floor and all wall fillers. Mobilwalls shall be erected on top of finished floor covering. Floor to ceiling reinforcements shall be provided in all otherwise unsupported runs of over 20 ft. in length. All hardware shall be properly adjusted and left in perfect working order. All metal surfaces shall be cleaned and left free of scratches or abrasions. Glass shall be cleaned by others after putty has properly set.

(Similar Specification on Fireproof Construction (Type SF-2) Identical in Appearance. Details on Request).

SNEAD MOVABLE PARTITION SPECIFICATION

(TYPE M-1)

(Type M-2 Specification identical except that panels (Par. 5) shall be a single 18 Ga. steel sheet).

1 General

1-1 Furnish and erect complete Snead & Company's standard moulded type, sound retarding 2" thick movable steel partitions (Type M-1).

1-2 Partitions shall be movable and of hollow metal type.

1-3 All door units and panels shall be interchangeable with panel units of like size. Units shall be arranged to present the most symmetrical appearance using standard panel widths. Double steel end fillers shall be used on walls, and the space above the partition panels shall have double mineral board fillers to ceilings, underside of ceilings, beams and/or girders. They shall be so constructed and assembled as to permit the easy future extension of two or three or four way conditions without the use of special mouldings, fillers or adapters or removal of adjacent units.

2 Shop Drawings

Shop drawings shall be submitted in duplicate showing the proposed partition arrangement, elevations, gauges of various members, finish, hardware and details of any special conditions before fabrication.

3 Materials

Concealed structural members shall be of steel. All exposed sheet metal shall be cold rolled furniture stock steel that has been properly annealed and process levelled, and has smooth, clean surfaces. Gauges specified below are U. S. Standard and are the minimum that will be acceptable under the contract. Mineral board shall conform with Federal Specification No. SS W 51A and shall be at least 1/4" thick.

4 Posts

The posts shall be integral with the panel ends, and formed by roller dies from No. 16 gauge steel. Link plates, placed approximately 24" apart, shall be used to lock and align posts in field assembly. These link plates shall also be designed to receive a "snap-on" pilaster cover. All connections used in field assembly shall be concealed.

5 Panels

Partitions shall be of panel type, with panels constructed of two No. 20 Ga. steel sheets permanently bonded to a 5/16" thick sound deadening, fire retarding insulation board, sealed to prevent warp and buckle. Panel assemblies shall be rigid and approximately 3/8" thick.

6 Rails

Rails shall be of the moulded type, roller die formed of No. 20 Ga. steel.

7 Post Covers

Post covers shall be roller die formed of No. 20 Ga. steel, and designed to snap on over concealed link plates. They shall be of moulded design and permit of easy removal for wiring and for two, three or four way extensions.

8 Plinths

Plinths shall be No. 14 Ga. steel, of moulded design, with vertical adjustment on post cover to meet floor irregularities.

9 Base

Base shall be No. 20 Ga., moulded type, approximately 8" high and shall be fitted with raceway for wiring. It also shall be fitted with a channel type mop mould of telescopic design to take up any irregularities of the floor.

10 Cornice

Cornice shall be of moulded design, No. 20 Ga. and run continuously over panel units. Cornice reinforcement of No. 11 Ga. approximately 36" long, shall be used at joints. All joints shall be further aligned by 6" splice plates in back. Cornice shall also be designed to receive concealed electric wiring and top filler construction.

11 Top Filler

Top fillers shall be of double mineral board where partitions extend to the ceiling. They shall be flush and neatly scribed to ceilings, beams, walls and pipes. All joints shall be filled and reinforced and then sanded smooth. Finish on top filler shall match the ceiling.

12 End Fillers

Steel end fillers shall be of double steel construction, No. 20 Ga., spaced apart approximately 2". They shall be tightly and securely anchored to the building wall. They shall have the same sound retardant qualities as the panels.

13 Doors

Doors shall be 1¾" thick, of hollow metal panel type, packed with sound deadening filler. There shall be not more than 3/32" clearance at head and jambs. All doors shall be provided with proper mortises and reinforcement for all hardware application. They shall be one or two panel, open for glass or all steel type, as shown on plans with standard lock mortises to provide for application of interchangeable hardware. Doors shall be glazed by the use of one horizontal removable glazing stop to be held in place by bronze screws. Double doors shall have bevelled meeting stiles with astragal. Inactive leaf shall be provided with top and bottom flush bolts.

14 Transoms

Center horizontal pivot transoms shall be furnished and operation shall be by means of friction pivots or concealed operators, as shown on the plans.

15 Hardware

Hardware shall be of partition manufacturer's standard. It shall provide for ready interchange of locks covering the various operations required. Doors shall be hung on one pair of 4" x 4" ball bearing anti-friction wrought steel butts.

16 Electrical Provisions

Provisions shall be made for easy wiring through all vertical and horizontal members. Cutouts for switches and receptacles and installation of same shall be in the post cover, as shown on the plans. Fish type wireway base shall be readily accessible for wiring. All wiring BX cable by others.

17 Finish

17-1 All surfaces shall be properly cleaned of all oil, grease and dirt, and shall be dry before the application of finish. All surfaces shall then receive a coat of rust-resisting paint, baked on and sanded smooth. Flat color finish shall consist of two coats of color as specified, each baked.

17-2 Grained finish shall consist of one coat of rust-resisting paint, baked on, followed by graining, after which two independent coats of clear flat varnish or lacquer shall be applied.

18 Glass and Glazing

Glass shall be as specified on drawings, and shall be furnished and set by this contractor. Special metal partition putty shall be used, and the glass bedded in putty and back puttied. Glazing stops shall be of "snap-on" type, without use of screws. Putty shall generally match color of partitions.

19 Erection

19-1 The finished work shall be strong and rigid, neat in appearance and free from defects. Plain surfaces shall be smooth and free from warp and buckle.

19-2 All partitions shall be erected plumb and true. The floor shall be leveled with shims to insure level of all horizontal lines. Partitions shall be erected on top of finished floor covering. Floor to ceiling reinforcements shall be provided in all otherwise unsupported runs of over 20 ft. in length. All hardware shall be properly adjusted and left in perfect working order. All metal surfaces shall be cleaned and left free of scratches or abrasions. Glass shall be cleaned by others after putty has properly set.

SNEAD HOSPITAL CUBICLES

FLUSH (Type H-1)

1 General

1-1 Furnish and erect complete Snead & Company's standard flush 2" thick cubicles (Type H-1).

1-2 The cubicle shall be constructed so as not to show any exposed screws.

1-3 The cubicle shall be open 12" from the floor, steel to a height of 42" and glass above to the cornice height. The panels shall be fastened to the wall approximately 12" off the finished floor and at a point opposite the cornice.

2 Shop Drawings

Shop drawings shall be submitted in duplicate showing the proposed cubicle arrangement, elevations, gauges of various members, finish and details of any special conditions before fabrication.

3 Materials

All concealed structural members shall be of steel. All exposed sheet metal shall be cold rolled furniture stock steel that has been properly annealed and process levelled and has smooth, clean surfaces. Gauges specified below are U. S. Standard and are the minimum that will be acceptable under the contract.

4 Posts

Posts shall be 2" square No. 16 Ga. tubular, with a groove on one side to receive glass. Posts shall be plain without any dust collecting recesses.

5 Floor Shoes

All posts that rest on the floor are to have a floor shoe 2½" high, of white bronze — polished, or brass chromium plated castings. The shoe shall have adjustment provision to take care of irregularities in the floor.

6 Panels

Panels shall be 2" thick flush with the face of the post. The top and bottom of the panel shall be formed to present a non-dust collecting finished nosing. This nosing shall be integral with the panel. No separate rails shall be permitted. Panels shall be No. 20 Ga. steel reinforced, with horizontal steel members spaced approximately 12" apart and electrically welded to panel every 3". Inside of panels are to be coated with non-hardening fibre bearing mastic, to prevent metallic noise, and packed solidly with inorganic, vermin-proof insulating filler material, with a minimum density of 3 lbs. per cubic foot. Edges of panels shall be formed to interlock on the glass groove face of the post.

7 Cornice

Cornice shall be No. 18 Ga., continuous over the top of the panel, of a plain design. The same cornice shall also be used as a head rail over the front of the cubicle. Cornice shall be arranged to receive ball bearing, non-friction type curtain hanger on either side of the glass, also in the head rail when it is used as such. The cornice shall be capped with a removable cover, sealing it against dust and dirt

8 Curtains

Curtains shall be furnished "by others."

9 Electrical Provisions

Provisions shall be made for easy wiring through the cornice and the posts.

10 Finish

10-1 All surfaces shall be properly cleaned of all oil, grease and dirt, and shall be dry before the application of finish. All surfaces shall then receive a coat of rust-resisting paint, baked on and sanded smooth. Flat color finish shall consist of two coats of color as specified, each baked.

10-2 Grained finish shall consist of one coat of rust-resisting paint, baked on, followed by graining, after which two independent coats of clear flat varnish or lacquer shall be applied.

11 Glass and Glazing

Glass shall be as specified on the drawings and a minimum of 1/4" thick and shall be furnished and set by this contractor. Special metal cubicle putty shall be used and the glass bedded in putty and back puttied. Glazing stops shall be of the "snap-on" type without the use of screws. Putty shall generally match the color of the cubicle.

12 Erection

12-1 All cubicles shall be erected plumb and true. The unevenness in the floor shall be compensated for with the adjustment provision in the floor shoe, to insure level of all horizontal lines.

12-2 Cubicles shall be erected on top of finished floor covering. All metal surfaces shall be cleaned and left free of scratches or abrasions.

12-3 Glass shall be cleaned by others after putty has properly set.

SNEAD & COMPANY
JERSEY CITY • NEW JERSEY



Snead Mobilwalls, Type SF-3, in a modernistic office.

SOME NATIONALLY KNOWN USERS

Acacia Mutual Life Ins. Co.
American Can Company
American Home Products Corp.
Bakelite Corporation
Bankers Trust Company
Bayer Company
Bell Telephone Laboratories
Benton & Bowles Advertising Co.
Bigelow Sanford Carpet Company
Boston Edison Company
Boston Public Works Building
Bowery Savings Bank
Calco Chemical Company
Carnegie Institute of Technology
Chesapeake & Potomac Company
Columbia University
Columbia Presbyterian Hospital Group
Cornell Medical Center
Dartmouth University
Distiller's Limited
Electrolux Incorporated
Fireman's Insurance Company
Fidelity & Deposit Co. of Maryland
Insurance Co. of North America
International Printing Ink Corp.
Intertype Corporation
Library of Congress Annex
Lumbermen's Mutual Insurance Co.
Macy, R. H. & Company
Medical College of Virginia
National Broadcasting Company
New York Academy of Medicine
New York Curb Exchange
New York Dock Company
New York Edison Company
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Prudential Insurance Company
Regal Shoe Company
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Standard Oil of New York
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Union Carbide and Carbon Co.
U. S. Rubber Company
Western Electric Company
Western Union Company
S. S. White Dental Mfg. Co.
W.O.R. Broadcasting Company
Yale University

TAKAPART PRODUCTS COMPANY

Manufacturers of Takapart Portable Partitions

114 East 32nd Street
NEW YORK, N. Y.

Products

PATENTED TAKAPART OFFICE PARTITIONS and RAILINGS in *Steel, Wood* and *Asbestos.*

What Takapart Is

A high grade portable partition consisting of standard interchangeable units to take care of any layout both horizontally and vertically, and designed so that absolute rigidity is obtained irrespective of the length of the partition involved. No long continuous cornices or bracing are required, for each section unit is complete in itself—complete cornice, chair rail, panel, and base. Section units and section door units are of standard widths and are interchangeable with each other.

Complete details and working specifications sent on request.

Recent Installations

Stone & Webster Building Corporation
New York Telephone Company
New Amsterdam Casualty Company
Underwood Typewriter Co.
Mt. Sinai Hospital
New York Curb Exchange
Central Hudson Gas & Electric Corporation
Public Service Electric and Gas Company
Colgate-Palmolive-Peet Company
Westchester Lighting Company



General View of Executive Offices of a Prominent Shipbuilding Corporation

This unusually long installation illustrates that irrespective of the length involved, *Takapart* is always as straight as a die

One or a Thousand Sections Equally Rigid

Takapart units are joined together and held in a rigid upright position by a structural steel member provided at every unit. This structural steel member is adjustable to various ceiling or beam heights and serves as an invisible support for the finished ceiling filler above the cornice line



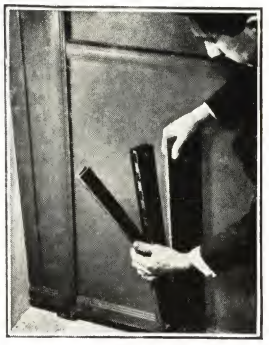


Units Added in Any Direction with No Corners, Right Angles or Splices to Cut or Fit

Reducing or enlarging an office with *Takapart* means just adding or deducting units without cutting of any part whatsoever, as the individual strength members for each unit make continuous longitudinal cornices unnecessary

Soundproof and Lightproof—Adjustable Wall Connection Members

Adjustable to any regular or irregular wall without cutting and fitting. Loose wall connection members are eliminated because the metal tongues force the rubber channel to adapt itself to the contour of the wall. The flexible rubber channel leaves no openings between the wall and partition. This construction eliminates the necessity of taking dead accurate dimensions for partition layouts



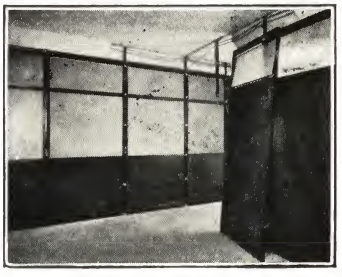


Puttyless Glass Moulding

Watch any glazier remove a light of glass that has been puttied in place and you will appreciate what an advantage it is to remove and install glass without putty. Clear glass changed to obscure or vice versa, when desired, is a simple matter when *Takapart* is used

Electric Wires Do Not Interfere with Flexibility of Units

There are three holes in the structural steel members that serve as a runway above cornice line for electric cables. They are carried along to the location for desired switch or outlet, where they do not interfere with interchangeability of door and section units. The partition retains complete flexibility while the electric cables are always accessible. The usual method is to draw cable through section rails or base, thus destroying the interchangeability of units



ALL-METAL PARTITION CO., INC.

TELEPHONE
CHelsea 2-4020-1

FACTORY AND OFFICE
144-150 West 18th Street, NEW YORK, N. Y.

SALES AGENTS
JERSEY CITY, N. J., Atlas Steel Products Co., 19-21 Tuers Avenue
PHILADELPHIA, PA., Kelly Building Products, 1418 Walnut Street
WASHINGTON, D. C., Capitol Products Co., 1222 Connecticut Avenue
BOSTON, MASS., J. G. Waxman, 72 Granite Street

For "All-Metal" Office Partitions, see File Index

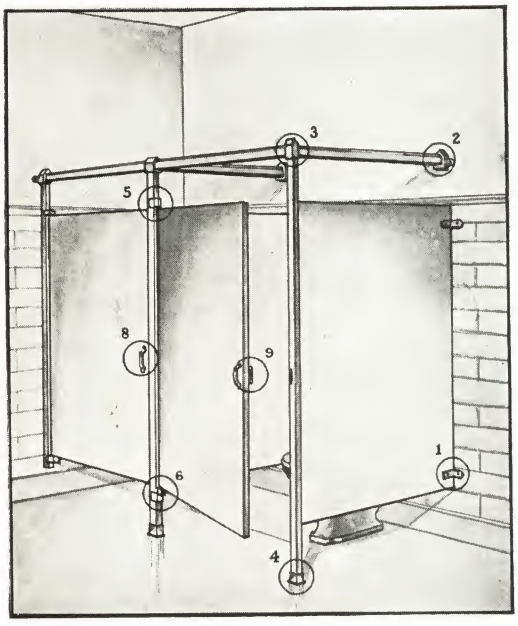
"ALL-METAL" TOILET, DRESSING ROOM AND CUBICLE PARTITIONS
Flush and Panel Types

"All-Metal" partitions are the product of years of experience in the partition line. They combine neatness and beauty in appearance, ruggedness and durability in design and a low initial cost. They are built to meet every demand for sanitation. "All-Metal" partitions are adaptable for office and public buildings, schools, churches, factories, hospitals and private homes.

Flush Type

"All-Metal" Flush Partitions and Doors are formed of two sheets of full pickled cold rolled stretcher level furniture steel (20-gauge for large panels, 22-gauge for small ones) cemented at high pressure to a sound deadening fibrous core and reinforced with a square tubular member of heavy gauge. All joints are permanently interlocked and sealed against moisture and condensation.

Partition slab is then interlocked and welded to a 2-in. square 16-gauge post forming a sturdy, rigid and indestructible unit.



Construction Features (Both Types)

Headrails—Seamless tubing 1½x2½-in. 16-gauge, sanitary shape.

Partition Wall Connector (1) Headrail Wall Connector (2) and Headrail Post Caps (3)—Heavy cast design. Malleable iron.

Post Shoe (4)—Heavy cast bronze chromium plated; iron, enameled; or cast aluminum polished.

Upper and Lower Door Bracket (5 and 6)—Made of heavy cast bronze or malleable iron and fastened to post by through bolts and cap nuts. Standard finishes are enameled or chromium plated.

Gravity or Spring Hinges (6)—Standard with doors and designed for quiet closing or to remain open at any angle.

Door Strikes (7)—Heavy brass and resilient rubber specially designed to take the shock of the closing door.

Door Pull (8)—Made of cast bronze, chromium plated.

Sliding Bar Latch (9)—Solid bronze chromium plated made extra heavy to eliminate bending and twisting of slide bar.

Door pull and bar latch are fastened to door by through bolts and cap nuts.

Coat Hooks (10)—Two-prong, and are made of cast bronze, chromium plated. Compartments with inswinging door have rubber tipped coat hooks to act as bumpers.

Finish— All partitions, either flush or panel, are first carefully sanded and washed with benzine, then filled and primed with a gray primer baked on.

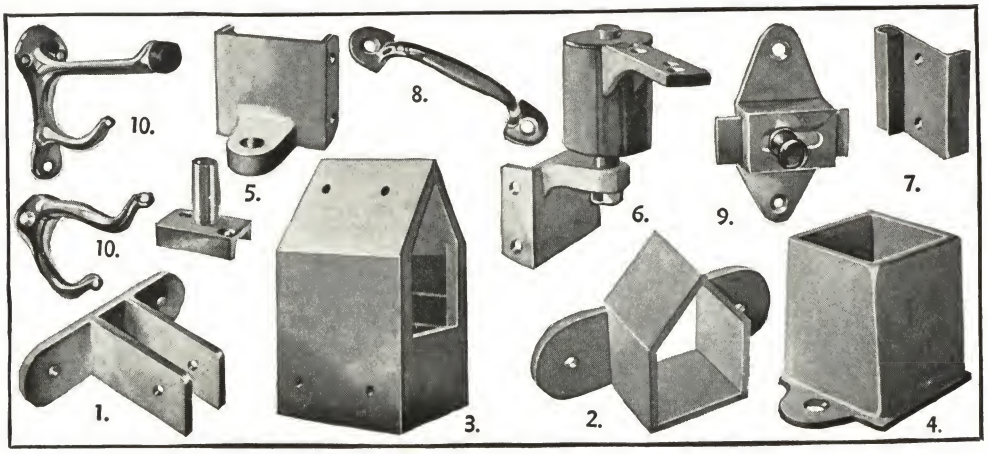
Partitions can also be had in any standard finish or special finish (either lacquer or baked-on enamel) at a slight additional cost.

Consultation Service

The "All-Metal" Service Department will always co-operate and advise on partition problems and gladly submit estimates. Catalog sent on request.

Panel Type

"All-Metal" Panel Partitions are built with top and bottom rails of sanitary shaped tubing and 2-in. square tubular front and back posts. Panel is formed of a single sheet of stretcher level, cold rolled, furniture steel inserted into all members for their entire depth. They are then interlocked and welded to form one solid unit.





A Typical Installation of "All Metal Flush" Toilet Enclosure



"All Metal Flush Door" Installation on Marble Compartments

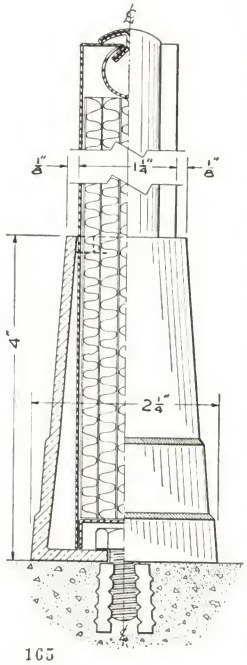
"ALL METAL DELUX" TOILET ENCLOSURES

The "All Metal Delux", the most modern of stall enclosures, are designed to meet the exacting requirements of the architect or owner who wants an enclosure in keeping with the harmony and beauty of the modern rest room.

"All Metal Delux" is installed without posts or headrails. The specially constructed flush front stile, set and secured in a wide base heavy bronze shoe (anchored to sub-floor), has eliminated the use of further supports. Dividing partitions are interlocked to front stiles by our exclusive four-hook tension grip, and further secured with a heavy bronze top casting. They are held at wall by fittings of malleable iron, finished to match partitions, designed for sanitation and adjustability.

Hardware consists of Universal gravity hinges, slide bar latch, strike, door pull, and combination coat hook and bumper. All hardware, shoes, and front fittings are modernistic in design and of heavy bronze, chrome-plated.

Partitions can be had in a variety of DuPont "Dulux" finishes, either in single solid color or in combination to match any color scheme chosen.



"All Metal Delux" front stiles are flush type, 1¼ ins. thick, formed of two sheets of full pickled, cold rolled, stretcher level, furniture steel, cemented with waterproof cement at a high pressure to a sound-deadening core.

Edges are interlocked with No. 20 gauge (half round or) crown steel die-drawn moulding, with all corners mitered, welded and ground to a smooth finish.

All joints are permanently sealed and locked against moisture and condensation with a continuous die-drawn circular inner tube which is interlocked with the crown moulding.

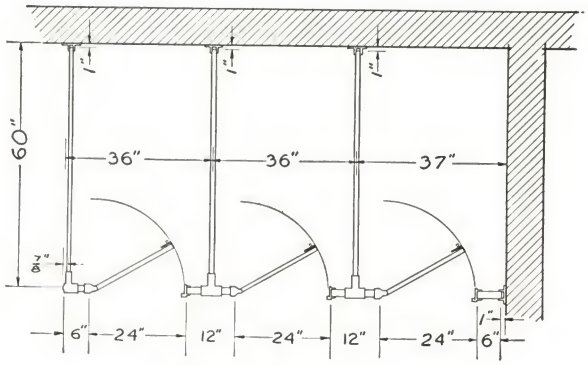
Dividing partitions and doors are 1 in. thick and are same construction as front stiles.

Shoes are wide at base and 4 ins. high. They are permanently anchored to sub-floor by concealed expansion bolts.

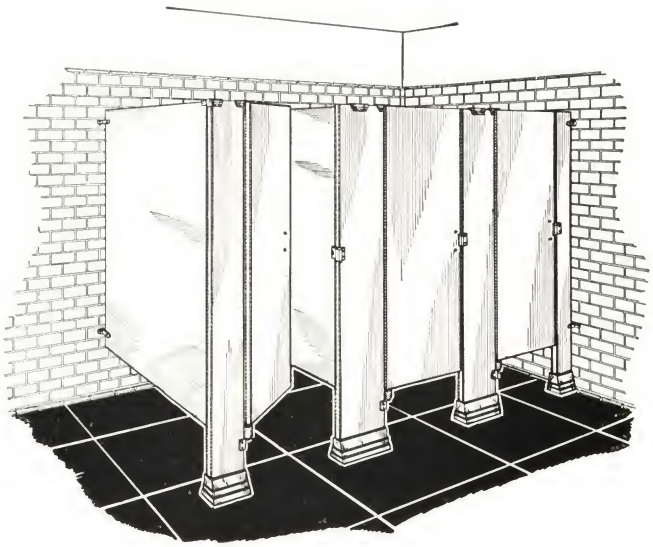
Front stiles are set in shoes and are rigidly secured therein.

Doors are hung on Universal gravity hinges with inverted top pivots. They are exceptionally quiet in operation and can be held at any position required.

Front stiles, dividing panels, doors, hardware and shoes, are designed and built with utmost care and engineering skill. Nothing has been omitted or neglected to furnish a job of outstanding beauty, maximum efficiency and low initial cost.



FLOOR PLAN



AMERICAN SANITARY PARTITION COMPANY

Metal Partitions and Doors, Shower Compartments, Hospital Cubicles

TELEPHONE
STillwell 4-5987-8

37-16 22 St., LONG ISLAND CITY, NEW YORK, N. Y.

REPRESENTATIVES

WESTERN NEW YORK, Lakewood Supply, Inc., P.O. Box 755, Jamestown, N. Y.—Telephone, Lakewood 3-925
EASTERN PENNSYLVANIA AND SOUTHERN NEW JERSEY, James J. Bannon, 1210 Commercial Trust Bldg., Philadelphia, Pa.—Telephone, Rittenhouse 6264
WESTERN PENNSYLVANIA, Henry Johns, 1609 Investment Bldg., Pittsburgh, Pa.—Telephone, Grant 1770
VIRGINIA, L. C. Tolson Company, Inc., Exchange Bldg., Sixth and Franklin Sts., Richmond, Va.—Telephone 3-1632
NORTHERN NEW JERSEY, William A. Cawley, 135 Cedar St., Nutley, N. J.—Telephone, Nutley 2-2308
NORTH AND SOUTH CAROLINA, The Flowers Seating Co., Hickory, N. C.—Telephone 453-L
NEW ENGLAND, Herbert A. Hambro, 11 Old South Bldg., Boston, Mass.—Telephone, Liberty 8895

AMERICAN SANITARY PARTITIONS AND DOORS FOR TOILET ENCLOSURES

Thoroughly modern in construction, sanitary in every respect, American Sanitary Toilet Partitions and Doors are designed for installation in every type of building. They are especially recommended for office and public buildings, schools, factories, hospitals, churches and similar locations where durability, year after year, is an important factor.

In order to meet the requirements of various installations, our partition and door units are made in three different designs and qualities. Each of these types, as described on this and following pages, represent the highest quality of material and workmanship in their respective price range.

FLUSH INTERLOCKED TYPE ENCLOSURE

This style is a strong, durable and absolutely sanitary enclosure recommended for schools, churches, bathhouses and public buildings.

The panels and doors are ⅞ in. thick and built the same as the panels and doors of our Headless Type. The panels, however, are supported by posts made of 16-gauge tubing 1¾ inches square. This tubing is forced into a special continuous locked joint provided in the partition. All corners are welded. The headrail is likewise 16-gauge tubing, 1¾ inches square.

Headrail connectors and wall brackets are heavy pressed steel. Post bases are made of heavy bronze castings with double floor fastenings or single concealed fastening—enameled to match partition or chromium plated. Hardware of modern design is heavy bronze, chromium plated.

Flush Type Specifications

Material—Face plates of partitions and doors up to 20 sq. ft. in size shall be of 22 gauge full pickeled, cold rolled and patent leveled furniture sheets.

All mouldings shall be of 20 gauge.

All tubing and headrail shall be of 16 gauge, square.

Backs, tops, and end plates for pipe spaces shall be of 16 gauge single sheet construction.

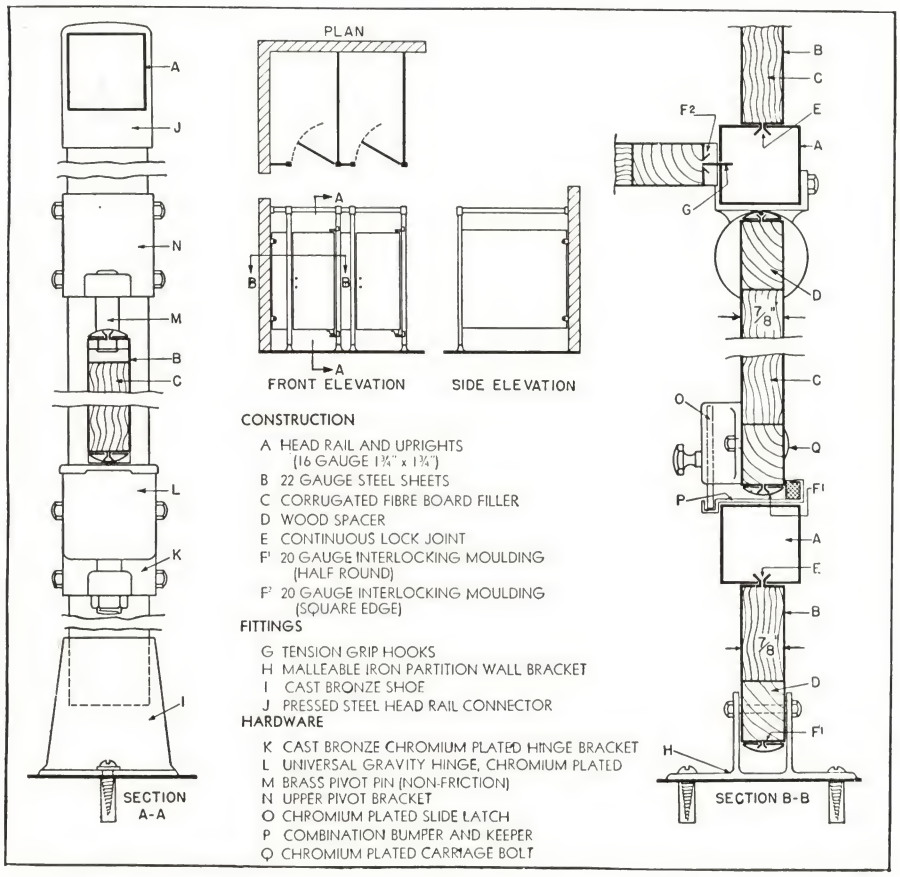
Top post fittings shall be heavy stamped steel securely fastened with set screws. Wall fittings of heavy stamped steel, or malleable iron shall be adjustable.

Foot castings shall be of cast bronze adjustable to floor variations.

Finish—All material shall be thoroughly cleaned and sanded and given one coat of rust-resisting primer and one finish coat of our standard color, each coat baked on separately. Special finishes at slight additional costs.

Hardware—Shall consist of a universal gravity hinge, hinge bracket, upper guide pin, throw or slide latch, bumper and keeper, and rubber tipped coat hook. All hardware of heavy bronze, chrome plated over nickel plate.

General—Design, construction and finish of partition, doors and hardware shall conform to specifications of the American Sanitary Partition Company, Long Island City, N. Y.





PANEL TYPE PARTITION AND DOOR ENCLOSURES

The popular Panel Type is extensively used wherever a strong but economical construction is required.

The partitions are built of 16-gauge furniture steel inserted in a tubing frame consisting of two uprights 1¾ in. square and two horizontal V-shaped members (known as sanitary tubing) 1⅛ x 2⅜ in. Both the metal sheets and the sanitary tubing are forced full depth into horizontal members locked and welded on all four corners—thereby making a single, rigid unit. The doors on this type enclosure are flush.

Headrail connectors and wall brackets are heavy pressed steel. Post bases of heavy bronze castings with double floor fastenings or single concealed fastenings—enameled to match partition or chromium plated. Hardware, chromium plated.

Panel Type Specifications

Material—Steel sheets of partitions shall be 16 gauge full pickeled cold rolled and patent leveled.

V-shaped sanitary tubing shall be 16 gauge, 1⅛ in. in width, and 2⅜ in. in height.

All posts and headrail shall be 16 gauge, 1¾ x 1¾ in. square.

Doors for this type of toilet enclosure shall be flush. Made of two 22 gauge cold-rolled steel sheets formed "Z" shaped around edges, spaced properly and cemented to a core of laminated corrugated, fibre board, approximately ⅞ in. thick; a half-round interlocking moulding shall be forced around the edges and welded on the corners to insure a uniform tension grip.

Fittings—Top post fittings shall be heavy stamped steel securely fastened with set screws.

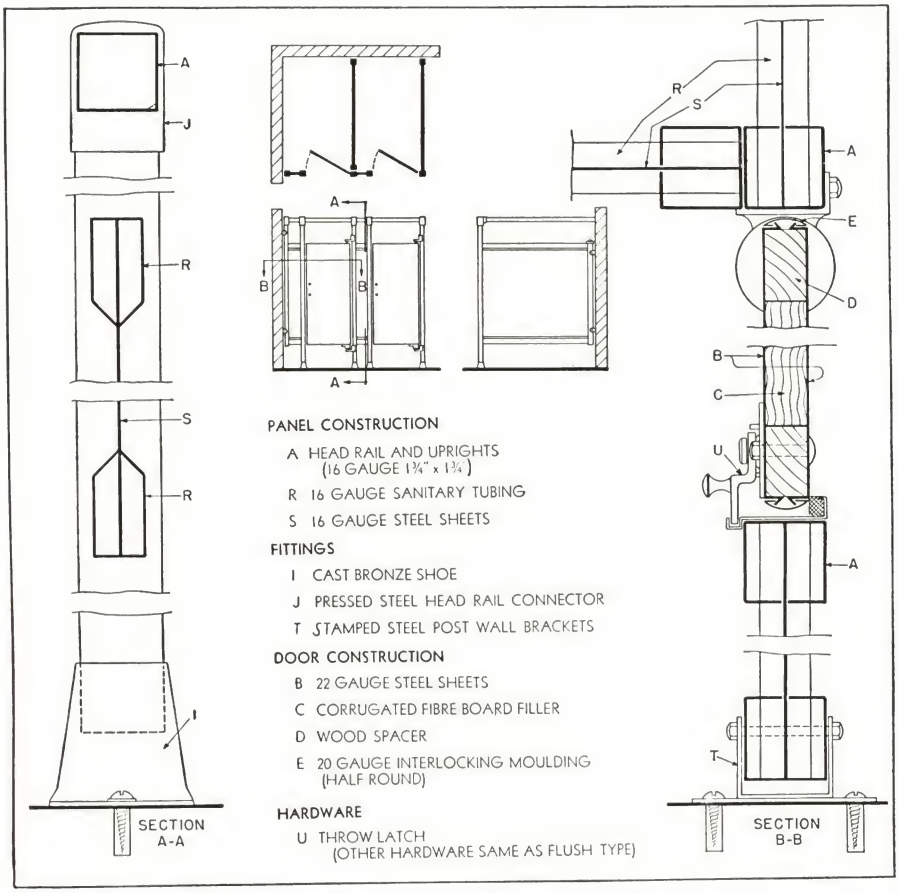
Wall fittings of heavy stamped steel or malleable iron, shall be adjustable.

Foot castings shall be of cast bronze adjustable to floor variations.

Finish—All material shall be thoroughly cleaned and sanded and given one coat of rust-resisting primer and one finish coat of our standard color, each coat baked on separately. Special finish at additional costs.

Door Hardware—Shall consist of a universal gravity hinge, hinge bracket, upper guide pin, throw latch, bumper and keeper, and rubber tipped coat hook. All hardware of heavy bronze, chrome plated over nickel plated.

General—Design and construction of partition doors, and hardware, shall conform to specifications of the AMERICAN SANITARY PARTITION COMPANY, Long Island City, N. Y.



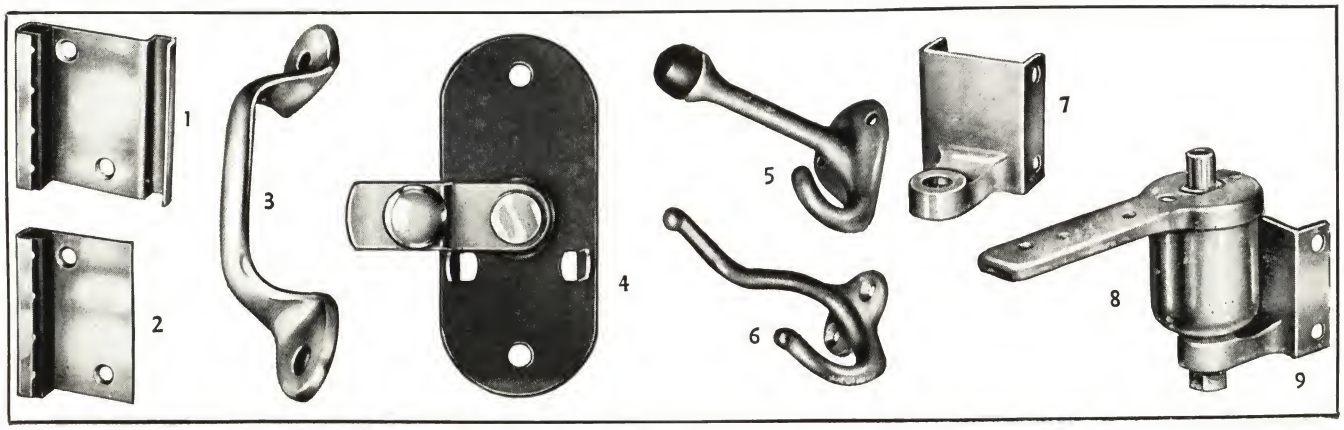


AMERICAN SANITARY PARTITION HARDWARE

Standard hardware, designed to meet the requirements of each type partition, includes items listed and illustrated below. (All hardware is bronze, chromium plated over nickel.)

Special Hardware, including Silent Check Hinges and Coin Locks can be furnished at additional cost for all types of partitions.

(1) Door Strike—Inswing.
(2) Door Strike—Outswing.
(3) Door Pull.
(4) Throw Latch.
(5) Rubber Tipped Coat Hook.
(6) 2 Prong Coat Hook.
(7) Upper Pivot Bracket.
(8) Ball Bearing Gravity Hinge.
(9) Hinge Bracket.



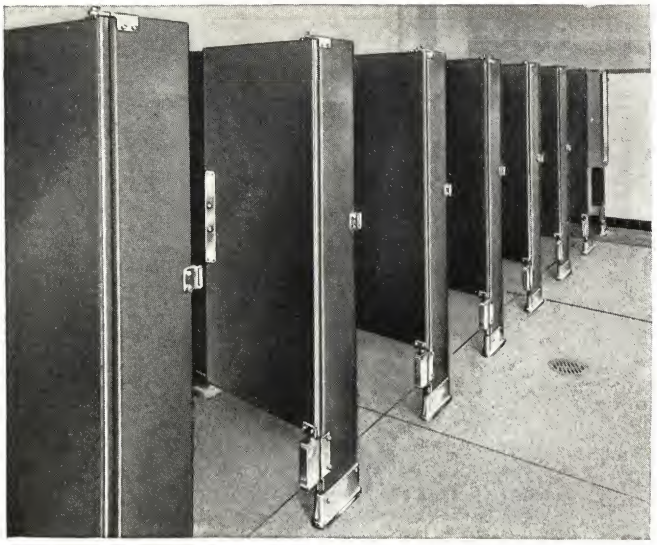
HEADLESS TYPE PARTITION AND DOOR ENCLOSURE

Our Headless Type Toilet Partition is, we believe, the most recent development in metal toilet enclosures. It is highly recommended for modern buildings requiring the finest equipment.

The panels and doors are built ⅞ in. thick of 20-gauge furniture steel or any other metal desired. The metal is formed Z-shape around the edge, spaced properly and cemented to a shock and sound-deadening core. An interlocking moulding, of 20-gauge steel, is forced around the edge and welded on all corners. This insures a firm, uniform tension grip.

Partition and stile wall brackets are of heavy malleable iron castings. Bases are heavy bronze castings, chromium plated, with two concealed floor fastenings. Three tension grip hooks are provided for hook-up to front stile. Hardware of modern design is heavy bronze, chromium plated.

In addition, our Headless Type Partition is built with a front stile 1¼ in. thick. This stile is provided with a channel spacer —thus leaving sufficient space for 1-in. reinforcing bars which fasten to the floor and ascend approximately 30 in. into stile. This construction gives the necessary strong floor connection. Three openings, suitably reinforced, are provided to receive the tension grip hooks.

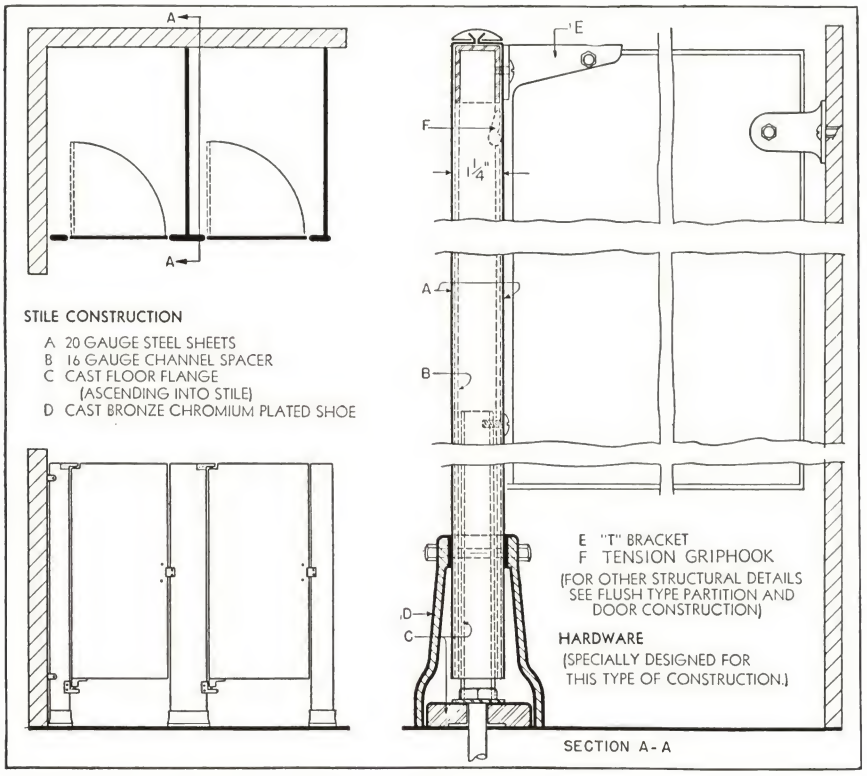


Headless Type Specifications

Material—Face plates and moulding shall be cold rolled patent leveled furniture stock of 20 gauge on all stiles and panels over 48 in.; on doors and panels under 48 in. shall be 22 gauge.

Cores shall be laminated corrugated fibre board approximately 1¼ in. thick for stiles and ⅞ in. for doors and panels.

The floor plate with ⅛ in. channels shall ascend approximately 20 in. into stile and fasten to floor with ⅜ in. machine bolts and expansion shields. The cover shoe shall be bronze chromium plate or nickel alloy polished. All fittings shall be cast brass, adjustable and enameled to match partitions.



Workmanship—Doors, panels, and stiles shall be of two sheets formed Z shaped around the edges, spaced properly and cemented to core under 24-hour pressure; a half round interlocking moulding shall then be forced around the edges and welded on corners to insure a uniform grip.

All reinforcement for hardware shall be concealed. Three tension hooks shall be provided for panelstile hook-up with a T shaped casting on top for proper alignment.

Finish—All material shall be thoroughly cleaned and sanded and given one coat of rust-resisting primer and one finish coat of our standard color, each coat baked on separately. Special finishes at slight additional costs.

Door Hardware—Shall consist of a universal gravity hinge, hinge bracket, upper guide pin, throw or slide latch, bumper and keeper, and rubber tipped coat hook. All hardware of heavy bronze, chrome plated over nickel plate.

General—Construction of stile and panels shall be flush. There shall be no posts or headrails and shall conform to specifications of the American Sanitary Partition Company, Long Island City, N. Y.

TYPICAL INSTALLATIONS OF AMERICAN SANITARY PARTITIONS AT THE NEW YORK WORLD'S FAIR

Long Island Railroad Building
Independent Subway Station
The Administration Building.
The Permanent Utility Building
The Food Building
The Welfare Building
New York City Exhibition Building
The Distribution Building
The Motor Transport Building
The Marine Building
Police, Fire and First Aid Stations
Means of Distribution and Production Building
The Aviation Building
Du Pont Company Building
U. S. Government Building
Federal Buildings (E, F, K and L)
The Court of States
The Arts Building
The Permanent Boat Basin
Children's World
General Electric Building
Netherlands Building
And others

AMERICAN STEEL FURNITURE CO.

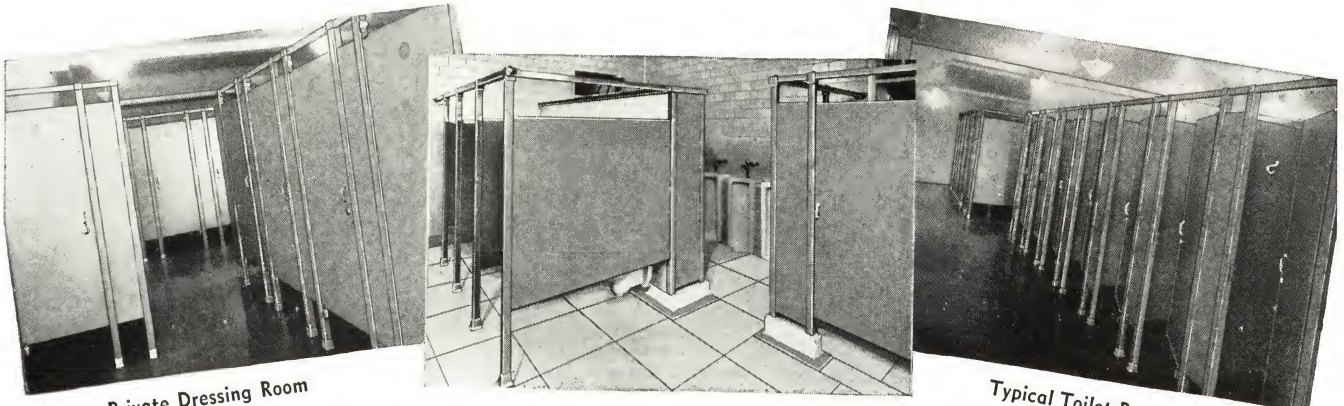
Toilet Partitions, Hospital Cubicles, Curtain Screening, Coin Pay Locks

TELEPHONES
GRamercy 5-0888-0889

FACTORY AND SALES OFFICE
730 Sixth Avenue, NEW YORK, N. Y.

Representatives in Principal Cities and Territories Available

AMERICAN SUPER-STEEL FLUSH AND PANELED TOILET PARTITIONS



Private Dressing Room

Typical Toilet Rooms

Super-steeL Partitions are fabricated from heavy furniture steel stock, full cold rolled and patent leveled. All formed parts such as posts, headrail and sanitary tubing are rolled shapes of 16 gauge. All hardware and castings are of bronze, chromium plated or nickel except headrail castings are malleable iron and finished to match enclosures unless otherwise specified. Foot castings are bronze chromed, and can be furnished painted to match enclosures. Door hardware, consisting of hinge brackets, gravity action hinge, pull and slide latch, are all bronze and polished to a chromed finish.

Finish—Standard colors are French Grey, Sage Green and Olive Green baked-on enamel or special finishes if desired.

Flush Type—Panels and doors are made to the thickness of 1 in. by cementing two formed sheets to an interior fiber core under dense pressure of 500 lbs. Flush type panels and doors are made a finished thickness of 1 in. by cementing two formed sheets in a fiber cover under extreme pressure and gripped internally by a ¾ in. continuous square tube binding the sheets by means of an interlocking strip. This modern method of construction avoids spot welds and insures a permanent shockproof door and panel. Panels are interlocked on inside with three continuous protruding wedge hooks to fit and lock into slotted uprights when assembled to full length to 2 in. square post, forming a sturdy and indestructible unit. By this method of construction, use of solder is avoided as the acid tends to encourage rust.

Note: Super-steeL Flush type partitions with their rigid, non-vibrating soundproof construction and sanitary design offer a smooth surface. All unnecessary offsets crevices, moulding and paneling are avoided to eliminate inaccessible surfaces and joints to retain dust, dirt, etc.

Paneled Type—Super-steeL Panels are assembled by inserting the panel sheet into sanitary tubing section which forms top and bottom rail. This unit is forced into front and rear posts and welded in place, making a rigid and durable panel. Doors furnished as described for "Flush Type" construction.

Headless Rail Type Partitions, Toilet Doors, Utility Enclosures, Special Toilet Partitions—*Of any description, furnished to conform with Federal or Architect specifications.*

AMERICAN SUPER-STEEL FLUSH HOSPITAL STEEL CUBICLES AND CURTAIN SCREENING

Hospital authorities have long recognized it's good hospital administration to afford open ward patients the much desired semi-privacy so easily created by using *American Super-steeL Hospital Cubicles.*

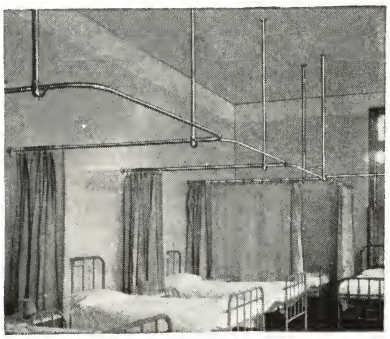
The semi-seclusion created by using *American Super-steeL Hospital Cubicles* has increased the satisfaction of patients, the prestige and income of hospitals. This quiet privacy considerably facilitates the work of the hospital staff because patients readily accede to treatment they formerly resisted because of embarrassment. *American Super-steeL Hospital Cubicles* also aid in facilitating segregation according to condition and ailment, permit cross ventilation without draft, lessen irritation, tend to promote orderliness and quiet, isolate and retard spread of contagious diseases.

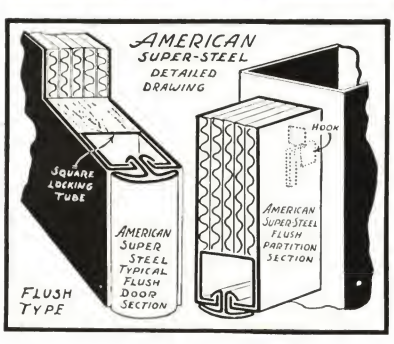
Sanitation is equally important—absence of unnecessary moundings insure this and makes *American Super-steeL Cubicles* especially easy to clean and keep clean. Adjustable rear connectors are employed to keep back edge away from wall. This also facilitates cleaning.

Foot castings, 3 in. high, are made of solid brass, chromium plated.

Ward screens are usually 7 ft. high over all and as deep as conditions require. Large screens require head-rail bracing at the front. Curtains will be furnished where desired. In the case of screens in children's wards a 5 ft. over-all height is ordinarily sufficient, and because of a comparatively shallow depth, normally 3 ft., they are usually made free standing. A special 6-in. solid white brass foot casting is supplied for support in such cases.

American Curtain Screening equipment is a really modern system of bedside screening that provides privacy—instantly, silently, without effort. Exclusive fittings allow the curtain to pass freely all points of support on curved track, which permits total enclosure of any bed with one curtain, and where curtains are used in series, all gaps are completely eliminated. The equipment is suspended from the ceiling, which assures free and unobstructed floor space. Equally suited for new building construction and for modernization programs.





Construction Department—Offers you wide experience in the installation of *American Curtain Equipment.* Where the equipment is to be erected by others, accurate and concise details of all fittings and parts are supplied together with complete installation instructions—which eliminates any confusion and permits the work to be done at a minimum of labor costs.

Curtain Rods—Made of 14-gauge, 1-in. o.d. brass tubing, chromium plated. All bends are machine made to a 6-in. radius insuring uniformity. Rods are connected to bends by means of female threads on insides; rods and bends are then connected by means of a solid brass nipple, resulting in no visible connection, such as screws, rivets and other objects which prove unsightly. Flanges, suspension brackets and adjustable tees are of *dropped forged bronze* with 3-in. bases tooled to an inside diameter of 1-in. to correspond with tubing.

American Fibre Wheel Roller Bearing Curtain Hooks—Made of brass, chromium plated with wheels of prepared compressed fibre, readily insures easy and noiseless operation of the curtains.

Curtains—Material either 8- or 12-oz. duck or jean cloth, preshrunk in accordance with the U. S. Navy Specifications, and equipped with white metal rust-resisting grommets, spaced 6 in. on centers. Curtains are available in white or in colors.

ATLANTIS STEEL PRODUCTS CORP.

Manufacturers of Steel Toilet Partitions, Hospital Cubicles and Shower Stalls

TELEPHONE
EVergreen 7-5268

OFFICE AND FACTORY
116 Troutman Street, BROOKLYN, N. Y.

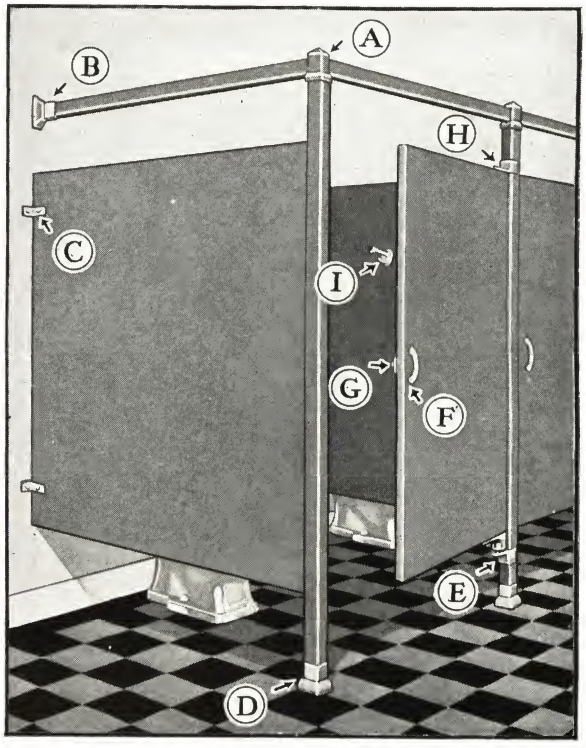
For page on Office Partitions, see File Index

Toilet Partitions

Atlantis Flush and Panel Type Stalls are designed to meet the requisites of the most exacting and critical Architects and Owners.

Atlantis Flush Type Toilet Partitions illustrated on this page are constructed of two sheets of 20-gauge furniture steel formed and interlocked on all edges with moulding as shown. Before moulding is applied, sheets are cemented under pressure over a sound-proof laminated fibre core.

Atlantis Partitions are sanded smooth, filled and finished in olive green or grey enamel baked on. We are equipped to furnish any special color or finish required.



Hardware and Fittings

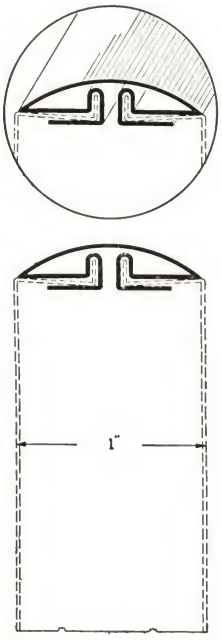
Headrails and wall fittings are made of malleable iron or bronze. All door hardware is of chromium plated brass and is tarnish proof. Hardware and fittings are extremely sturdy in construction and are guaranteed to keep all parts rigidly aligned. This will insure proper door operation.

Doors

The doors are 7/8 or 1 in. thick, covered with two sheets of copper bearing stretcher leveled furniture steel. Interlocking partitions are 1 in. thick; others are 7/8 in. Corners are mitred, welded and ground. Door stiles contain a laminated fibre core which deadens sounds. The door hinges are especially constructed to permit free action.

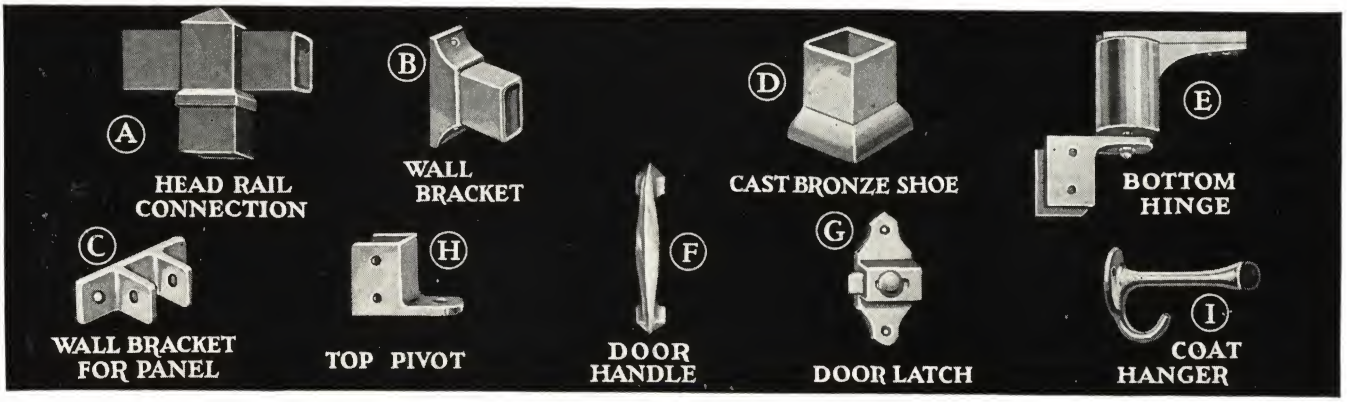
Specifications

Toilet enclosures shown on plans or listed in accompanying schedule shall be Atlantis [Flush] [Panel] Type Partitions and Doors, manufactured by Atlantis Steel Products Corp., 116 Troutman Street, Brooklyn, N. Y. Dimensions



Interlocking Partition

shall be as shown on plans or in schedule. Partitions and Doors shall be 20-gauge furniture steel, cemented under pressure over a sound-deadened laminated fibre core. Headrail connections and wall brackets to be made of heavy cast malleable iron. Hardware for doors shall be chromium plated on brass. Standard finish shall be baked enamel—olive green or gray (special finishes as desired). Enclosures to be installed in a neat and workmanlike manner, and left clean and satisfactory to the architect.



THE EBCO MANUFACTURING CO.

Ebco Metal Partitions for Toilet Compartments, Dressing Compartments and Screens, Panel and Flush Type Construction

COLUMBUS, OHIO

AGENCIES IN ALL PRINCIPAL CITIES

For Ebco Dishwashing Sinks and Drinking Fountains, see File Index

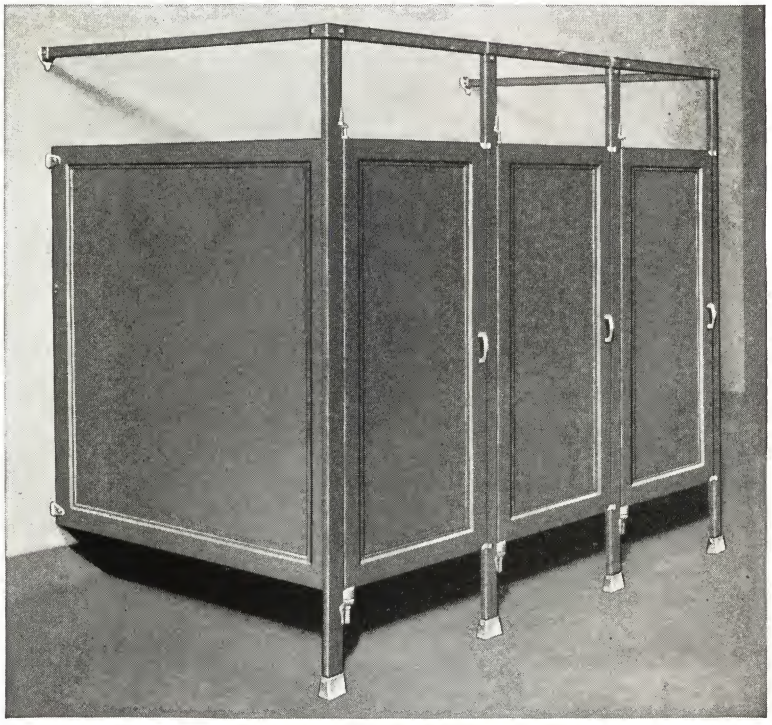
Ebco "Sturdibuilt" Partitions

Better appearance and longer life are part of EBCO "Sturdibuilt" partitions. (See illustration at right.)

The "Sturdibuilt" panel type construction consists of a heavy hollow metal frame, completely surrounding a heavy gauge steel sheet, electrically welded together, making a rigid panel or door.

Hardware—EBCO cast brass hardware is bright chrome-plated. It will not tarnish or lose its brightness with age. EBCO foot cover castings are cast brass, bright chrome-plated.

Finish—EBCO partitions may be had in "Krinlac" or smooth baked enamel in a number of standard colors. Prime coat only or special finishes may be had on specification.

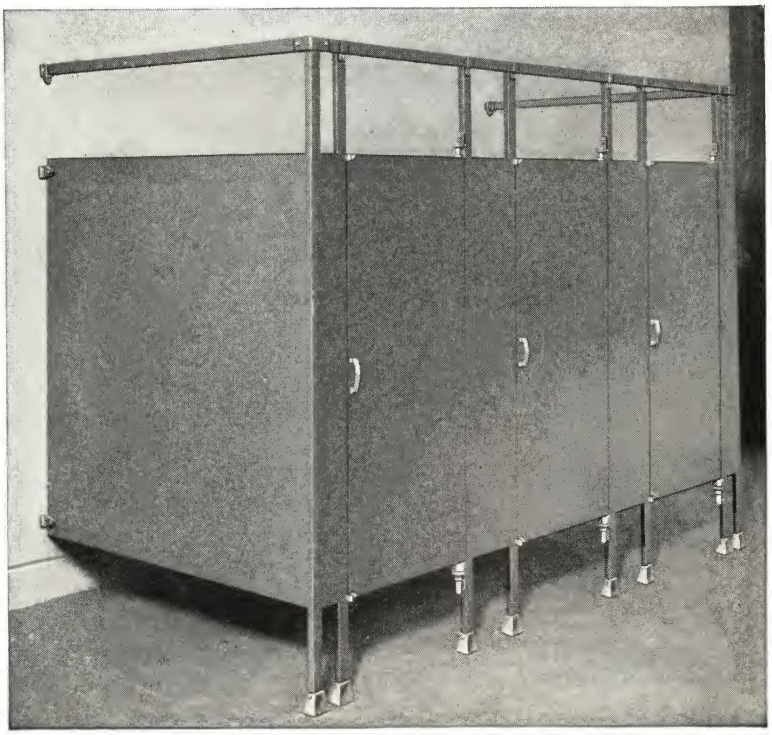


Typical Paneled Type Compartments

Ebco "Silentsteel" Partitions

Flush type partitions are becoming more popular because of their superior utility and appearance. (Note illustration at right.)

"Silentsteel" flush type construction consists of two steel sheets on the outside, the intervening space filled with silencing board, the steel and the core being cemented together into a solid unit.



Typical Flush Type Compartments

Ebco Steel Doors

EBCO "Sturdibuilt" or "Silentsteel" Doors make excellent enclosures when used with marble or slate. Special brass, chrome-plated hardware is available for all installations.

The EBCO hinge and door assembly is specially sturdy. A continuous half-inch cold rolled steel hinge rod running from the hinge body at the bottom of the door to the hinge pin at the top, keeps all parts in rigid alignment and insures perfect operation of doors. Hinge bodies are the inclosed gravity type with doors suspended on roller bearings. Doors may be set to any desired point between open and closed positions.

FIAT METAL MANUFACTURING COMPANY

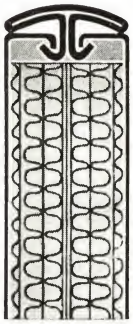
FACTORIES

1201 Roscoe St., CHICAGO, ILL. 21-45 Borden Ave., LONG ISLAND CITY, N. Y.

FIAT FLUSH TYPE TOILET AND DRESSING STALL PARTITIONS

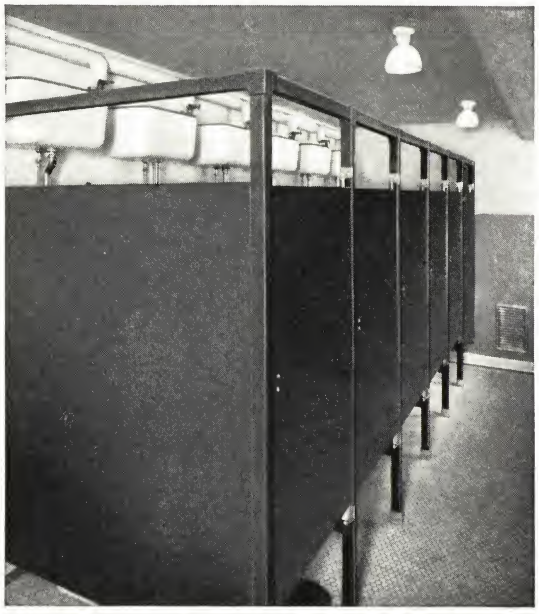


Installation of Fiat Flush Type Toilet Partitions Without Doors



Cross Section of Partition and Door

Showing corrugated fiber board filler and construction



Installation of Fiat Flush Type Toilet Partitions

GENERAL DESCRIPTION

Fiat Flush type partitions have been developed to meet the demands for the better type of toilet and dressing stall installations.

IMPORTANT—Fiat Flush type partitions are obtainable in three distinct metals:

(1) Finest quality full pickled copper bearing stretcher levelled furniture steel.

(2) Galvannealed steel (rust proofed) surfaces specially finished to insure proper adherance of final finish.

(3) Aluminum alloy (rust proof) sheets finished to insure proper adherance of final finish.

CONSTRUCTION FEATURES—Fiat Flush type partitions and doors are 1 inch thick made up of two sheets of metal spaced and insulated with corrugated fiber board filler cemented under uniform pressure to the metal.

Inner and outer surfaces of metal are finished with a high grade metal primer baked on before assembling.

Partitions and doors are bound and inter-locked under tension with drawn mouldings welded at corners. Note detail of re-inforcing, there are no exposed edges of metal.

The panels are inter-locked and welded to supporting posts forming an integral panel unit.

HARDWARE—See specifications and illustrations, page 2.

FITTINGS—Foot castings are of heavy cast brass self-draining—partition and headrail fittings are of aluminum—ordinarily finished to match the partitions. The foot castings can be furnished in nickel-alloy polished or chrome plated if required.

FINISH—All material is thoroughly cleaned and given a coat of metal primer baked on at the factory, (re-finished after installation by others) or finished at factory with final finish of baked on enamel in manufacturer's standard sage green or gray.

Other colors according to specifications at slight additional cost.

Complete erection blue prints and instructions are furnished for every installation.

ARCHITECTS' SPECIFICATIONS

(See note below for Aluminum Alloy, and Galvannealed steel partitions.)

All toilet stalls and dressing room compartments shall be Fiat Flush type as manufactured by FIAT METAL MANUFACTURING COMPANY (Chicago, Illinois, and Long Island City, New York). Construction, finish, design of partitions and doors, together with hardware shall conform with manufacturer's standards.

Partitions and doors to be fabricated from finest quality full pickled copper bearing stretcher levelled furniture steel of gauges as specified. Partitions 54 inches and wider of 20 gauge U.S.S., (Note: If less than 54 inches wide in 22 gauge) doors 22 gauge U.S.S., posts and headrail 16 gauge U.S.S. 1¾ inches square in section.

Backs, tops, and plates and doors for utility spaces shall be 16 gauge U.S.S. single sheet Panel type construction.

HARDWARE—See illustrations and specifications, page 2.

FITTINGS—Headrail and partition fittings of aluminum, finished same as partitions.

Foot castings of cast brass self-draining, finished same as partitions. (Chrome plated furnished if specified.)

FINISH—All material is thoroughly cleaned and given a coat of metal primer baked on at the factory, (re-finished after installation by others) or finished at factory with final finish of baked on enamel in manufacturer's standard sage green or gray.

Note: *(Other colors according to specifications.) Complete erection blue prints and instructions to be furnished by manufacturer.*

Note: *For* GALVANNEALED STEEL PARTITIONS *use same specifications as for copper bearing steel except insert the word* "GALVANNEALED" *steel in place of copper bearing steel.*

Note: *For* FIAT FLUSH TYPE ALUMINUM ALLOY PARTITIONS, *in place of the word copper bearing steel insert the words* "ALUMINUM ALLOY." *Doors and partitions 18 gauge B. & S. Posts and headrail 12 gauge B. & S. (Backs, tops, end plates and doors for utility spaces shall be 14 gauge B. & S. Panel type construction.)*

FIAT FLUSH TYPE DOORS ON MARBLE AND GLASS

Fiat Flush type doors and hardware have been developed for use on marble or glass toilet stalls—adding much to the serviceability and appearance of such enclosures.

IMPORTANT—Fiat Flush type doors are obtainable in three distinct metals:

(1) Finest quality full pickled copper bearing stretcher levelled furniture steel.

(2) Galvannealed steel (rust proofed) surfaces specially finished to insure proper adherance of final finish.

(3) Aluminum alloy (rust proof) sheets finished to insure proper adherance of final finish.

CONSTRUCTION FEATURES—Fiat Flush type doors are 1 inch thick made up of two sheets of metal spaced and insulated with corrugated fiber board filler cemented under uniform pressure to the metal.

Inner and outer surfaces of metal are finished with a high-grade metal primer baked on before assembling.

Doors are bound and inter-locked under tension with drawn mouldings welded at corners. Note detail of re-enforcing, there are no exposed edges of metal.

HARDWARE—See illustrations and specifications, page 2.

FINISH—All material is thoroughly cleaned and given a coat of metal primer baked on at the factory, (re-finished after installation by others) or finished at factory with final finish of baked on enamel in manufacturer's standard sage green or gray. Other colors according to specifications at slight additional cost.

Complete erection blue prints and instructions are furnished for every installation.

ARCHITECTS' SPECIFICATIONS—All toilet stall doors of sizes shown on plans shall be Fiat Flush type doors 1 inch thick with standard hardware as manufactured by Fiat Metal Manufacturing Company (Chicago, Illinois, and Long Island City, New York).

(See note below for specifications for Galvannealed steel and Aluminum Alloy doors.)

Doors to be of No. 22 gauge finest quality full pickled stretcher levelled, copper bearing furniture steel.

FINISH—All doors to be thoroughly cleaned and given a coat of metal primer baked on at the factory, (re-finished after installation by others) or finished at factory with final finished coat of baked on enamel in manufacturer's standard sage green or gray. Other colors according to specifications.)

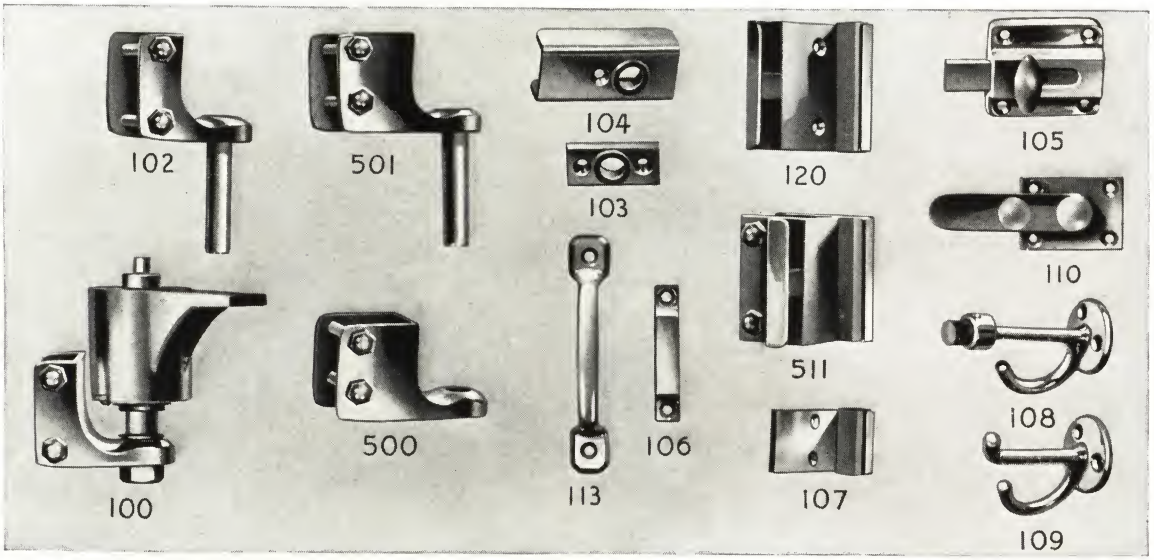


Installation of Fiat Flush Type Doors on Marble Partitions

All drillings of glass or marble for application of hardware to be done by glass or marble contractors from a template furnished by the manufacturer and in strict accordance with their instructions.

Note: *For Fiat Flush type Galvannealed steel doors, use the same specifications as for copper bearing steel except insert the words "Galvannealed steel."*

Note: *For Fiat Flush type Aluminum Alloy doors, specify doors to be of No. 18 gauge aluminum alloy.*



For Fiat Flush Type Partitions—Panel Type Partitions—and Doors on Marble and Glass Enclosures

No. 100—Bottom Gravity Hinge Barrel and No. 101—Bottom Hinge Bracket. No. 102—Top Hinge Bracket with Pin. No. 103—Top Door Plate for Panel Type Doors. No. 104—Top Door Shoe for Flush Type Doors. No. 120—Combination Keeper and Bumper. No. 105—Sliding Door Bolt. No. 110—Pendulum Latch. No. 108—Combination Coat Hook and Bumper. No. 109—Plain Coat Hook. No. 511—Combination Keeper and Bumper for Marble and Glass Partitions. No. 106—Door Bolt Keeper. No. 113—Door Pull for Outswinging Doors or for Entrance Screen Doors. No. 500—Bottom Hinge Bracket for Marble. No. 501—Top Hinge Bracket with Pin for Marble. No. 107—Door Bumper.

HARDWARE SPECIFICATIONS

FOR FIAT FLUSH TYPE PARTITIONS—PANEL TYPE PARTITIONS—AND DOORS ON MARBLE AND GLASS ENCLOSURES—

Fiat hardware is cast brass full chrome plated developed and designed exclusively for their specific requirements.

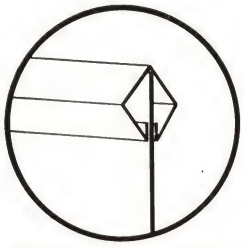
The Fiat universal ball-bearing gravity type hinges is provided with fully encased working parts of hardened steel *(working parts of stainless steel furnished at slight additional cost.)* The shaft of the gravity hinge barrel and the top door plate or shoe is provided with graphite impregnated fiber bushing bearings.

The doors can be adjusted to remain open or closed or in any desired position.

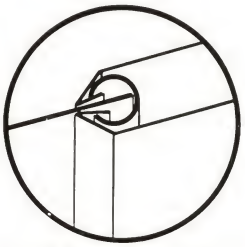
FIAT PANEL TYPE PARTITIONS



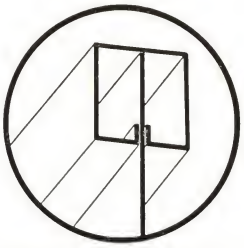
Installation of Fiat Panel Type Partitions



Diamond Shaped Panel Binder with Double Reinforcing Shoulders



Detail Showing Fiat's Door Stile Lock Construction



Detail of Front and Back Post Construction

FITTINGS—Foot castings are of heavy cast brass self-draining—partition and headrail fittings are of aluminum—ordinarily finished to match the partitions. The foot castings can be furnished in chrome plated finish if required.

FINISH—All material is thoroughly cleaned and given a coat of metal primer baked on at the factory, (refinished after installation by others) or finished at factory with final finish of baked on enamel in manufacturer's standard sage green or gray.

Other colors according to specifications at slight additional cost.

Complete erection blueprints and instructions are furnished for every installation.

ARCHITECTS' SPECIFICATIONS

All toilet stalls, shower enclosures and dressing rooms shall be (Fiat Panel type partitions as manufactured by FIAT METAL MANUFACTURING COMPANY, (Chicago, Illinois, and Long Island City, New York). Construction, finish, design of partitions and doors, together with hardware shall conform with manufacturer's standards. Partitions and doors to be fabricated of finest quality, full pickled, copper bearing, stretcher levelled furniture steel of gauges as specified, partition panels, door panels, posts and headrail No. 16 gauge U.S.S. Door stiles and top and bottom diamond shaped panel binder No. 18 gauge U.S.S. Backs, tops, and end plates where required for utility spaces No. 16 gauge U.S.S.

HARDWARE—See illustrations and specifications, page 2.

FITTINGS—Headrail and partition fittings of aluminum finished same as partitions. Foot castings of cast brass, self-draining, finish same as partitions (chrome plate furnished if specified).

GENERAL DESCRIPTION

Fiat Panel Type Partitions have for the last twenty years met the most exacting requirements of Architects, Engineers and Builders. Experience and engineering ability have brought out exclusive features of construction in this product.

Fiat Panel Type Partitions not only meet the ever present demands for economical installation, but also fulfill the requirements for sanitation, durability and long life.

Fiat Panel Type toilet stalls, dressing stalls, shower compartments, utility enclosures, janitors closets, entrance screens and urinal partitions are made from two distinct metals:

(1) Finest quality full pickled copper bearing stretcher levelled furniture steel—No. 16 gauge.

(2) Galvannealed steel (rust-proofed) surfaces specially finished to insure proper adherance of final finish—No. 16 gauge.

EXCLUSIVE FEATURES OF PANEL TYPE CONSTRUCTION—Note illustrated details of posts and sanitary diamond shaped top and bottom binder construction with reinforcing shoulders. This type of construction imparts added strength and also acts as a constant clamp or binder with spring tension effect locking the partition panel in place. Panels are inserted full depth into the posts and binders, and then welded.

Note exclusive features of construction of the doors.

Door stiles are of No. 18 gauge hollow metal construction with reinforcing shoulders and constant spring tension keylock. See illustration. The four corners of the doors are reinforced with heavy No. 16 gauge channels all mitered and fully welded and ground smooth.

HARDWARE—See specifications and illustrations, page 2.

FINISH—All material to be thoroughly cleaned and given a coat of metal primer baked on at the factory (re-finished after installation by others), or finished at factory with final finished coat of baked on enamel in manufacturer's standard sage green or gray.

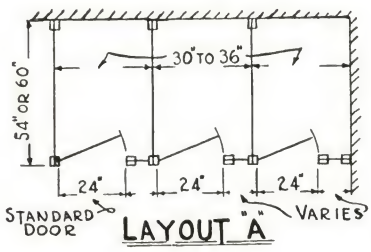
Note: *(Other colors according to specifications). Complete erection blue prints and instructions to be furnished by manufacturer.*

Note: *For galvannealed steel partitions, use same specifications as for copper bearing steel except insert the words "galvannealed steel" in place of copper bearing steel.*

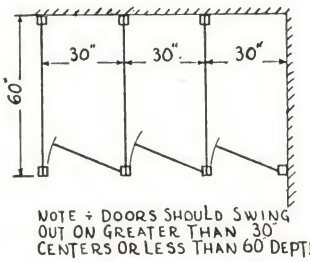


Installation of Fiat Panel Type All-Steel Dressing Stalls and Fiat Shower Cabinets

TYPICAL TOILET PARTITION LAYOUTS SUGGESTED BY FIAT

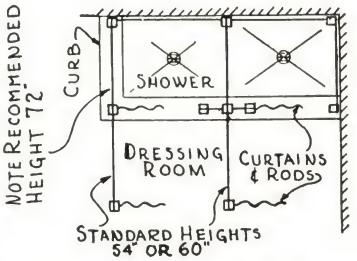


LAYOUT "A"

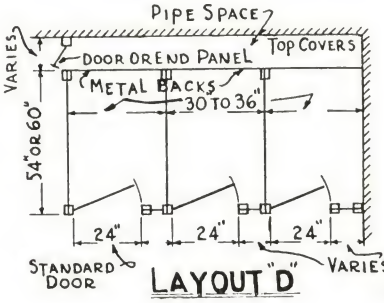


NOTE ✣ DOORS SHOULD SWING OUT ON GREATER THAN 30" CENTERS OR LESS THAN 60 DEPTH

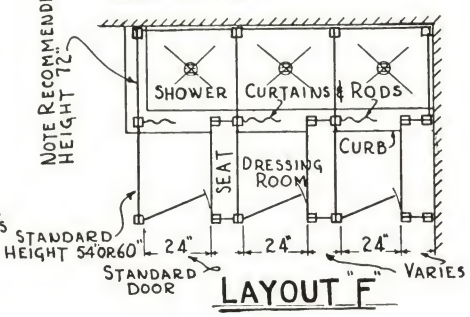
LAYOUT "B"



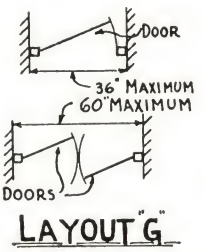
LAYOUT "C"



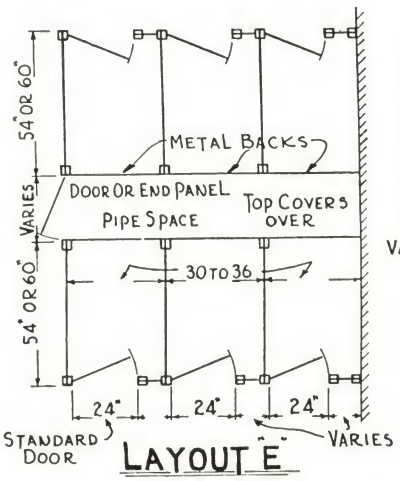
LAYOUT "D"



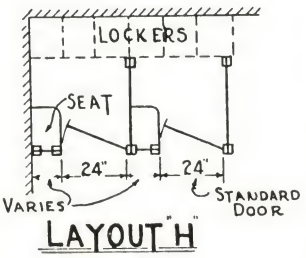
LAYOUT "F"



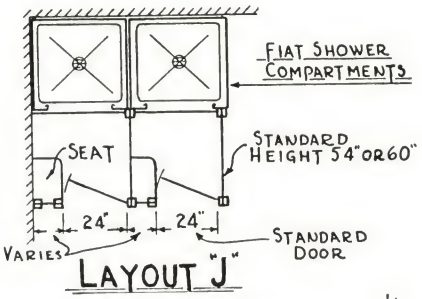
LAYOUT "G"



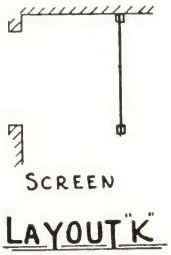
LAYOUT "E"



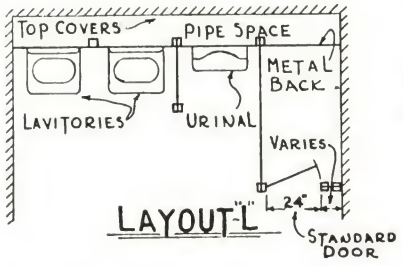
LAYOUT "H"



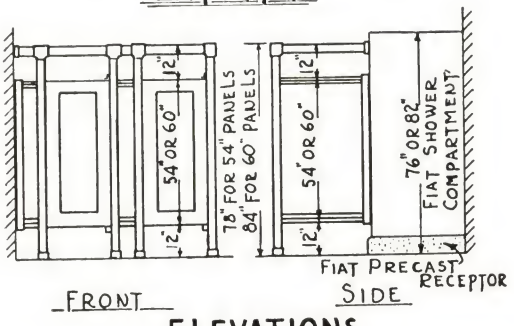
LAYOUT "J"



LAYOUT "K"



LAYOUT "L"



ELEVATIONS

FIAT RUST-PROOF GALVANNEALED STEEL PARTITIONS are recommended for shower partitions. Galvannealed steel has a smooth special finished surface prepared to receive the baked enamel finish. All types of Fiat Toilet Partitions may be constructed with this metal where its rust-proof qualities are essential.

NOTE

For Fiat Sanitary Leakproof Shower Cabinets, Glass Shower Doors, Glass Shower and Bath Tub Enclosures and Fiat Sanitary Leakproof Receptors, see File Index.

FLUSH-METAL PARTITION CORPORATION

Toilet Stalls, Dressing Room and Shower Compartments, Hospital Cubicles

TELEPHONE
STillwell 4-3380

22-14 40th Avenue, LONG ISLAND CITY, N. Y.

REPRESENTATIVES

ALBANY, N. Y., The Haefner Co., 254 Delaware Avenue—Telephone, Albany 4-8336
BOSTON, MASS., H. W. Mayers Co., 99 Chauncy Street—Telephone, Hubbard 1348
BUFFALO, N. Y., William Clouting Kraetz, 25 East Depew Avenue—Telephone, Parkside 4811
NEWARK, N. J., Boorman and Co.,, 717 So. Orange Ave.—Telephone, Essex 3-6333
PHILADELPHIA, PA., G. T. Voorhis Co., 220 South 16th Street—Telephone, Pennypacker 6491
WEST HARTFORD, CONN., R. V. Thomas, 22 Fern-Bel Lane—Telephone, West Hartford 32-1145

For Shower Compartments, see File Index

FLUSH-METAL PARTITIONS AND DOORS

FLUSH METAL Toilet Partitions and Doors are designed to meet every requirement modern building construction demands as to sanitation, beauty, color, durability, firmness, economy and *prompt delivery*. They are recommended for commercial buildings, public schools, churches, hospitals, etc.

FLUSH METAL Partitions and Doors are constructed of two sheets of 20-gauge furniture steel, cemented, under pressure, to a sound-deadening core, reinforced on all edges with 16-gauge steel channels, welded thereto, making a ⅞-in. flush, solid steel sanitary slab. Each partition slab is welded to its 2-in. square, 16-gauge supporting post, *making a single rigid unit*. Headrail is of 16-gauge, 1½x2½-in. special sloping top seamless tubing.

Fittings and Hardware

Headrail Wall Brackets (1); Headrail Connectors (2), and Partition Wall Fittings (3)—Made of heavy cast malleable iron. Note the two-screw fastening to wall for each casting—an original feature.

Upper and Lower Door Brackets (4) and (9)—Of heavy solid cast bronze fastened to posts with through-bolts and cap nuts. Note that the pivot pin is integral with the door.

Two-prong Coat Hook (5)—Furnished for dressing rooms and compartments with door swinging "out." Rubber-tipped bumper hook used when door swings "in." Both are of cast bronze.

Door Pull and Door Latch (6) and (7)—Of heavy cast bronze and fastened with through-bolts and cap nuts.

Door Strike (8)—Door strike with heavy resilient rubber bumper is securely held in place by six prongs deeply embedded in the rubber. The end of the bumper is bent around the post to take shock off screws—an exclusive feature.

Gravity Hinge (9)—Furnished with every door permits the door to remain open at any angle.

Post Base (10)—Solid bronze casting. Note the double fastening to the floor, providing additional strength and eliminating torsional vibration.

Finish—All the door hardware is available in standard painted color of job, or bronze chromium plated.



PANEL METAL PARTITIONS AND DOORS

PANEL METAL Toilet Partitions are constructed of two 16-gauge, 2-in. square uprights for vertical members, and two 1⅝x2¼-in. sanitary-shaped tubing for horizontal members. A single 16-gauge furniture steel sheet is forced into four members, full depth, interlocked and welded to produce a strong single panel. PANEL METAL Partitions are recommended where a sturdy, economical and moderately-priced installation is desired.

FLUSH METAL DOORS, Fittings and Hardware, as described are standard equipment and furnished at no additional cost.

FINISH AND DELIVERY

We furnish both FLUSH METAL and PANEL METAL Toilet Partitions in the following finishes:

(a) One prime coat of heavy gray oil primer baked-on; finishing coats by others.

(b) Prime coat and finished coat of gray or green baked-on enamel at factory.

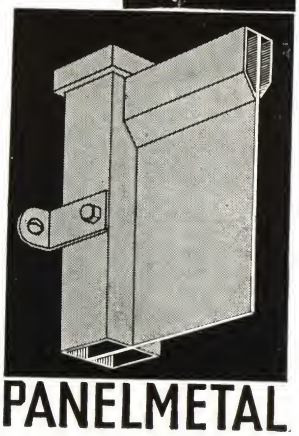
(c) Any other desired finish at slight additional cost.

Delivery and installation can be had in New York City and vicinity within three days after measurements are taken.





Flush-Metal Partitions in New Criterion Theatre, Times Square, New York, N. Y.



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FERROMETAL

PARTITIONS FOR MODERN BUILDINGS



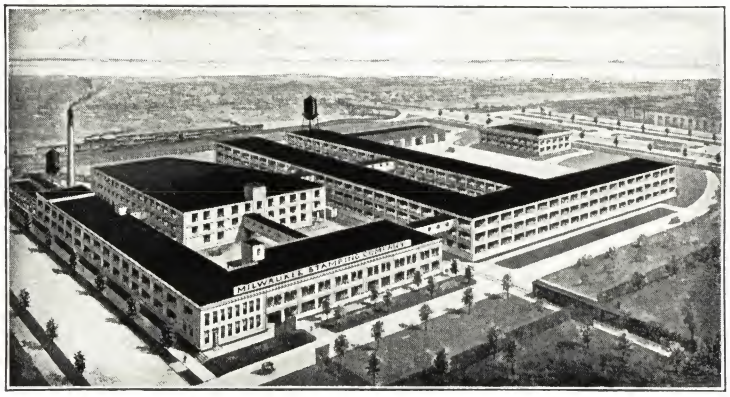
MILWAUKEE STAMPING COMPANY
MILWAUKEE » WISCONSIN

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Company • Product • Service

The purposes of this catalog are to set forth clearly, both in detail and specifications, essential data and information regarding metal partitions and doors for comfort rooms, shower and dressing rooms. It shows the wide and economical adaptability of Ferrometal design to modern building requirements.

This Company has had over 40 years of wide experience in metal fabrication, and is in a position to substantially back its product. This is demonstrated by its high financial rating.



Plant

Plant facilities are large, 150,000 square feet of production area, furnished with modern equipment for metal fabrication and finishing.

Product

A result of constant research and improvement in design and fabrication, Ferrometal Partitions kept abreast of the increasingly exacting demands for appearance and construction in the important field of sanitation.

Ferrometal Types of Partitions

	Page
Flush Top . . . Comfort Rooms, Dressing Rooms	4–6
Flush Steel and Aluminum . . . Comfort Rooms, Dressing Rooms, Screens	7–9
Panel Steel and Aluminum . . . Comfort Rooms, Shower and Dressing Inclosures, etc.	10–12
Cubicle Partitions . . . Hospitals, Offices . . .	14
Hardware . . . Standard and Special Adaptations	15
General Arrangement	13

Architectural Service

Ferrometal can offer the service of selected and experienced representation in over 100 key cities throughout the country (see back of cover for your local representative). Complete information regarding Ferrometal products, samples, detail drawings, consultation and advice relative to the usual and unusual problems and comparative cost data can be supplied promptly.

Factory Engineering Service

Ferrometal can offer suggestions for the practical adoption of Ferrometal partitions to many different types of installation. Special prepared bulletin and details on suggestions for following class of buildings are available upon request:

Schools, Educational Buildings, Dormitories
Commercial and Office Buildings
Factories and Industrial Buildings
Social and Recreational Buildings
Hospitals and Clinic Buildings
Post Offices and Government Buildings

Performance

Satisfaction of thousands of architects and contractors throughout the country is Ferrometal's indorsement as the modern partition for schools of all types, government buildings, office buildings and industrial plants. More conclusive are the continued specification and use of Ferrometal by the same architects, contractors and owners.

LOCAL REPRESENTATIVE

MILWAUKEE STAMPING COMPANY

Milwaukee, Wisconsin

FERROMETAL PARTITIONS

BATHE-RITE SHOWER CABINETS

LAWSON MILWAUKEE BUILDERS HARDWARE

Modern Comfort Rooms

Properly equipped comfort rooms invite sanitation and promote cleanliness. The modern effect can be substantially improved by using Ferrometal Partitions, designed for the purpose.

Flush Top

Ferrometal Flush Top offers a continuous flush appearance across the top of the enclosure. Void of all headrail or overhead structure Ferrometal Flush Top is especially recommended for Class A buildings where modern appearance and moderate cost are desirable. Especially suitable for T-type partition construction in combination with metal doors. Finished in solid or two tone color and furnished with full polished chrome plated hardware throughout. This type of construction has the advantages of inviting appearance, sanitary cleanliness, moderate initial investment, and low maintenance cost.

Flush Construction

Ferrometal Flush Steel or Aluminum partitions and doors are similar in construction to the high quality Flush Top. The overhead rail and vertical posts are an essential part of this design. Well recommended for Class A buildings, schools, institutions, offices and public buildings of all types. Used extensively by the U. S. Government in Post Offices, Federal Buildings, Penal Institutions, Hospitals, etc. All Flush partitions have the outstanding advantage of a continuous smooth 1 in. thick surface of metal, eliminating the danger of cracking or chipping and discoloration.

Panel Construction

Ferrometal Panel Partitions in Steel or in Aluminum are ideal for the sanitary facilities of all types of buildings and are recommended for toilet compartments, shower enclosures, dressing enclosures, entrance screens, sink enclosures, mop and equipment storage enclosures and any installation where sturdy, silent and sanitary construction is required. Ferrometal Panel Partitions are popular priced of unusually strong construction. Sanitary features in Ferrometal design allow easy cleaning, and avoid all unnecessary fluting or moulding which might catch and hold dirt or dust. No open joints or buckling of panels possible.

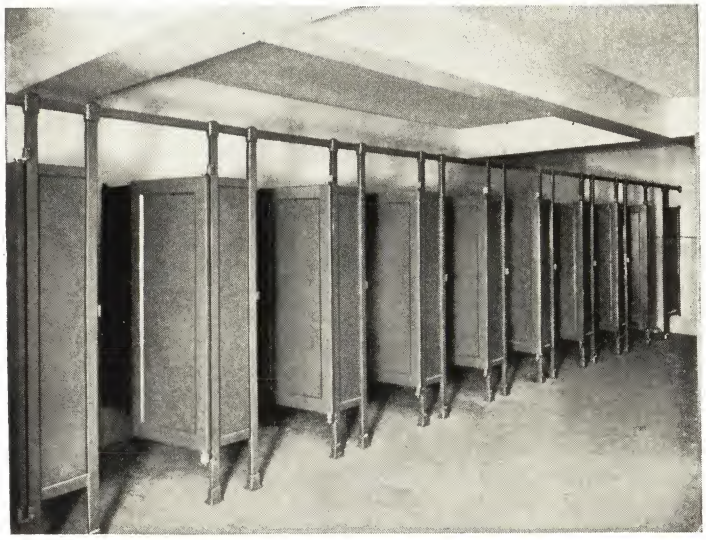
Fittings

Fittings throughout are furnished in drawn metal having many times the strength of ordinary cast metal. Minimum floor connections eliminate unsightly corners and crevices. Wall connections are furnished to allow a wall clearance of approximately 1 in. and facilitate cleanliness and ample flexibility for mounting on all types of walls with wainscoting.

All partitions and doors are custom built to final field dimensions, to insure erection suitable to conditions. All necessary erection material and fittings are included and adapted to actual floor and wall conditions of building.



FLUSH TOP (Pages 4, 5 and 6)



PANEL PARTITIONS (Pages 10, 11 and 12)



FLUSH PARTITIONS (Pages 7, 8 and 9)

FLUSH TOP PARTITION



A truly modern partition and door assembly without overhead rail or top anchoring structure, Ferrometal Flush Top creates a new cooperative harmony with modern Class A building design of comfort facilities where sanitation can be encouraged, rather than demanded, through the harmony of color and equipment. A modern luxury loving public demands and can expect beauty and utility in public comfort rooms, as well as in its own modern bathroom in the home.

Toilet partitions make up such a large part of the wall area in toilet rooms that the apparent value of modern design is necessary to affect pleasing appearance. With the spirit of ever cooperating effort in the building industry, we offer this modern Flush Top Partition.

Construction

Solid and rigid construction without headrail or top support of any kind and a minimum number of floor connections, Ferrometal Flush Top partition assembly is basically dependent upon a three point suspension, made possible through the application of a rigid T front on all dividing partitions and a solid mullion front on all end partitions.

T or mullion fronts are solidly anchored to floor with a heavy cast floor shoe anchored to floor with expansion shields. Floor shoes hold front partitions in place under a pressure, but without the necessity of drilling or tapping the T or mullion. Floor shoes for T or mullion connection is adjustable to allow for floor slope.

All dividing panels are anchored to walls with adjustable fittings to allow simple connection in tile or similar walls at joints without the necessity of drilling tile or wall material proper.

Dividing partition is rigidly connected to front T or mullion under screw tension.

To insure perfect rigidity in all circumstances, all partition T's, mullions, and doors are perfectly sealed against any moisture seapage along all edges with a neat rounded sanitary effect. All corners are perfectly mitered, welded and ground to a smooth conformity.

All wall and U connections are heavy drawn steel finished same as partitions.

All connections between wall and partition allow an opening of approximately 1 in. at rear wall and ½ in. on fronts for easy cleaning.

Flush Top T construction requires application with flush fronts and narrow doors (inswinging preferably). It is not recommended or intended to be used with a door the full width of the enclosure (see detail, page 6).

Appearance

All partition doors have a flush surface 1 in. thick of two sheets of 20 ga. steel filled and insulated with a corrugated fibre core assembled and glued in place under pressure. Edges of partitions and doors rounded and fully sealed against outside moisture seepage. T fronts and mullions and dividing panels internally reinforced at points of connection. No protruding screw heads on outside, but a complete uniformly thick, straight line, flush appearance along top and front assembly.

Doors of same flush construction but reinforced along hinge and strike edge.

Furnished in colors to harmonize with walls and floor. Can also be furnished in synthetic baked on metal primer allowing for final field coat finish. Shop finish, however, recommended. Shop finish is synthetic baked on enamel either in gloss or egg shell. (Rubbed finish can also be furnished if desired.)

All hardware items, including hinges and trim are brass chrome plated polished finish over nickel. Floor or anchoring shoe heavy cast nickel silver alloy brush finish to withstand corrosive action of cleaning compounds. (Can also be furnished in a chrome finish to match general hardware requirements.)

Heavy cast brass adjustable spring hinges add to the distinctive appearance to this assembly and assure this perfect appearance of the assembly as a whole at all times by keeping doors and partition in perfect alignment. Hinges have adjustable spring action which closes door lightly but positively.

FLUSH TOP SPECIFICATIONS

General

Toilet compartments shall be Ferrometal Flush Top as manufactured by the Milwaukee Stamping Co., Milwakee, Wis. Doors, panels and stiles to be of flush construction, erected in place without posts or headrail. Hardware and fittings shall be included. All gauges specified are U. S. Standard for sheet steel and are the minimum acceptable for the work. All sizes as shown on blueprint or as hereinafter specified.

Construction

Panels, T's and mullion stiles shall be not less than 1 in. thick made of two sheets of 20 gauge pickled cold rolled stretcher leveled furniture steel with clean, smooth surfaces. The two sheets shall be completely filled with corrugated fibre core, cemented and assembled under pressure, combining sheets and filler into one solid slab. Edges of sheets shall be formed and interlocked on 4 sides with 20 gauge drawn steel moulding inserted under tension along entire outside edge sealing same into one continuous smooth surface. Moulding joints at corners to be mitred and welded in place and ground smooth to conformity of panel and moulding. Connecting edges of all partitions shall be adequately reinforced internally to rigidly support all partitions and fittings. The top of all dividing panels and front stiles shall be in a continuous alignment.

Front Filler Panel same construction as partition proper, to be free from floor connections and securely anchored to supporting wall with three stirrup fittings allowing a maximum ½ in. opening between filler panel and wall.

Dividing panels to be rigidly connected to T and mullion front with special stirrup fitting held in place under tension. All connection between panels and mullions to allow a smooth front appearance without projecting bolt or nut heads.

Note: To allow for complete and easy cleaning a ½-in. opening between front and dividing partition is recommended.

Fittings

Floor shoes to be self draining type, of heavy cast nickel silver alloy, with full rounded smooth corners brush finish. Connection between stile and fitting to be adjustable to allow for variation in floor level. Fittings to be provided with two suitable anchoring webs sufficiently large to accommodate ⅜ in. anchor bolts.

Note: Fittings to be anchored to floor with lead shield or similar anchoring device as required for floor conditions. Floor and sub-floor construction to be such that it provides solid and rigid anchoring facilities.

Heavy ⅛ in. adjustable wall fittings of a U type stirrup construction shall be provided at top and bottom of all panels for securing panels to walls. They shall be through bolted to the panels and secured to wall with two bolts. They shall provide an opening of approximately 1 in. between panel and wall affording space for easy cleaning.

Doors

All doors to be not less than 1 in. thick of similar construction as shown for partitions. All doors to be internally reinforced before final assembly along hinge and strike edge to allow a rigid support for all hardware mounting. Top edges of all doors to be in a continuous alignment with front and dividing partition.

Hardware

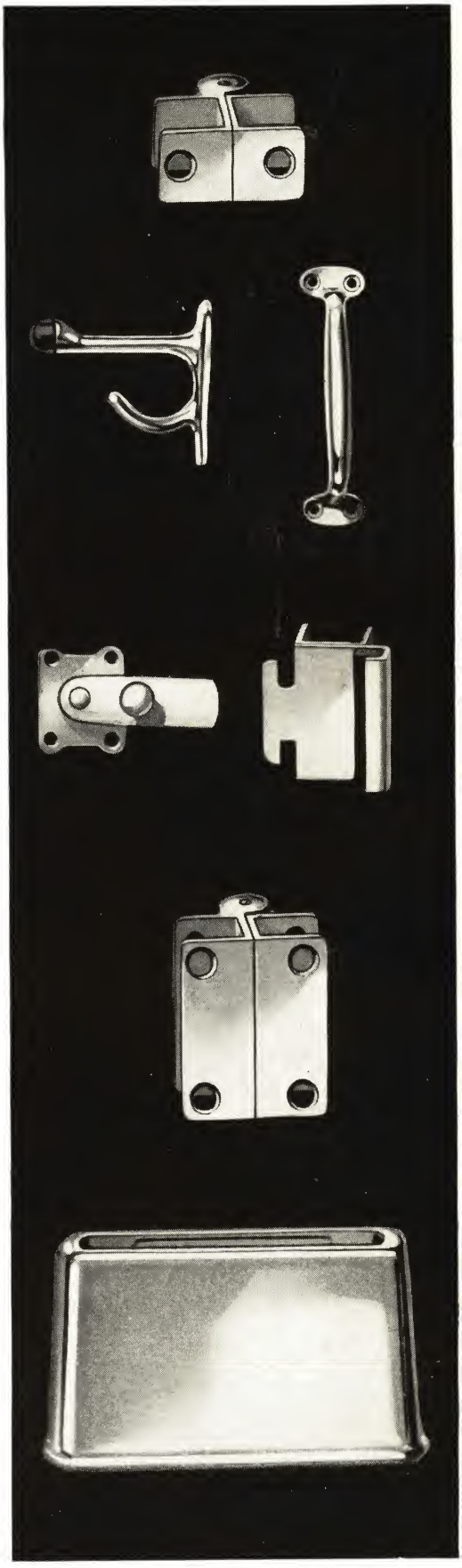
All doors to be provided with heavy cast brass chrome plated full surface adjustable spring hinges through bolted to partition and doors to allow maximum of ⅛ in. opening between partition and door. Furnish heavy brass throw latch with keeper and bumper, cast brass door pull, combination coat hook and bumper; all to have full polished chromium plated finish.

Finish

All surfaces to be properly degreased and sanded before prime finish applied. All prime to be evenly applied and all parts to be of uniform shade. Zinc oxide primer to be baked on at 250°.

Final finish (if at factory) to be applied over smooth baked on prime finish. Coat to consist of synthetic baked enamel, medium gloss, color as selected. High gloss rubbed finish can be furnished at slight additional cost.

Final finish (if in field)—see painting specifications.

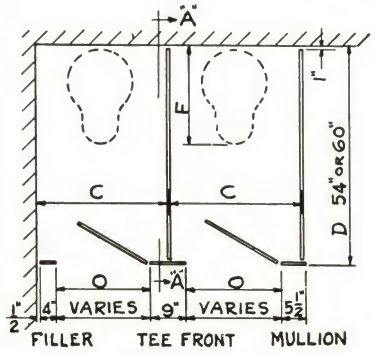


20
19

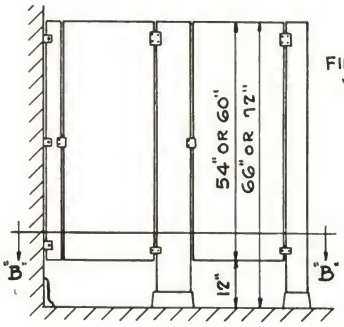
Flush Top details illustrate T mullion and wall construction required in all Flush Top assemblies. This basic combination can be arranged to suit individual conditions and accommodate large or small batteries of enclosures as required. T's and mullions can be furnished in 5½ in. or 9 in. standard widths, front filler panel variable to accommodate variable dimensions. Doors furnished in variable sizes to accommodate opening dimensions suited to the T and mullion fronts, usual door opening dimension recommended 23 in. to 27 in. Front filler panel connection allows full clearance for wainscoting offset, bull nose or mop board projections without interference. All wall connections for fronts or dividing partition are solidly anchored to wall with adjustable stirrup fittings. Where installations are to be anchored to metal lath and plaster, wood studs or light composition walls it is necessary to reinforce with wood grounds at points where wall and partition connect.

DETAILS OF FLUSH TOP COMPARTMENTS

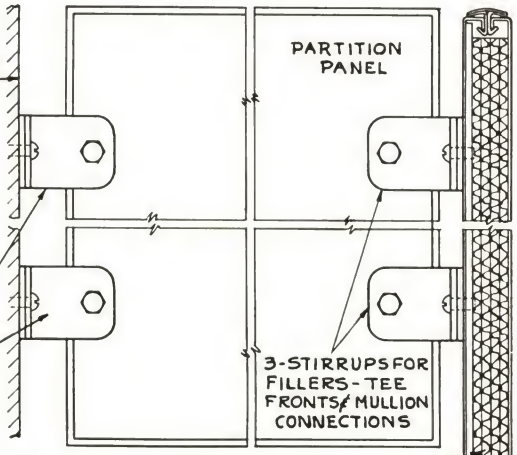
MILWAUKEE STAMPING CO.

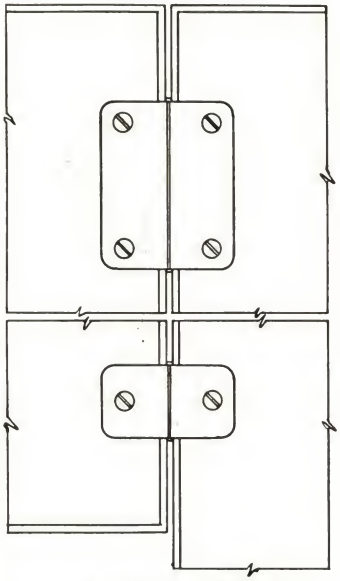


PLAN



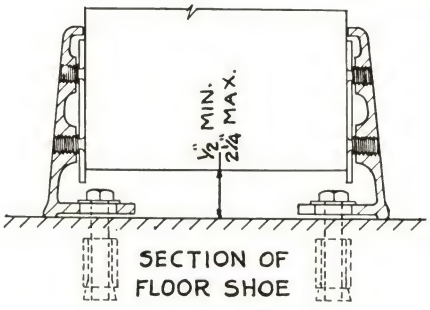
FRONT ELEVATION



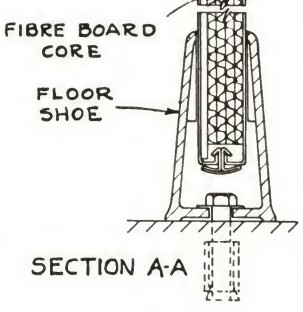


FRONT VIEW OF HINGES

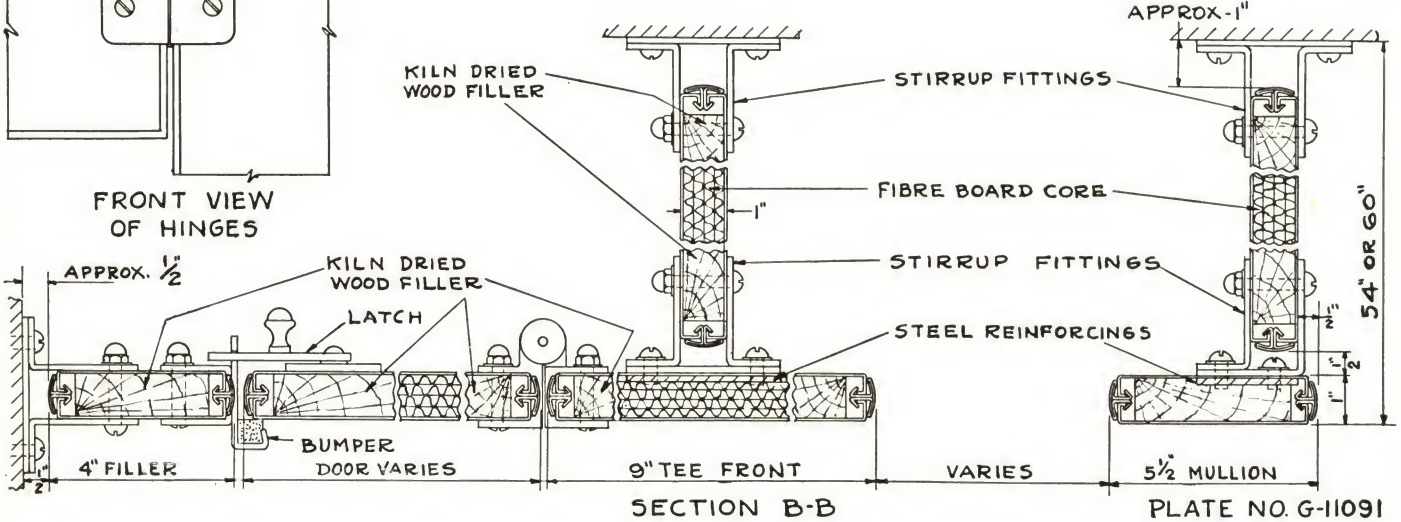
FIXTURE CLEARANCES			
C	D	O	F
30"	54"	21"	32"
32"	54"	23"	30"
34"	54"	25"	28½"
36"	54"	27"	27"
30"	60"	21"	38"
32"	60"	23"	36"
34"	60	25	34½"
36"	60"	27"	33"



SECTION OF FLOOR SHOE



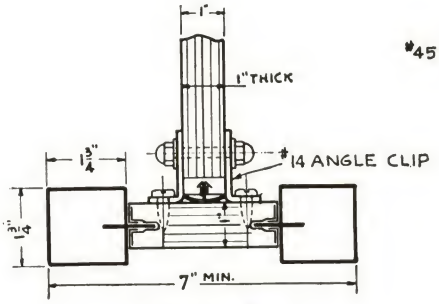
SECTION A-A



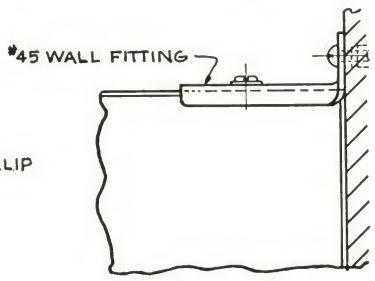
SECTION B-B

PLATE NO. G-11091

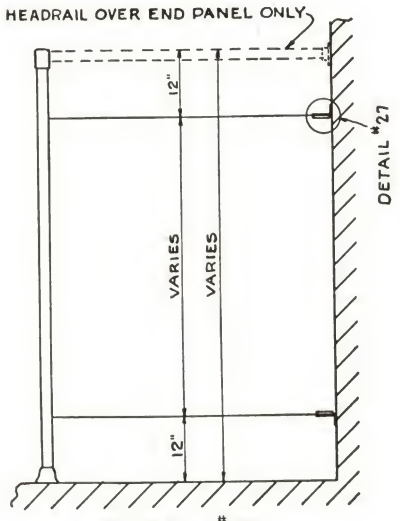
SCALE 1/4 = 1"



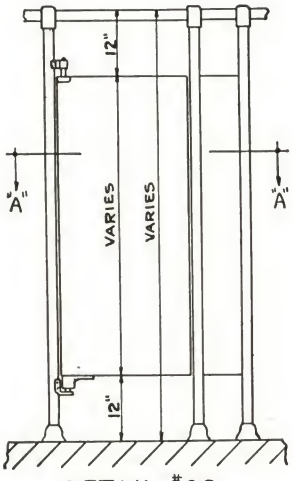
DETAIL #26
TEE CONSTRUCTION



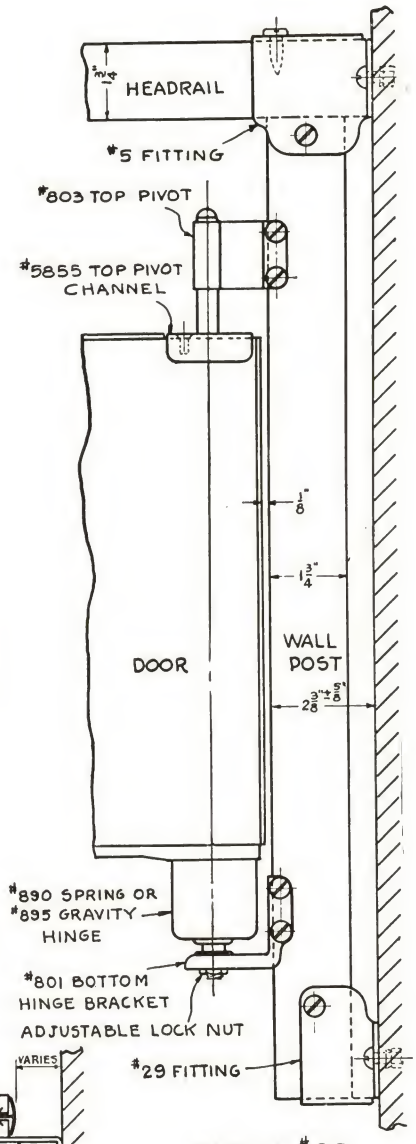
DETAIL #27
WALL CONNECTION



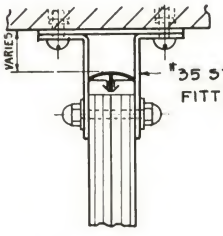
DETAIL #28
PANEL ELEVATION



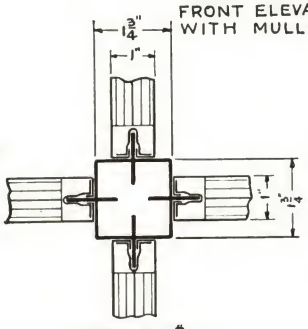
DETAIL #29
FRONT ELEVATION
WITH MULLION



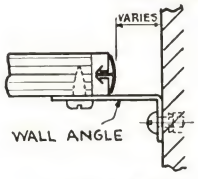
DETAIL #33
ADJUSTABLE WALL POST
CONSTRUCTION & DOOR ASSEMBLY



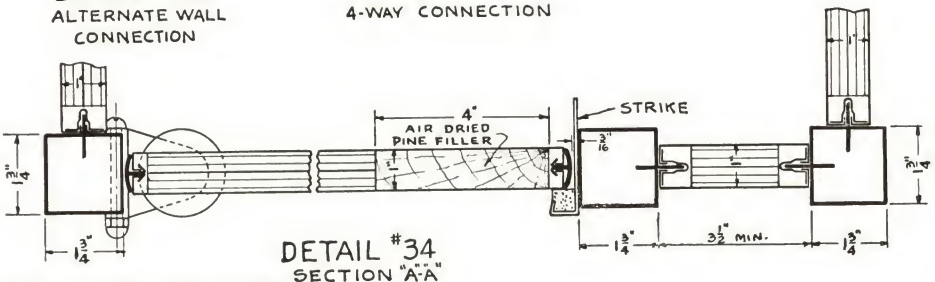
DETAIL #30
ALTERNATE WALL
CONNECTION



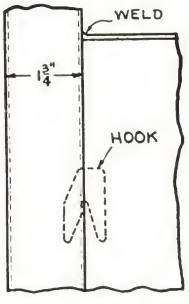
DETAIL #31
4-WAY CONNECTION



DETAIL #32
BACK CONNECTION
TO WALL



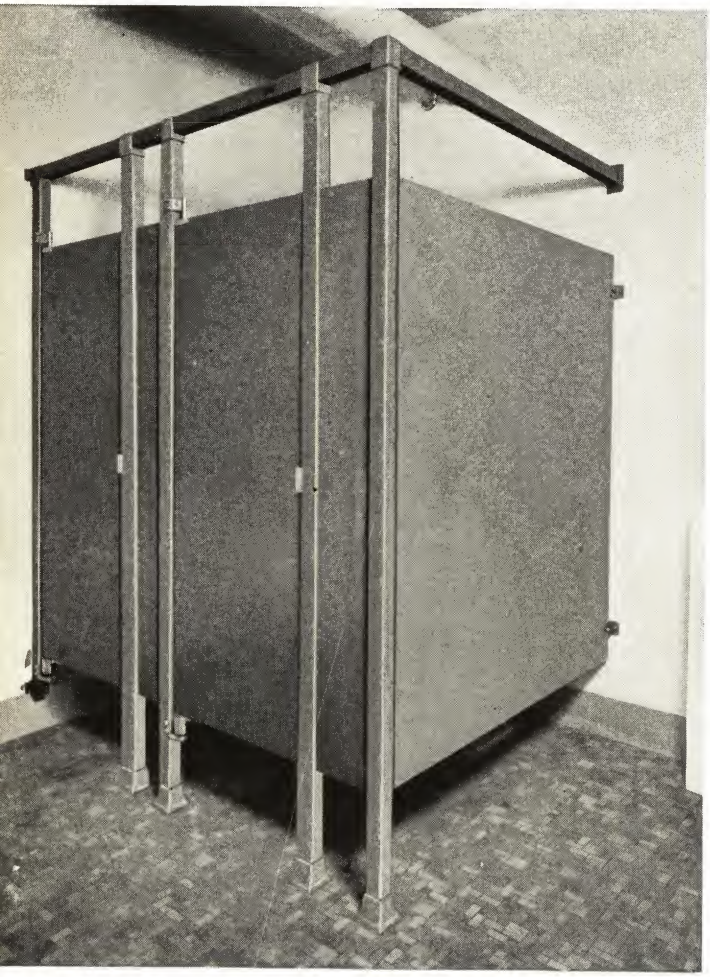
DETAIL #34
SECTION "A-A"



DETAIL #35
PANEL TO POST
CONNECTION

PLATE No. G-11075

FLUSH STEEL AND ALUMINUM PARTITIONS



Modern, sanitary facilities and washrooms do not imply expensive installations and high upkeep, but are far less costly to provide and maintain than any other when proper equipment is selected. Ferrometal flush partitions are designed to meet amortization life of building at low upkeep. Partitions for washrooms, toilets, etc., should be selected on a basis of quality and appearance.

Ferrometal flush steel or aluminum enclosures are designed to meet these needs and are a better partition for this purpose because:

Full surface flush construction is easy to clean.

Full insulated assembled and sealed under pressure, producing partitions with a full flush surface free from wind or warp.

Provided with drawn fittings throughout guarantees maximum strength and light smooth appearance.

All partitions perfectly sealed to resist moisture seepage from the outside.

Finished in colors as specified. Finishing designed to withstand severest humidity conditions possible.

General

All toilet enclosures, dressing rooms, screens, etc., shown on plans are to be Ferrometal Flush partitions and doors as described and manufactured by the MILWAUKEE STAMPING CO., Milwaukee, Wis. All sizes are shown on blueprint or as hereinafter specified.

Construction

All partitions to be approximately 1 in. thick, made of two sheets of 20-gauge pickled cold rolled stretcher leveled furniture steel (or 18 gauge, B & S Aluminum) completely filled and insulated with a corrugated fibre core cemented and assembled under pressure to outside sheets, combining sheets and filler in one solid slab. Edges of sheets to be formed and interlocked with 20 gauge drawn steel moulding inserted under tension along outside edge thus locking the entire outer circumference in a continuous smooth surface. Corners of moulding to be mitered and welded in place at juncture and ground smooth to the conformity of partition and moulding.

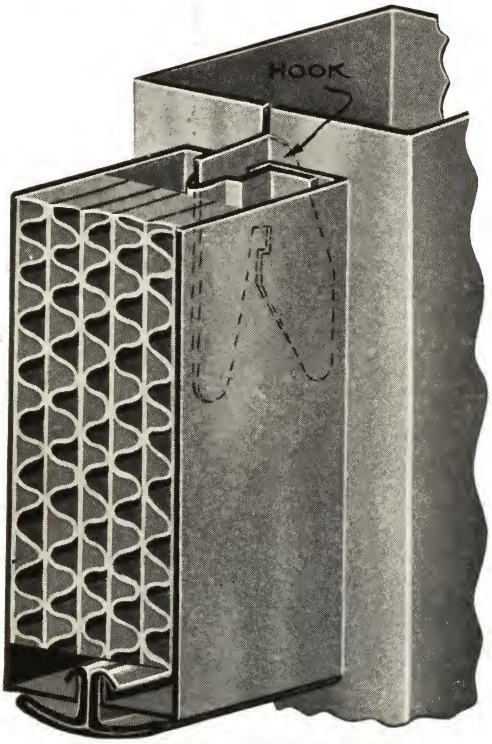
Edges adjoining upright posts to be interlocked on inside with continuous 20 gauge locking bar with at least three protruding wedge hooks, locked and welded in place, to fit and lock under tension into slotted uprights when assembled. Partition and upright so assembled to be finally welded in place with all welds ground smooth. All partitions and doors 36 in. or less to be 22 gauge U. S. S. Steel or 20 gauge B & S Aluminum.

IMPORTANT: Flush construction is not recommended for shower enclosures for the following reasons:

(1) Observations and tests indicate no suitable flush panel construction can be sealed uniformly and permanently against condensation.

(2) Adaptable filler materials, while moisture-resistant, are not waterproof. Waterproof material will not resist condensation.

(3) Water temperature changes are conductive to condensation inside flush panels. Only single panel construction is recommended for shower enclosures. (See page 10.)



TYPICAL FLUSH PARTITION SECTION

Fittings

All posts and headrails are to be 1¾ in. square heavy drawn steel, 16 gauge U. S. S. or 14 gauge B & S Aluminum. Foot fittings are to be adjustable and of heavy drawn brass with a nickel plate finish. Foot fittings can be furnished in chrome polished finish or bright aluminum. All headrail fittings, wall or other connections are to be of heavy drawn rust-resisting steel with rounded smooth sanitary corners, free from holes and obstruction, finished same as color partitions.

Finish

All surfaces to be thoroughly cleaned at factory with sandpaper and benzine and finished with a coat of rust-resisting zinc oxide primer baked on at 250° suitable to either a final lacquer finish or enamel coat after erection.

Final finish (if at factory) to consist of a high grade synthetic baking enamel baked on at 250° over a baked primer.

Final finish in field. (See painting specifications.)

Standard Finishes: Green or Light Grey. Special finishes and colors can be furnished at small additional cost.

FLUSH STEEL AND ALUMINUM DOORS

Ferrometal Flush doors are designed to meet the requirements of present architectural designs and are also used to distinct advantage with material other than metal such as marble, glass, slate, etc. Doors can be furnished in steel, aluminum, monel metal or special alloys.

Ferrometal Flush doors are light weight, durable and economical in cost compared with doors of other materials. Doors are fully equipped with hinges and deep throated hinge brackets, designed to anchor securely and properly without difficulty or damage to partition walls such as glass or marble. Flush doors insure maximum quietness in operation and will not warp or buckle through constant operation.

Ferrometal flush doors have closed, rounded and sealed edges throughout, eliminating uneven surfaces for dirt and dust to settle or lodge. Flush doors offer a wide adaptability of color to match finishes required in today's architecture.

Furnished with Lawson-Milwaukee hinges and brackets adjustable to suit mounting requirements.



General

All metal doors for toilet enclosures, dressing rooms, entrance screens, etc., shown on plans are to be Ferrometal Flush doors as described and as manufactured by the MILWAUKEE STAMPING Co., Milwaukee, Wis. All sizes—as shown on blueprint or as hereinafter specified.

Construction

All doors to be approximately 1 in. thick made of two sheets of 22 gauge pickled cold rolled stretcher leveled furniture steel (or 20 gauge B & S alloy aluminum) completely filled and insulated with a corrugated fibre core cemented and assembled under pressure to outside sheets, combining sheets and filler into one solid slab. Edges of sheets to be die formed and interlocked with heavy 20 gauge drawn steel moulding inserted under tension along outside edge thus locking the entire outer circumference in a continuous smooth surface. Corners of moulding to be mitered and welded in place and ground smooth to the conformity of partition and moulding. A vertical stile 3½ in. wide of air dried white pine is to be assembled and cemented into strike side of door in conjunction with fibre core and is to extend the entire inside height, completely filling space between surface sheets.

Note: The corrugated fibre filler and wood stile provides a door noiseless in operation, free of warp, wind, and void of hardware vibration.

Hardware

All doors are to be provided with heavy drawn brass nickel polished Lawson-Milwaukee Universal Self-closing Special Ball Bearing Gravity Pivot Hinge which allows for simple adjustment to any desired position open or closed.

(1) For doors mounted on metal partition top and bottom channel hinge brackets in a finish same as partitions to fasten to post with brass nickel plated through bolts and cap nuts.

(2) For doors mounted on marble or glass partition. Furnish adjustable brass nickel plated top and bottom hinge brackets to accommodate glass or marble thickness, to be provided with deep centered mounting holes and fasten to pilaster with brass polished nickel plated through bolts and cap nuts. Hinge brackets and strike to necessitate no notching in glass or marble and require maximum door clearance of $\frac{3}{16}$ in.

(3) Furnish heavy nickel plated brass throw latch, door pull, top pivot, coat hook, bumpers and strikes.

Hardware can be furnished in chrome over nickel if desired.

HARDWARE ITEMS INCLUDED WITH STANDARD FLUSH DOOR ON METAL ASSEMBLY (See page 15)

NO.	ITEM	FINISH*	No.	ITEM	FINISH
5801	Bottom Hinge Bracket	Baked Enamel	5810	Coat Hook	Nickel Plate
5802	Top Pivot Channel	Baked Enamel	5882	Door Pull	Nickel Plate
5803	Top Pivot	Baked Enamel			
5895	Gravity Hinge	Nickel Plate			
5888	Keeper	Nickel Plate	1983	Coat Hook and Bumper for inswing doors	Nickel Plate
5889	Strike and Bumper	Nickel Plate	5885	Throw Latch	Nickel Plate

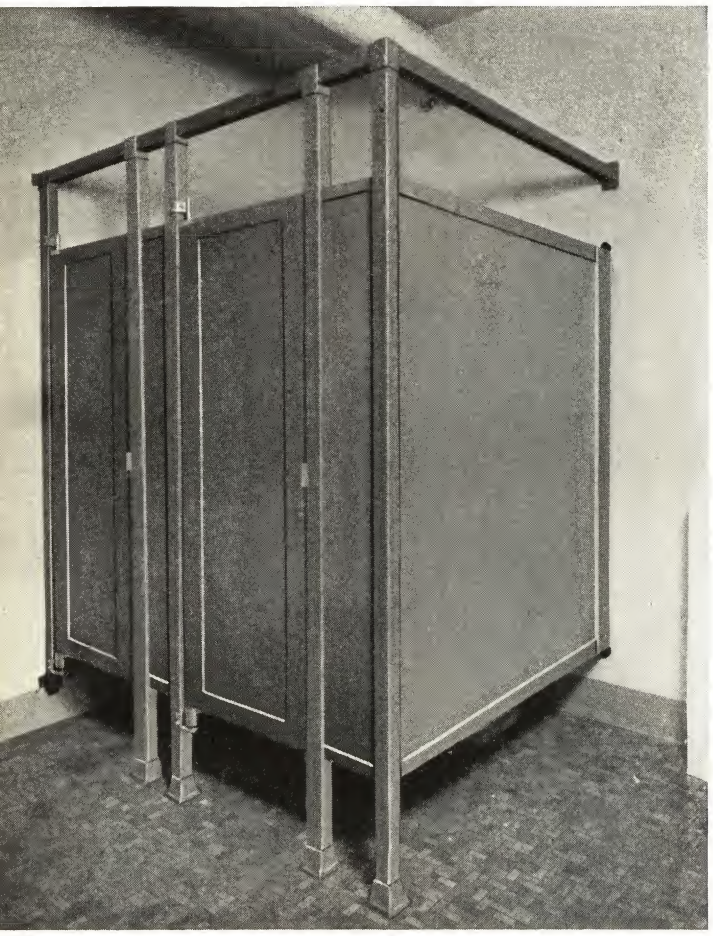
*Hardware indicated as nickel plate furnished in chrome plate at a slight additional charge. All items indicated in baked enamel furnished to match partition finish.

Hardware items included with standard flush door when assembled to marble, glass, or similar material include adjustable top and bottom hinge brackets suitable for gravity or pivot spring hinge. The 1902 full surface Lawson Milwaukee Lavatory Spring Hinge may also be used to an advantage with 1844 strike and bumper reversible and for both types in and outswinging doors.



TYPICAL FLUSH DOOR SECTION

PANEL STEEL AND ALUMINUM PARTITIONS



Ferrometal Panel Partitions in Steel or in Aluminum are ideal for the sanitary facilities of all types of buildings and are recommended for toilet compartments, shower enclosures, dressing enclo sures, entrance screens, sink enclosures, mop and equipment storage enclosures or any installation where sturdy, silent and sanitary construction is required.

Note: Ferrometal Panel Partitions are designed to suit building plan requirements at reasonable cost. They are attractive in appearance, designed to suit the trend of modern building requirements.

Ferrometal Panel Partitions are popular priced of unusually strong construction.

Sanitary features in Ferrometal design allow easy cleaning, and avoid all unnecessary fluting or moulding which might catch and hold dirt or dust. No open joints or buckling of panels possible.

The installation of Ferrometal Partitions is quickly made by experienced mechanics assisted by details that have been previously arranged. All Ferrometal Partitions are fabricated to exact job requirements based on actual field dimensions. All material furnished is numbered and labeled to facilitate erection.

Recommendation

The U. S. Department of Commerce, Bureau of Standards, recommends that standard size partitions and doors be used wherever possible. Doors the full width of the compartment help reduce the cost of installation. Inswinging doors are recommended generally and included in state and municipal building requirements in many localities, as they eliminate chance of injury through abrupt opening and also keep floor space in washroom clear at all times. (See chart on page 13 for recommended compartment sizes.)

General

All Toilet Enclosures, Dressing Rooms, Shower Enclosures, etc., shown on plans to be Ferrometal Panel Partitions and doors as described and as manufactured by the Milwaukee Stamping Co., Milwaukee, Wis. All sizes as shown on blueprint or as hereinafter specified.

Construction

All partitions are to be furnished in 16 gauge first quality cold rolled stretcher leveled furniture steel or 14 gauge B&S aluminum with 2¼ in. sanitary ventilated hollow metal rail across top and bottom edges. Panel and rails to be completely interlocked with front and rear post and securely welded in place. Front and rear post to be 16 gauge drawn steel 1¾ in. square with sanitary shaped edges without panels or projections. All joints between posts, panel and rail are to be sanitary and homogenous.

Partitions 48 in. deep or less—panels are to be 18 gauge U. S. Standard steel or 16 gauge B&S aluminum. All posts and headrails are to be 1¾ in. square heavy drawn steel, 16 gauge U. S. Standard or 14 gauge B&S aluminum.

Note: Aluminum partitions are especially recommended for shower and similar enclosures. Have the same solid panel construction and front and rear post of same material. Aluminum partitions are made of special grey plate alloy half hard temper.



TYPICAL PANEL PARTITION SECTION

Fittings

Foot fittings to be adjustable and of heavy drawn rust-resisting steel finished to match partitions.

Note: Foot fittings can be furnished in brass with nickel or chrome finish, or bright aluminum, if desired.

All headrail fittings, wall connections or otherwise are to be of heavy drawn rust-resisting steel with rounded smooth sanitary corners free from holes and obstructions, finished same as partitions.

Doors

See opposite page.

Finish

All surfaces to be thoroughly cleaned at factory with sand paper and benzine and finished with a coat of rust-resisting synthetic primer baked on at 250° suitable to either a final lacquer finish, or enamel coat after erection.

Final finish (if at factory) to consist of high grade synthetic baking enamel baked on at 250° over a baked primer.

Final finish in field (See painting specification).

Standard Finishes: Green or Grey. Special finishes and colors can be furnished at small additional cost.

PANEL STEEL DOORS

Metalclad panel doors furnished with all panel partitions offer an added value in this type of construction. Treated air dried white pine cores cross doweled into place solidly fill stiles and rails in each door. Stiles and rails as well as panel are made of heavy lead coated sheets to give an added protection to the entire assembly. The metalclad construction guarantees a definitely solid door free from warp and vibration. Solid rail and stile also keep hardware mountings solidly in place and avoid rattle and noise. Tests have definitely proven this door construction superior in every respect and perfect operation can be guaranteed.



The strong rugged construction of Ferrometal panel construction is especially suited and recommended for built up shower and dressing room assemblies. The possible arrangements with this type of partition are extensive, economical, and finally simple to maintain. Partitions for shower enclosures can be arranged on cement or terrazzo curb, dressing rooms on floor level, many derivations of this construction can be made on an economical basis. Write us for details regarding particular problems, with wide experience in furnishing this type of equipment we can offer suggestions for economical arrangements. We have developed finishes especially suitable for this purpose and recommend a factory finish on this type of equipment.

Construction

Doors to be Metalclad approximately 1 in. thick with 20 gauge lead coated steel panels. Stiles and rails to be 1 in. thick and 3½ in. wide all of 24 gauge leadcoated steel and reinforced with an air dried white pine core at least $\frac{15}{16}$ in. thick and 3¼ in. wide. Stiles and rails to have corners overlapped with a double thickness of steel, each offset so as to be flush and smooth with the surface of the stile. All wood reinforcing to be securely doweled with two dowel pins on each corner. Inner edge of door stile to be of a sanitary shape interlocking and insulating each door panel at least ¾ in. on all sides, joint between panel and stile to be completely and permanently sealed.

All doors are to be provided with Lawson Milwaukee Universal Self Closing Ball Bearing Gravity Hinge which allows for simple adjustment to any desired position open or closed. Hinge to be supported from formed channel top and bottom hinge brackets through bolted to posts with heavy through bolts and nickel plated cap nuts. Furnish heavy brass door bolt and door pull. Door strike to be heavy formed brass with rubber bumper, each door also to be furnished with rubber tipped coat hook. Standard hardware finish as listed, can be furnished in a chrome plated finish at a slight extra cost. (Further illustration page 15.)

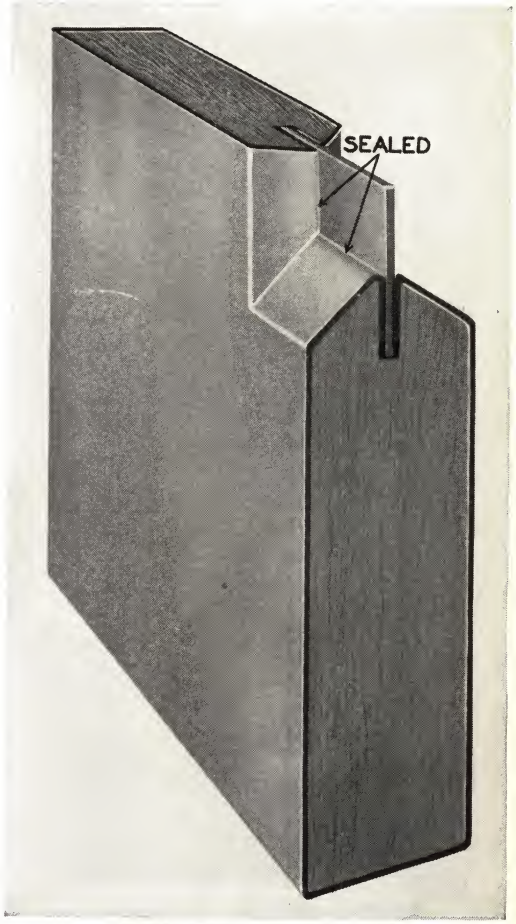
Finish

See partitions opposite page.

HARDWARE ITEMS INCLUDED WITH STANDARD PANEL ASSEMBLY **(See page 15)**

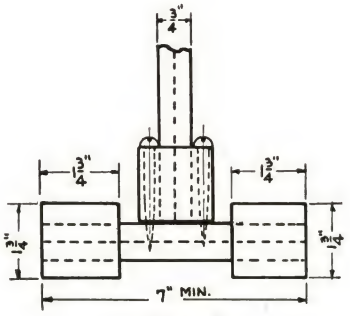
No.	Item	Finish	No.	Item	Finish
5801	Bottom Hinge Bracket	Baked Enamel	5810	Coat Hook	Nickel Plate
5802	Top Pivot Channel	Baked Enamel	5811	Coat Hook (inswing door)	Baked Enamel
5803	Top Pivot	Baked Enamel	5812	Door Pull	Nickel Plate
5895	Gravity Hinge	Nickel Plate	5835	Door Bolt	Nickel Plate
5806	Strike and Bumper (For inswing door)	Nickel Plate	5509	Roller Curtain Ring	Nickel Plate
5807	Strike and Bumper (For outswing door)	Nickel Plate	5519	Sliding Curtain Ring	Nickel Plate

NOTE: All items marked nickel plate furnished in Chrome Plate at slight extra cost.
All items baked enamel furnished in synthetic baked enamel or prime to match partitions.

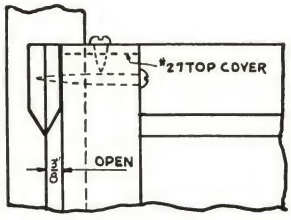


TYPICAL PANEL DOOR SECTION

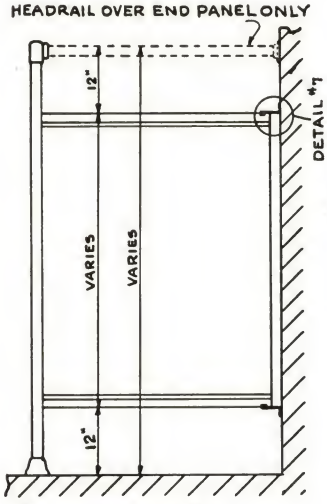
SCALE 1/4" = 1"



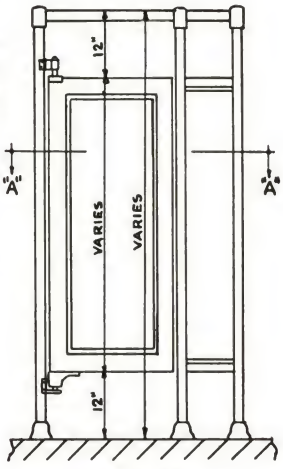
DETAIL #1
TEE CONSTRUCTION



DETAIL #2
ELEVATION DETAIL #1



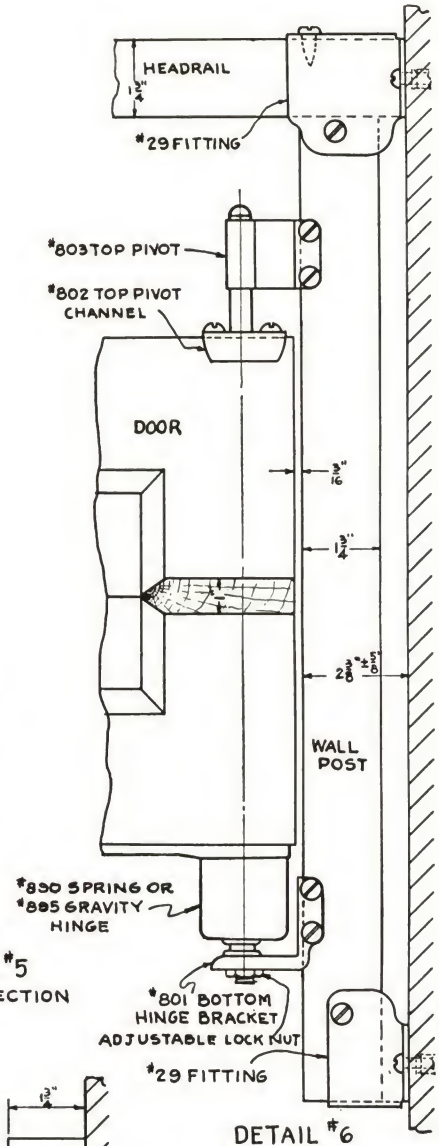
DETAIL #3
PANEL ELEVATION



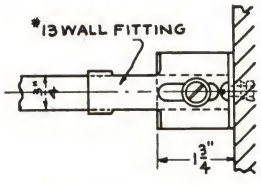
DETAIL #4
FRONT ELEVATION
WITH MULLION



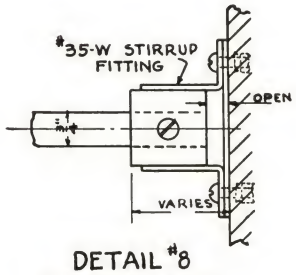
DETAIL #5
VERTICAL SECTION



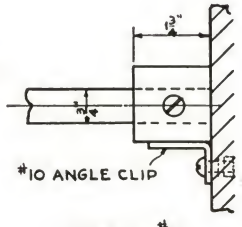
DETAIL #6
ADJUSTABLE WALL POST
CONNECTION



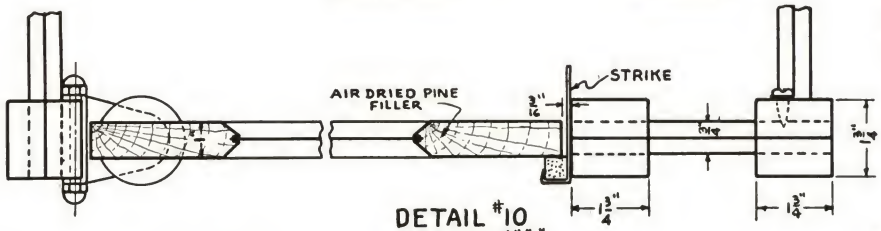
DETAIL #7
WALL CONNECTION



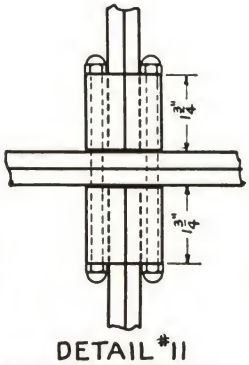
DETAIL #8
ALTERNATE WALL
CONNECTION



DETAIL #9
CONNECTION AT
WINDOW



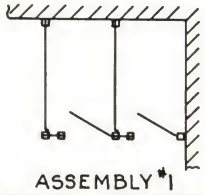
DETAIL #10
SECTION A-A



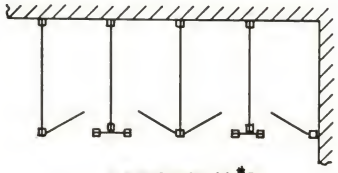
DETAIL #11
4 WAY CONNECTION

PLATE No. G-11076

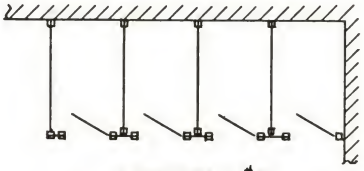
ALL ASSEMBLIES CAN BE FURNISHED WITH OUT-SWINGING DOORS



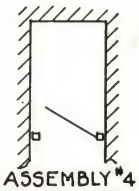
ASSEMBLY #1
WITH MULLION FRONTS



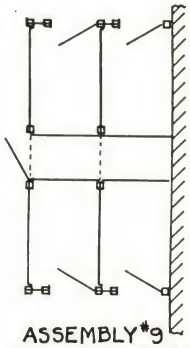
ASSEMBLY #2
WITH SKIP TEE FRONTS



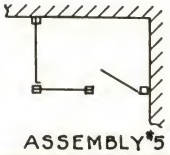
ASSEMBLY #3
WITH FULL TEE FRONTS



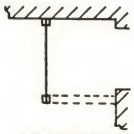
ASSEMBLY #4
BETWEEN WALLS



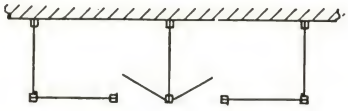
ASSEMBLY #9
WITH VENT SPACE



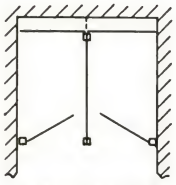
ASSEMBLY #5
CORNER ASSEMBLY



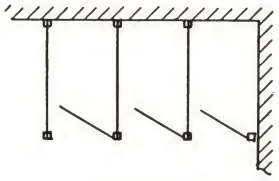
ASSEMBLY #6
SCREEN



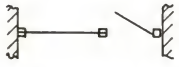
ASSEMBLY #10



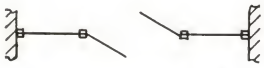
ASSEMBLY #7
BETWEEN WALLS WITH BACKS



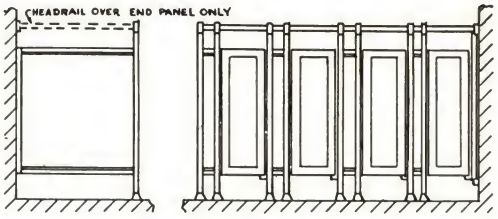
ASSEMBLY #8
WITH FULL WIDTH DOORS



ASSEMBLY #11
SCREEN WITH SINGLE DOOR

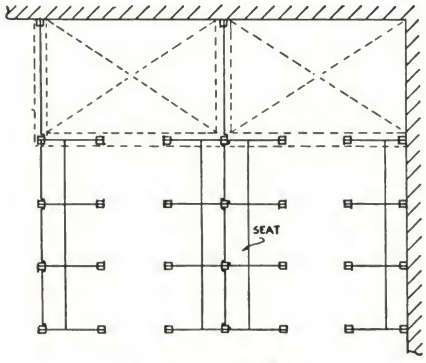


ASSEMBLY #12
SCREEN WITH DOUBLE DOOR

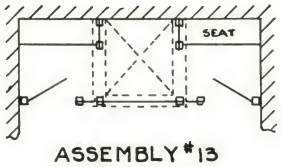


PANEL ELEVATION FRONT ELEVATION

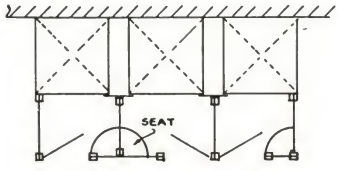
TYPICAL SHOWER AND DRESSING ROOM ASSEMBLIES



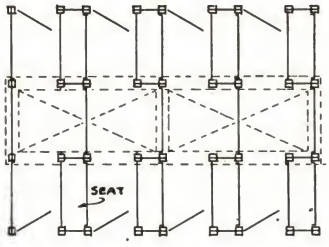
ASSEMBLY #14



ASSEMBLY #13



ASSEMBLY #15
UNIT SHOWERS WITH DRESSING STALLS



ASSEMBLY #16

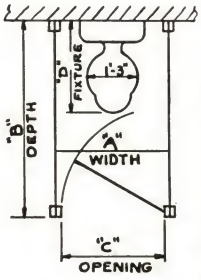
SIMPLIFIED PRACTICE RECOMMENDATION
FOR ASSEMBLIES USING FULL WIDTH DOORS

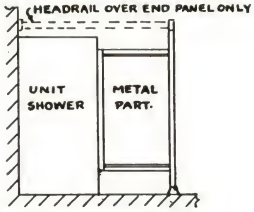
FOR SCHOOLS

C. TO C. OF PARTITIONS OR FIXTURES	WIDTH OF DOORS	DEPTH OF PARTITION	WILL CLEAR FIXTURE PROJECTING	HEIGHT OF PARTITION	HEIGHT TO TOP OF HEADRAIL
30"	28"	54"	29"	54"	78"
32"	30"	54"	27"	54"	78"
34"	32"	54"	25½"	54"	78"
36"	MAX. 34"	60"	29½"	54"	78"

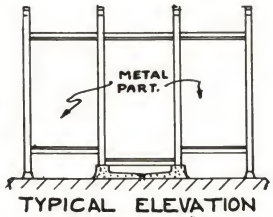
OTHER TYPE OF BUILDINGS

30"	28"	60"	35"	60"	84"
32"	30"	60"	33"	60"	84"
34"	32"	60"	31½"	60"	84"
36"	MAX. 34"	60"	29½"	60"	84"





ELEV. ASSEMBLY #15



TYPICAL ELEVATION
ASSEMBLY #16

CUBICLE PARTITIONS FOR HOSPITALS



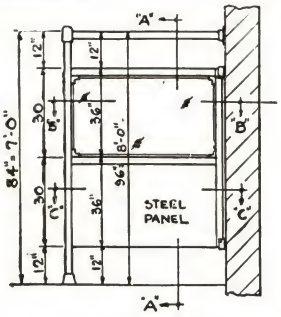
Hospitals have experienced a decided advantage of subdividing ward space with a Ferrometal Hospital Cubicle at a minimum outlay of capital.

Cubicle partitions act as a shield, eliminating direct draft, but still allow through ventilation. Top panel arranged for glass, allows maximum amount of light at all times and permits the close supervision of patients without additional help.

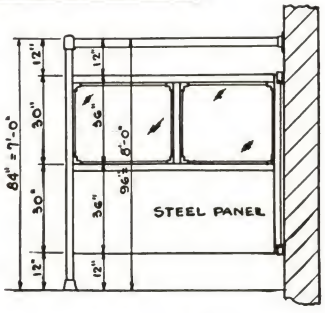
Ferrometal cubicle partitions are designed to suit individual ward requirements. They are furnished fully assembled and can be installed without the trouble or inconvenience usually found in making additions or alterations. They are fireproof, light in weight and of rigid construction.

To the Architect

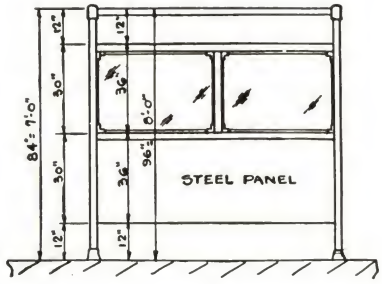
We offer the services of an Engineering Department familiar with this type of equipment, who are well able to make a particular study of your Hospital problem and offer equipment suitable for the particular problem.



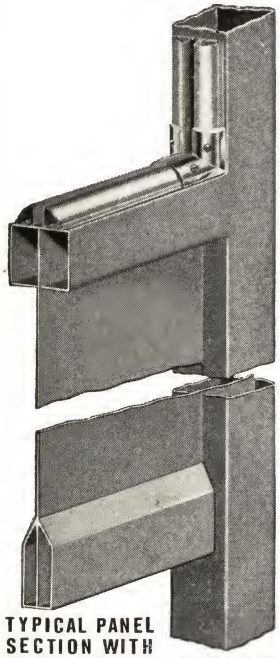
STYLE #20
36" x 60" TO 60" x 72"



STYLE #30
60" x 60" TO 96" x 72"



STYLE #40
60" x 60" TO 96" x 72"



TYPICAL PANEL SECTION WITH POST TOP RAIL AND SNAP MOULDING ASSEMBLY

Specification

All cubicle dividing partitions shown on plans are to be (Ferrometal Flush) —(Ferrometal Panel) construction type as described and manufactured by the MILWAUKEE STAMPING COMPANY, Milwaukee, Wis. All sizes are shown on blueprint or are hereinafter specified.

General Construction, Fittings, etc.—Flush construction see page 8.

Panel construction, see page 10.

Color of Standard Finish—white, light grey or cream.

Note: Hard surface, smooth finish especially adapted to this type of installation allows for simpler sanitation.

Glass Openings

Furnish all glass openings with a snap on moulding for retaining glass. Snap on moulding to be 20 ga. hollow drawn steel fastened without screws to a formed steel channel held rigidly in place on all sides of the glass opening.

Snap moulding to retain the final assembly of glass in position. Corners of moulding to be neatly joined at corners with a chromium plated cast brass corner.

Glass and glazing by others. Recommended glass thickness $\frac{3}{16}$ in. minimum.

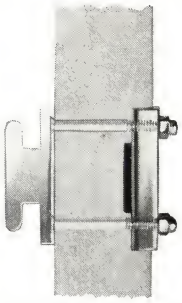
Note: All screws and bolts required in assembly do not project beyond surface of partition or fitting proper. All connection between wall and partition to allow at least ¾ in. opening for easy cleaning.

Electrical outlets for call buttons, etc., can be furnished at slight additional cost.

Curtains, if desired, can be furnished with roller ring fitting directly over the headrail.



TYPICAL FLUSH SECTION INCLUDING POST, TOP RAIL ASSEMBLY WITH SNAP MOULDING IN PLACE



View of 5888 keeper and 5889 bumper — mounted



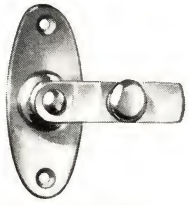
No. 5888 Keeper.



No. 5889 Bumper.



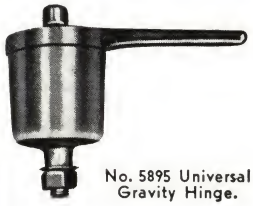
No. 5882 Plastic Door Pull.



No. 5885 Throw Latch.



View of 5885 latch and 5882 pull — mounted



No. 5895 Universal Gravity Hinge.



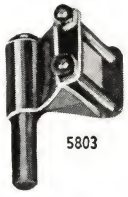
No. 5807 Strike for Outswinging Door.



No. 5806 Strike for Inswinging Door.



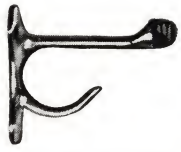
5801



5803



5802



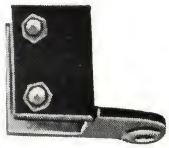
No. 1983 Coat Hook with Door Bumper.



5835



No. 5810 Coat Hook.



No. 21L27 Bottom Hinge Bracket for 5895.



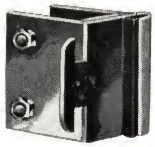
No. 22L27 Top Hinge Bracket for 5895.



No. 5860 Top Pivot Channel with No. 21L27.



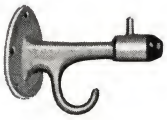
No. 1848 Strike and Bumper for Inswinging Door.



No. 1844 Strike and Bumper for Inswinging Door.



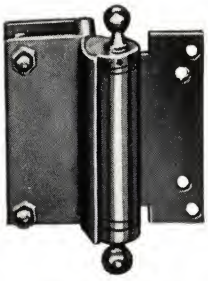
No. 5812 Wrought Door Pull.



5811



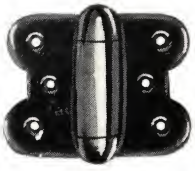
No. 1902 Full Surface Lavatory Spring Hinge.



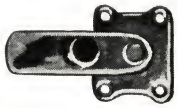
No. 1900 Half Surface Lavatory Spring Hinge.



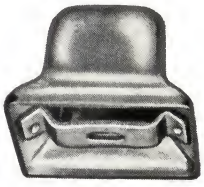
No. 400 Full Surface Adjustable Spring Hinge.



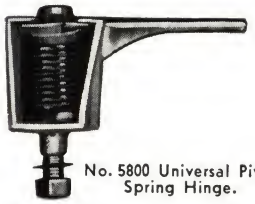
No. 1922 Full Surface Spring Hinge.



No. 1963 Throw Latch used with 1844-1845-846 or 849 Strike



5001



No. 5800 Universal Pivot Spring Hinge.



5504



5509



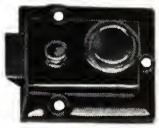
5519



5876



No. 5886 Hasp and Lock.



No. 5816 Latch



No. 5816 Cylinder Lock for Masterkeying.



5874

PARTITION REPRESENTATIVES

MAIN OFFICE AND FACTORY

MILWAUKEE STAMPING CO. – MILWAUKEE, WIS.

CHICAGO OFFICE-150 NO. WACKER DRIVE

Alabama
BIRMINGHAM, D. P. Barrett Co., 320 Brown-Marx Building

Arizona
PHOENIX, Baker-Thomas, 300 So. 12th Street

Arkansas
LITTLE ROCK, Acoustical & Spec. Sales Co., 1108 Main Street

California
LOS ANGELES, Bradfield Building Prod. Co., 619 E. Third Street
SAN FRANCISCO, Honolulu Iron Works, 215 Market Street (Represents Hawaii)
SAN FRANCISCO, Parker-Carpenter, Inc., 991 Bryant Street
SANTA BARBARA, Ott Hardware Company

Colorado
DENVER, Rocky Mt. Archts. & Bldrs. Serv. Co., 410 California Building

Connecticut
BRIDGEPORT, George Kabureck, 477 State Street

District of Columbia
WASHINGTON, Harry Schnabel, 4316 15th Street, N. W.

Florida
CORAL GABLES, Fred Sargent, 737 Navarre Avenue
JACKSONVILLE, Lewis C. Trowbridge, 2785 Lydia Street
ORLANDO, A. N. Goodwin, P. O. Box 1104
TAMPA, J. E. Wood Co., P. O. Box 861
WEST PALM BEACH, Alexander Gordon, 3636 Paseo Navarro Street

Georgia
ATLANTA, L. E. Murray, 161 Spring Street Building
AUGUSTA, David Slusky & Son, 1009 Broad St.
MACON, Taylor Iron Works, Broadway & Oglethorpe Streets
SAVANNAH, J. H. Persse, 28 E. Bryan St.

Idaho
BOISE, J. G. Doerr, 501 So. Eighth Street

Illinois
CHICAGO, Milwaukee Stamping Co., 150 No. Wacker Drive
DANVILLE, Material & Fuel Co.
PEORIA, G. A. Clark, 522 Central National Bank Building
ROCKFORD, Capitol Ornamental Iron Works, 1012 Ninth Street
ROCK ISLAND, Rock Island Bridge & Iron Works
SPRINGFIELD, Peter Vredenburgh Lbr. Co., Third and Jefferson Streets

Indiana
EVANSVILLE, G. L. Mesker & Co.
FT. WAYNE, Asbestos Insulating & Roofing Co., Inc., 111 E. Columbia St.
HAMMOND, Standard Equip. & Sup. Corp., 534 E. Michigan Avenue
INDIANAPOLIS, Stackhouse Bldg., Spec. Co., 823-826 Lemcke Bldg.
SOUTH BEND, South Bend Bldg. Spec. Co., 232½ Michigan Street

Iowa
BURLINGTON, Builders Woodwork Co., 516 Valley Street
CEDAR RAPIDS, E. E. Sovern Co., P. O. Box 615
DES MOINES, Hansen Metalkraft Co., Box 270, 3905 Amick Avenue
SIOUX CITY, Otto F. Bridge, 513 Jackson Street
WATERLOO, E. W. Watson, 411 W. Fifth Street

Kansas
KANSAS CITY, T. L. Bruton, 2918 Parkwood Boulevard
SALINA, Lee Hdwe. Co.
TOPEKA, Topeka Fdry. & Iron Works Co., 300 Jackson Street
WICHITA, Grabendike Eng. Sales Co., P. O. Box 333

Kentucky
LEXINGTON, G. L. Mesker & Co., P. O. Box 902
LOUISVILLE, R. B. Tyler, 1446 Levering Street

Louisiana
NEW ORLEANS, Nachary Bldrs. Sup. Co., 318 Carondelet Street
SHREVEPORT, Tri-State Bldg. Spec. Co., P. O. Box 1624

Maryland
BALTIMORE, W. F. Fowler, 1102 N. Charles Street

Massachusetts
BOSTON, Wills & Hill, 99 Bedford Street
SPRINGFIELD, H. Laurence Foster, 458 Bridge Street

Michigan
BATTLE CREEK, Michigan Woodwork & Spec Co., P. O. Box 133
DETROIT, A. L. Oppenheimer, 2211 Woodward Avenue
GRAND RAPIDS, Grand Rapids Screen Co., Murray Building
SAGINAW, Koehler Brothers, 208 So. Water Street
TRAVERSE CITY, C. J. Samuelson & Sons, Inc., 301 Cass Street

Minnesota
DULUTH, H. D. Bullard, 410 Builders Building
MINNEAPOLIS, Geo. T. Warner, 126 So. Eighth Street

Mississippi
JACKSON, Clark Bldg. Material Co., John Hart Building

Missouri
ST. LOUIS, Building Products Co., 705 Chestnut Street
SPRINGFIELD, Kennedy Brick & Steel Co., 412 So. Jefferson Avenue

Montana
BILLINGS, Kennedy Bldg. Supplies Co., 123 N. 25th Street

Nebraska
OMAHA, Lumberman's Brick & Supply Co., 1214 Farnam Street

New Mexico
ALBUQUERQUE, A. C. Weigerding, P. O. Box 173

New York
ALBANY, Austin F. Loucks, Jr., 483 Central Avenue
BUFFALO, W. D. Shumway, 504 Crosby Building
NEW YORK, A. R. Nelson Co., 101 Park Avenue
ROCHESTER, S. A. Spencer, Bldrs. Exchange, 135 Spring Street
SYRACUSE, Thomas M. Agan, 205 Harrison Street

North Carolina
ASHEVILLE, Dave Steel Co.
CHARLOTTE, A. L. Simpson, P. O. Box 1672, 500 Hermitage Court
GREENSBORO, Carolina Steel & Iron Co.

Ohio
CINCINNATI, Al Levinson Co., Times Star Tower, Eighth and Broadway
CLEVELAND, Wm. C. Pfleider, Inc., Swetland Building
COLUMBUS, Howard S. Sterner Co., 30 E. Broad Street
DAYTON, Frank Kemper, 653 Reibold Building
LIMA, Building Accessories Co., 1702 W. High Street
TOLEDO, Spencer Comstock, Security Bank Building
YOUNGSTOWN, G. A. Doeright, Jr., 355 E. Wood
ZANESVILLE, Wise Foundry, Machine & Supply Co., 269 N. Sixth Street

Oklahoma
OKLAHOMA CITY, J. B. Klein Iron & Fdry. Co., Box 964

Oregon
PORTLAND, L. C. Allen, 1433 N. W. Glisan Street

Pennsylvania
ALTOONA, Altoona Pipe & Sup. Co., 2111 Beale Avenue
ERIE, Erie Concrete & Steel Sup. Co., 1301 Cranberry
HARRISBURG, C. H. Hershock, 1513 No. Cameron Street
PHILADELPHIA, Robert R. Mackay, 2206 Chestnut Street
PITTSBURGH, Scott & Haigh, Grant Building
SCRANTON, La Bar & Evans, 711 Linden Street

South Carolina
CHARLESTON, Carolina Supplies & Cement Co., Chappel and Washington Streets
COLUMBIA, C. W. Turner, 1321 Pendleton Avenue
GREENVILLE, W. Lindsay Smith, Allen Building

Tennessee
CHATTANOOGA, Nixon-Hasselle Co., 13th and Carter Streets
KNOXVILLE, R. G. Jeffries, P.O. Box 2023, 409 W. Clinch Avenue
MEMPHIS, Wittichen Lime & Cement Co., 1477 Lamar Boulevard
NASHVILLE, Geo. W. Ruth & Co., 506 Exchange Building

Texas
ABILENE, Abilene Brick Co., P. O. Box 241, 910 Hickory Street
DALLAS, J. L. O'Hearn Co., 630 Wilson Building
EL PASO, Neff-Stiles Co.
HOUSTON, EARL E. Jones, 329 M & M Building
SAN ANTONIO, John W. Phillips Co., Builders Exchange

Utah
SALT LAKE CITY, Steel Engineers Company, 1526 S. W. Temple

Virginia
RICHMOND, R. Massie Nolting, 1103 E. Main Street, Room 431
ROANOKE, C. C. Jacobs, % Roanoke Bldrs. Supply Co., 11 Franklin Road, S. W.

Washington
SEATTLE, Arthur A. Dally, 332 Pioneer Building

West Virginia
BLUEFIELD, J. W. Johnson, Box 719
CHARLESTON, Fireproof Prod. Co., 216 Professional Building

Wisconsin
EAU CLAIRE, General Bldg. Sales Co., 316 N. Farwell Street
GREEN BAY, Henry J. Martin, 337 N. Maple Avenue
WAUWATOSA, Wauwatosa Fuel & Supply Co., 7700 Harwood Avenue

For our catalogs on Bathe-Rite Shower Cabinets and Lawson-Milwaukee Builder's Hardware, see File Index

SECTION 20

CONTINUED ⟶

PORCELAIN PRODUCTS COMPANY

Lustron Porcelain Enameled Enclosures

1425 South 55th Court, CICERO, ILLINOIS

Representatives in All Principal Cities - - - See Local Telephone Directory

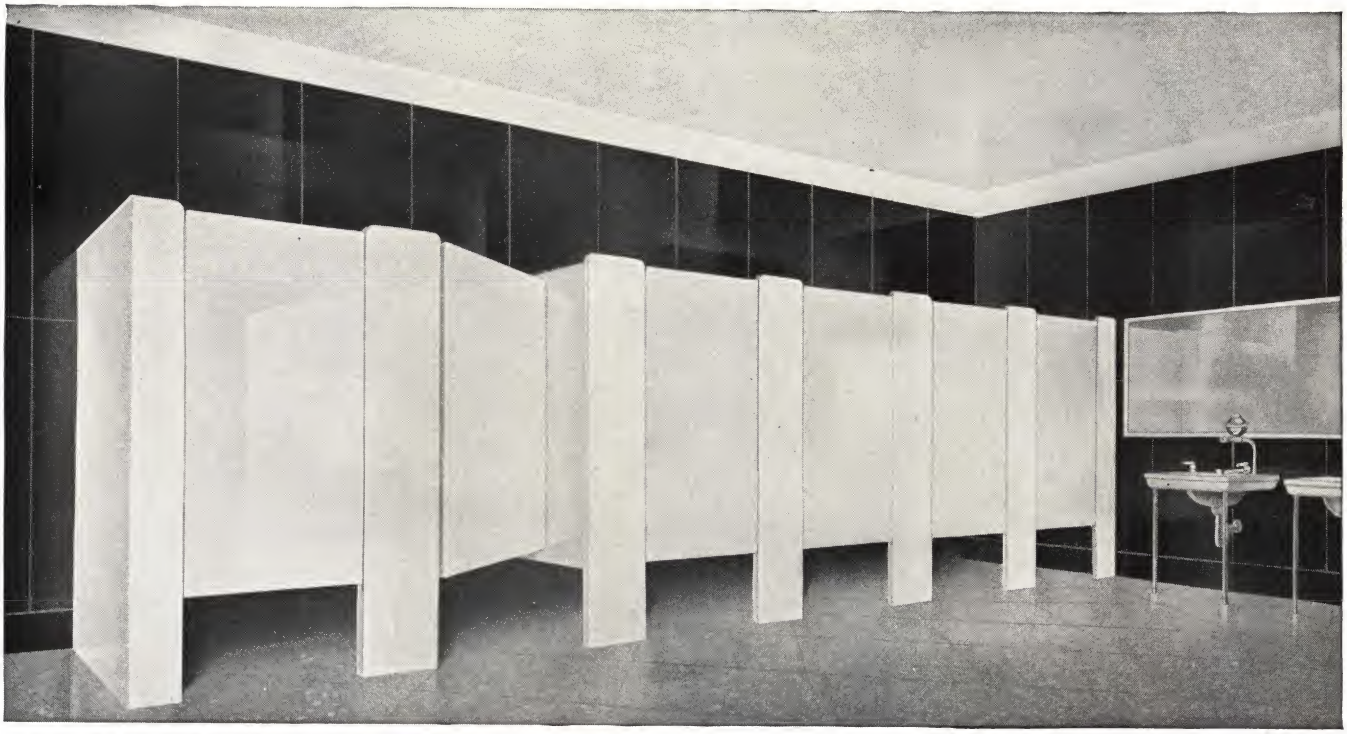
Wherever de luxe washrooms are needed there is where LUSTRON porcelain enameled enclosures should be specified. Available in a wide variety of colors or color combinations LUSTRON makes a washroom a place of beauty and a source of pride. Being genuine porcelain enamel, LUSTRON is clean, sanitary, corrosion and absorption proof and endlessly durable. Being scientifically constructed it affords the solidity of marble slabs and strength of steel. Capable of extreme flexibility in design LUSTRON enclosures may be of either the flush or headrail type, or even hung from the ceiling. The ideal material for fine hotels, theatres, clubs or office buildings. And when compared with other quality material—LUSTRON is moderately priced.



At the left is a view of one of the ladies' washrooms in the modern Fairbanks-Morse Building, 606 South Michigan Avenue, Chicago. Doors, walls—every area except floor and ceiling—finished in LUSTRON porcelain enamel panels. The color is burnt sienna.



Right: A view of one of the men's toilet rooms in the Fairbanks-Morse Building. Identical color scheme as that above. Note the flat lustrous and durable appearance of the wall panels.

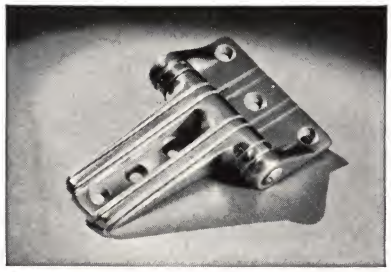


LUSTRON FLUSH TYPE ENCLOSURES

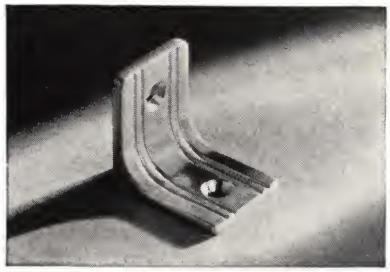
The modern streamline appearance of Lustron Flush Type Enclosures will appeal to property owners who prefer this type of construction. The average overall height is 67 inches and when a number of units are installed their trim appearance enhances any washroom interior. The same rugged construction used in the head rail type units is incorporated in these models. Special heavy gauge enameling iron is veneered to a thick core providing a single unit of exceptional ruggedness. On one of the following pages can be seen a photograph showing a cross-section view of Lustron. Also reproduced is a photo of one of the giant veneering presses used in the manufacture of Lustron. In this press the thick core and porcelain enameled panels are virtually welded together under an absolutely uniform pressure of approximately 150 pounds per square inch.

LUSTRON HARDWARE

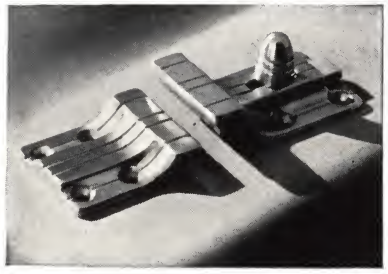
Lustron hardware, shown at the right, is in step with today's demand for trim accessories. It was designed by PORCELAIN PRODUCTS COMPANY to harmonize with the modern lines of Lustron Enclosures. All parts are made of white bronze, chrome finished and are designed to eliminate the necessity of bolts or cap nuts on stall exteriors. The hard durable finish is in keeping with the smooth, easy-to-clean surface of Lustron Enclosures.



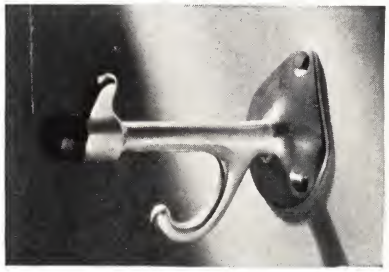
3703—Hinge



3704—Angle



3701—Latch
3702—Strike



3705—Combination Coat Hanger and Doorstop





LUSTRON DELUXE ENCLOSURES IN COLOR



With Lustron deluxe enclosures property owners can make rest rooms one of the oustanding features of their buildings. They are available in a wide variety of color combinations, ranging from solid masses of color, with or without striping, to the most delicate of pastel shades. In Lustron it is readily possible to individualize the toilet enclosures for the discriminating property owner. Insignias, emblems, trade-marks or coats-of-arms can be reproduced in porcelain enamel and fused right into each door. Reproduced above are typical designs which can be put into the glass-hard, fadeless porcelain enamel. This method of individualizing toilet compartments is particularly appealing to the exclusive hotel, the large chains of commercial hotels, country clubs, athletic clubs, large railway terminals and the finer office buildings. Lustron's flexibility and individualization makes for ready sales and becomes a point of permanent satisfaction for the client.



SPECIFICATIONS FOR LUSTRON ENCLOSURES

GENERAL

Partitions, doors and stiles are to be furnished by PORCELAIN PRODUCTS COMPANY, Cicero, Illinois. Enclosures are to be flush type construction. No posts or head rails are to be used. (See Note for other types.)

DIVIDING PARTITIONS

The dividing partitions shall be constructed of two flanged porcelain enameled panels made from heavy gauge special enameling steel. The flanged panels are to be veneered under pressure of 150 lbs. per square inch in hydraulic presses to a ½" insulation board core, making a double faced partition of ⅝" thickness overall.

END PARTITIONS

The end partitions shall be constructed of two flanged porcelain enameled steel panels veneered under 150 lbs. of pressure per square inch in hydraulic presses to a ¾" insulation board core reinforced with ¾" poplar plywood, making a double faced partition of ⅞" thickness overall.

STILES AND DOORS

The stiles and doors shall be constructed of two flanged porcelain enameled steel panels reinforced with a 1" poplar plywood core securely joined together making a double faced panel of 1⅛" thickness overall. All stiles are to extend into finished floor.

HARDWARE

All hardware to be of special design by PORCELAIN PRODUCTS COMPANY. All hardware and fittings shall be of white bronze chrome finish with no exposed bolts or cap nuts on the exterior of the stalls. Doors to be equipped with combination coat hook and bumper and heavy latch. Two heavy hinges shall be installed on each door. Hinges are to have a spring arrangement to hold the door open or closed.

COLORS

Colors are to be selected by the architect. The interior and exterior may be of different color if desired.

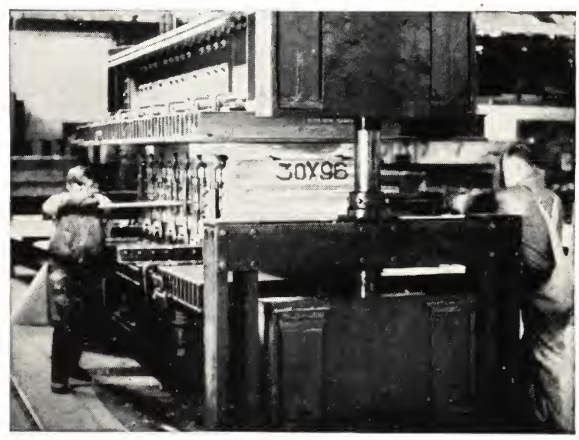
Note: Lustron enclosures are also available in the conventional type with head rail. When head rail is desired this part shall be constructed of a flanged porcelain enameled steel panel making a double faced unit of 1⅝" thickness overall. Head rails shall extend across head of door opening and fit down over tops of stiles.

FINISH

To be full porcelain enamel with one ground and two cover coats for white and/or ground coat and color cover coats according to specifications of individual job. Final cover coat to be Lusterlite acid resisting porcelain enamel.



Cross-section Showing Lustron Construction



Veneering Press Making Lustron Panels



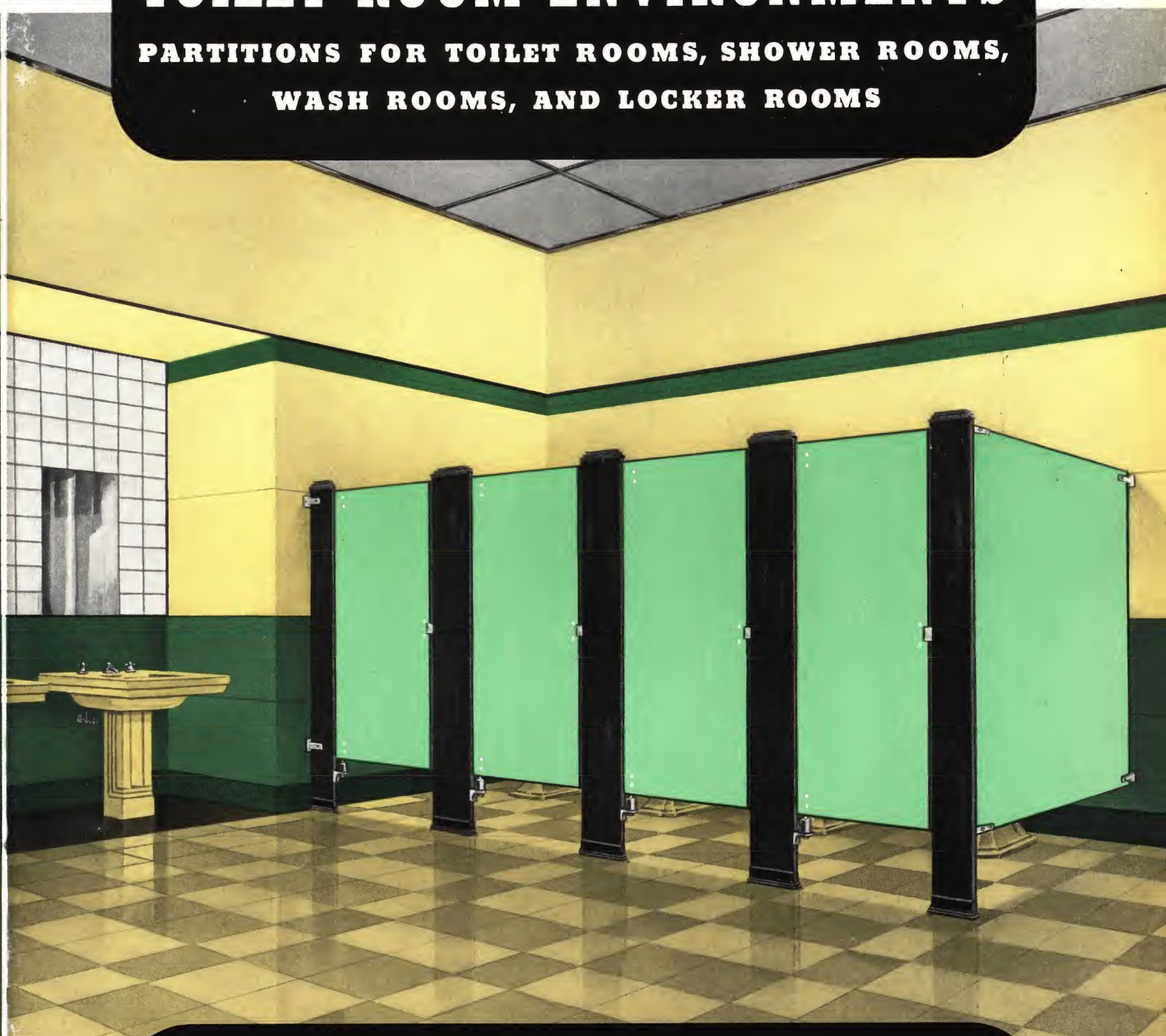
Lustron Enclosures Are Built with Extra Strength

MEMORANDA

Sanymetal

TOILET ROOM ENVIRONMENTS

PARTITIONS FOR TOILET ROOMS, SHOWER ROOMS, WASH ROOMS, AND LOCKER ROOMS



CATALOG NO. 76

THE SANYMETAL PRODUCTS CO., INC.

1701 URBANA RD. CLEVELAND, OHIO

Sanymetal "PORCENA" Embassy TOILET PARTITIONS

★ ALSO AVAILABLE IN BAKED-ON PAINT ENAMEL FINISHES ★



● Perhaps, you too have long wanted to lift toilet room environments, in the buildings you create, to a plane in harmony with other modern exterior and interior appointments. An appropriate combination of beauty and utility is now realizable in the creation of toilet room environments by the use of Sanymetal Porcena Embassy Toilet Partitions. Outstanding among the new decorative and serviceable materials is porcelain enamelled metal, out of which these partitions are fabricated. It is a material that always stays new.

Porcena Embassy Toilet Partitions possess, in a noteworthy degree, good taste happily united with the artistic — quietly evidenced in classic lines — that good taste which bestows distinction. And good taste completely fortified by sound mechanical construction — so sound that rigidity and permanence in the original sense of these terms are fully realized.

Unusual Features of Construction

This design embodies unusual features of construction made necessary by the elimination of posts and headrails. Engineering resourcefulness and mechanical skill, born of over twenty years' experience in making well over 40,000 installations, is evidenced in the design and construction of pilasters and the manner of fastening them to the floor so that permanent rigidity is obtained. Basically, a Porcena Embassy Installation consists of just three units: Pilasters (flush front), Partitions and Doors (flush type, fully insulated); a simple and rigid construction.

Pilasters Give Distinction

Pilasters are flush type insulated panels, $1\frac{5}{16}$ inches thick, porcelain enamelled on both sides. They present a flat, smooth surface on both sides that is easy to keep clean. The method of fastening Pilasters to the floor is an exclusive Sanymetal construction feature. This type of installation requires properly constructed floors to support it. If floor composition is not sufficiently strong for adequate anchorage, inserts should be used. Consult Sanymetal Representative for suggestions.

Pilasters are secured to floor with bolt rod fasteners which extend vertically the full height of the Pilasters. These bolt rod fasteners with the reinforcing core add structural strength and insure that each Pilaster shall be maintained in true perpendicular position at all times. Furthermore, this construction provides a rigidity to withstand the most abusive treatment arising from heavy swinging doors. Vertical bolt rod fasteners afford means for easy adjustment, should settling or change in structure of building or excessive strain require it. They also permit the whole installation to be easily dismantled without injury to Pilasters, if it should ever become necessary to relocate this equipment.

Study detail of Porcena Embassy construction shown at top of Page 3.

Ageless Materials Require No Replacement

Porcena Embassy Partitions are made of two sheets of porcelain enamelled steel, pan formed and porcelain enamelled on both sides, then assembled over and cemented under pressure to a $\frac{7}{8}$ inch thick rigid fiber core. Strike a solid wall and you get a dull thud. Strike a Porcena Embassy Partition and you will get the same identical dull thud, indicating the suitability of these panels to displace less substantial structural materials.

Porcena Embassy Toilet Partitions may be installed with Doors finished in porcelain enamel in colors contrasting appropriately with the colors of the Pilasters and the Partitions. Porcelain Enamelled Doors are constructed of the same kind of materials and in the same manner as Porcelain Enamelled Partitions. With Porcelain Enamelled Doors, a complete porcelain enamelled installation is obtained, which provides the utmost in utility, permanence, sanitation and neat appearance. However, where economies must be effected, installations of Porcena Embassy Toilet Partitions are completed with Flush Type Doors fully insulated with sound deadening fiber core and finished in plain baked-on paint enamel in a color which contrasts appropriately with the colors on Pilasters and Partitions.

★ ★ ★

Also Available with Plain Baked-On Paint Enamel Finishes Throughout

The good taste and mechanical features of construction embodied in Sanymetal Embassy Toilet Partitions is not denied to those who must, in the practice of economy, utilize the slightly less enduring, but none the less beautiful and useful, Embassy Toilet Partitions with baked-on paint enamel finishes throughout. Consult with Sanymetal Representative or write direct to factory for baked-on paint enamel color suggestions for Pilasters, Partitions and Doors.

Hardware illustrated on Page 15. Specifications on Page 3.

SPECIFICATIONS

SANYMETAL "PORCENA"
Embassy TOILET PARTITIONS

Note: Illustration and description of features of Sanymetal Porcena Embassy Toilet Partitions on Page 2.

(1) All Toilet Partitions and Doors shall be Flush Type Porcena Embassy without posts or headrail as manufactured by The Sanymetal Products Co., Inc., Cleveland, Ohio.

(2) **Doors and Partitions:** Doors and Partitions shall be 1 inch thick made of two sheets of No. 16 gauge porcelain enamelling sheet steel, pan formed, assembled over and cemented under pressure to a 7/8 inch thick rigid sound deadening fiber core. Edges are to be folded so as to form continuous sealed and locked seams by means of outside oval shaped binding strips. Binding strips to be not lighter than No. 20 gauge galvannealed steel finished with three coats of blacked japan. Partitions and Doors to be vitreous porcelain enamelled with one ground coat on all interior and exterior surfaces, and two additional layers of color and finish coats of vitreous porcelain on exterior surfaces, with black border along all edges. Partitions and Doors shall be made in dimensions and sizes shown on drawings.

(3) **Pilasters:** Pilasters shall be made 1 5/16 inches thick of two sheets of porcelain enamelling sheet steel, same gauge and finish as specified for Partitions and Doors. Pilasters shall have welded reinforcements of galvannealed steel. Pilasters, when set in place, shall be securely anchored to floor with steel bolt rod fasteners threaded into floor base structure, and extending vertically full height of Pilaster. Base of Pilaster shall be concealed by black porcelain enamelled steel plinth which also serves as mop moulding. Top cap of Pilaster shall be steel, black porcelain enamelled. Pilasters shall be made to manufacturer's standard dimensions; compartment width variations to be taken care of by varying the width of door openings.

(4) **Door Hardware:** Doors shall be equipped with brass chrome plated gravity hinges with concealed ball bearing rollers. Hinges are to be adjustable for holding door in open position when not latched. Each door shall be equipped with one cast brass chrome plated coat hook and rubber tipped bumper; one die cast chrome plated slide bar latch and, for each door, one heavy cast brass chrome plated combination door stop and latch keeper to be securely attached to Pilaster at point opposite slide bar latch on door.

(5) **Finish:** All metal to be vitreous porcelain enamelled in standard pastel shade of color selected.

★ ★ ★

SPECIFICATIONS
Embassy BAKED-ON PAINT
ENAMEL FINISH TOILET PARTITIONS

Note: Due to limited space, please refer to the numbered paragraph in Porcena Embassy Specifications when preparing complete specifications for Baked-On Paint Enamel Finish Partitions.

(1A) Use paragraph one as written except omit Porcena.

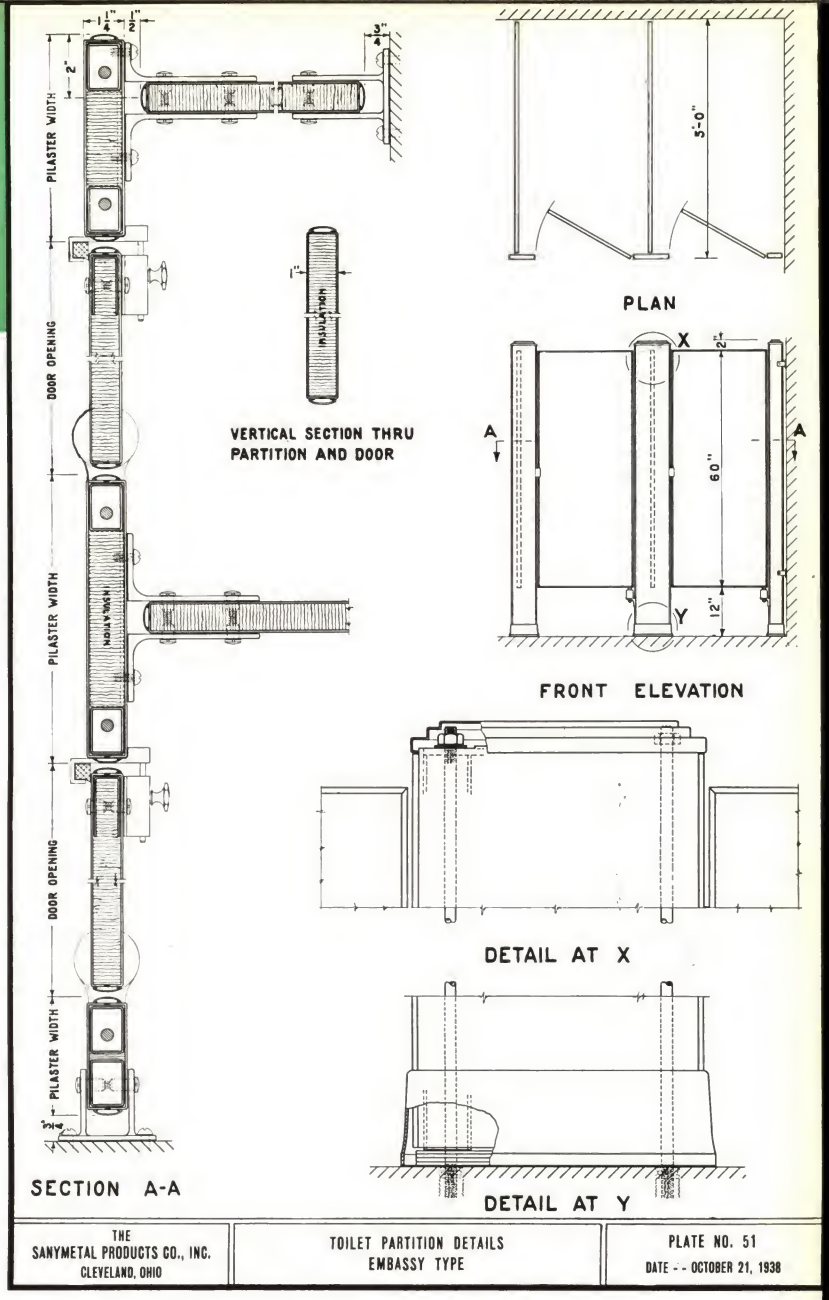
(2A) **Doors and Partitions:** Doors and Partitions shall be 1 inch thick made of two sheets of No. 20 gauge full cold rolled stretcher leveled full finished steel, assembled over and cemented under pressure to a 7/8 inch thick sound deadening fiber core. The two face plates on Doors and Partitions shall have formed edges and shall be sealed together with continuous drawn oval locking strips; interlocking strips on Doors and Partitions mitred and welded at all corners. Partitions and Doors shall be made in dimensions and sizes shown on drawings.

(3A) **Pilasters:** Pilasters shall be 1 1/4 inches thick of two sheets of steel, same gauge and finish as specified for Partitions and Doors. Pilasters shall have welded reinforcements of galvannealed steel. Interlocking strips on Pilasters mitred and welded at all corners. Pilasters, when set in place, shall be securely anchored to floor with steel bolt rod fasteners threaded into floor base structure, and extending vertically full height of Pilaster. Base of Pilaster and floor anchorage shall be concealed and protected by 3 inch high brass chrome plated plinth, which also serves as mop moulding. Top cap of Pilaster shall be pressed steel. Pilasters shall be made to manufacturer's standard dimensions; compartment width variations to be taken care of by varying the width of door openings.

(4A) **Door Hardware:** Doors shall be equipped with brass chrome plated gravity hinges with concealed ball bearing rollers. Hinges are to be adjustable for holding door in open position when not latched. Each door shall be equipped with one cast brass chrome plated coat hook and rubber tipped bumper; one die cast chrome plated slide bar latch and, for each door, one heavy cast brass chrome plated combination door stop and latch keeper to be securely attached to Pilaster at point opposite slide bar latch on door.

(5A) **Finish:** All metal to be thoroughly sanded, washed with benzine, filled and primed inside and out with sublimed blue lead baked on and two additional coats of paint enamel, each coat sprayed on and baked on separately.

Hardware illustrated on Page 15.



Sanymetal "PORCENA" Normandie TOILET PARTITIONS

★ ALSO AVAILABLE IN BAKED-ON PAINT ENAMEL FINISHES ★



A streamline effect is moderately imparted to a toilet room environment when Porcena Normandie Toilet Partitions are installed. Streamline design, wedded to utility, fulfills all requirements, because unadorned utility no longer satisfies a luxury loving public accustomed to bathrooms embodying varying degrees of modernity and elegance. Porcena Normandie Toilet Partitions present an appropriate use of a material that is glass-hard and fadeless — a new material that always stays new — Porcelain Enamel.

Sound Mechanical Construction Assures Rigidity

Through skillful Pilaster design and construction and manner of fastening Pilasters to the floor, a degree of rigidity is obtained that is fixed and permanent. Basically, a Porcena Normandie Toilet Partition Installation consists of just three units: Pilasters (flush front), Partitions and Doors (flush type, fully insulated); a simple, mechanically correct construction.

Pilasters Give Streamline Effect

Pilaster tops on the same horizontal plane as the tops of Partitions and Doors, give the true streamline effect. Pilasters are flush type insulated panels, $1\frac{5}{16}$ inches thick, porcelain enamelled on both sides.

Pilasters are anchored to floor in a manner that provides the maximum rigidity. The base structure to which the Pilaster is fastened has a welded reinforced crossbar ($\frac{1}{2}$ inch by $\frac{7}{8}$ inch) floor anchorage support the full width of the Pilaster, which provides for jack screw leveling and anchoring the Pilaster to the floor. The base of the Pilaster is concealed and protected by a brass chrome plated plinth, 3 inches high, which also serves for mop moulding.

Study detail of Porcena Normandie construction shown on Page 5.

A Glass-Hard, Fadeless Material That Always Looks New

Porcena Normandie Partitions are made of two sheets of porcelain enamelling steel, pan formed and porcelain enamelled on both sides, then assembled over, and cemented under pressure to a $\frac{7}{8}$ inch thick rigid fiber core. Porcena Normandie Toilet Partitions may be installed with Doors finished in porcelain enamel in colors contrasting appropriately with the colors of the Pilasters and Partitions. Porcelain Enamelled Doors are constructed of the same kind of materials and in the same manner as Porcelain Enamelled Partitions.

Where economies must be effected, installations of Porcena Normandie Toilet Partitions are completed with Flush Type Doors fully insulated with sound deadening fiber core and finished in plain baked-on paint enamel in a color which contrasts appropriately with the colors on the Pilasters and Partitions. Flush Type Doors are hung so that tops are flush with tops of Pilasters and Partitions.

★ ★ ★

Also Available in Plain Baked-On Paint Enamel Finishes Throughout

The streamline effect and sound mechanical construction afforded by Sanymetal Normandie Toilet Partitions are available with baked-on paint enamel finishes throughout. Such an installation is practical wherever it is necessary to economize. Consult with Sanymetal Representative or write direct to factory for baked-on paint enamel color suggestions for Pilasters, Partitions and Doors.

Hardware illustrated on Page 15. Specifications on Page 5.

SPECIFICATIONS

SANYMETAL "PORCENA"
Normandie TOILET PARTITIONS

Note: Illustration and description of features of Sanymetal Porcena Normandie Toilet Partitions on Page 4.

(1) All metal partitions and doors for toilet, shower and dressing room compartments shall be Flush Type Porcena Normandie, as manufactured by The Sanymetal Products Co., Inc., Cleveland, Ohio. Top of Pilaster and top edge of door shall be on same horizontal plane.

(2) **Doors and Partitions:** Doors and Partitions shall be 1 inch thick made of two sheets of No. 16 gauge porcelain enamelling sheet steel, pan formed, assembled over and cemented under pressure to a 7/8 inch thick rigid sound deadening fiber core. Edges are to be folded so as to form continuous sealed and locked seams by means of outside oval shaped binding strips. Binding strips to be not lighter than No. 20 gauge galvannealed steel finished with three coats of blacked japan. Partitions and Doors to be vitreous porcelain enamelled with one ground coat on all interior and exterior surfaces, and two additional layers of color and finish coats of vitreous porcelain on exterior surfaces, with black border along all edges. Partitions and Doors to be made in dimensions and sizes shown on drawings.

(3) **Pilasters:** Pilasters shall be made 1 5/16 inches thick of two sheets of porcelain enamelling sheet steel, same gauge and finish as specified for Partitions and Doors. Pilasters, when set in place, shall be securely anchored to floor. Base structure shall have welded reinforced crossbar (1/2 inch by 7/8 inch) floor anchorage support the full width of Pilaster for jack screw leveling and anchoring to floor. Base of Pilaster and floor anchorage shall be concealed and protected by 3 inch high brass chrome plated plinth which also serves as mop moulding. Pilasters shall be made to manufacturer's standard dimensions; compartment width variations to be taken care of by varying the width of door openings.

(4) **Door Hardware:** Doors shall be equipped with brass chrome plated gravity hinges with concealed ball bearing rollers. Hinges are to be adjustable for holding door in open position when not latched. Each door shall be equipped with one cast brass chrome plated coat hook and rubber tipped bumper; one die cast chrome plated slide bar latch and, for each door, one heavy cast brass chrome plated combination door stop and latch keeper to be securely attached to Pilasters at point opposite slide bar latch on door.

(5) **Finish:** All metal to be vitreous porcelain enamelled in standard pastel shade of color selected.

★ ★ ★

SPECIFICATIONS
Normandie BAKED-ON PAINT
ENAMEL FINISH TOILET PARTITIONS

Note: Due to limited space, please refer to the numbered paragraph in Porcena Normandie Specifications when preparing complete specifications for Baked-On Paint Enamel Finish Partitions.

(1A) Use paragraph one as written except omit Porcena.

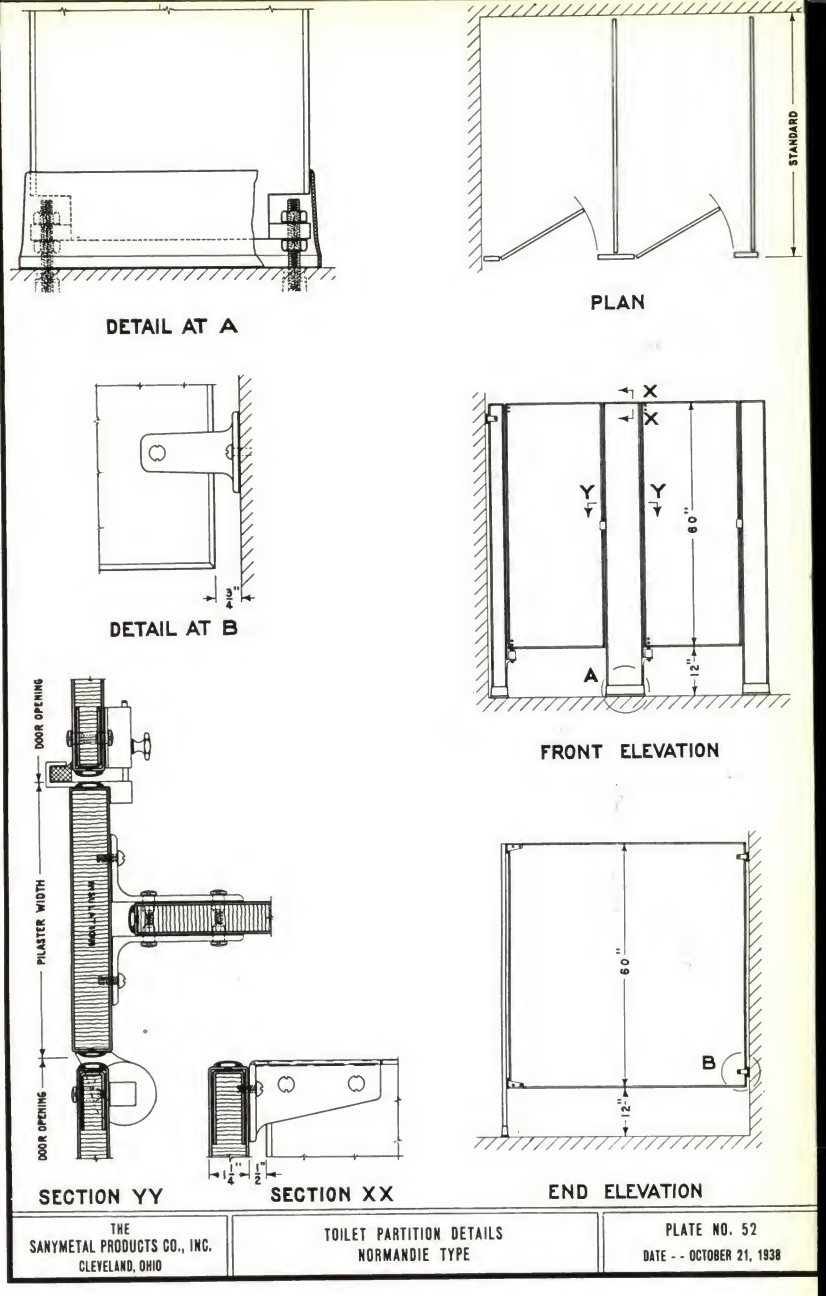
(2A) **Doors and Partitions:** Doors and Partitions shall be 1 inch thick made of two sheets of No. 20 gauge full cold rolled stretcher leveled full finished steel, assembled over and cemented under pressure to a 7/8 inch thick sound deadening fiber core. The two face plates on Doors and Partitions shall have formed edges and shall be sealed together with continuous drawn oval locking strips; interlocking strips on Doors and Partitions mitred and welded at all corners. Partitions and Doors shall be made in dimensions and sizes shown on drawings.

(3A) **Pilasters:** Pilasters shall be 1 1/4 inches thick of two sheets of steel, same gauge and finish as specified for Partitions and Doors. Pilasters shall have welded reinforcements of galvannealed steel. Interlocking strips on Pilasters mitred and welded at all corners. Pilasters, when set in place, shall be securely anchored to floor. Base structure of Pilasters shall have welded reinforced crossbar (1/2 inch by 7/8 inch) floor anchorage support the full width of Pilaster for jack screw leveling and anchoring to floor. Base of Pilaster and floor anchorage shall be concealed and protected by 3 inch high brass chrome plated plinth which also serves as mop moulding. Pilasters shall be made to manufacturer's standard dimensions; compartment width variations to be taken care of by varying the width of door openings.

(4A) **Door Hardware:** Doors shall be equipped with brass chrome plated gravity hinges with steel ball bearing rollers. Hinges are to be adjustable for holding door in open position when not latched. Each door shall be equipped with one cast brass chrome plated coat hook and rubber tipped bumper; one die cast chrome plated slide bar latch and, for each door, one heavy cast brass chrome plated combination door stop and latch keeper to be securely attached to Pilaster at point opposite slide bar latch on door.

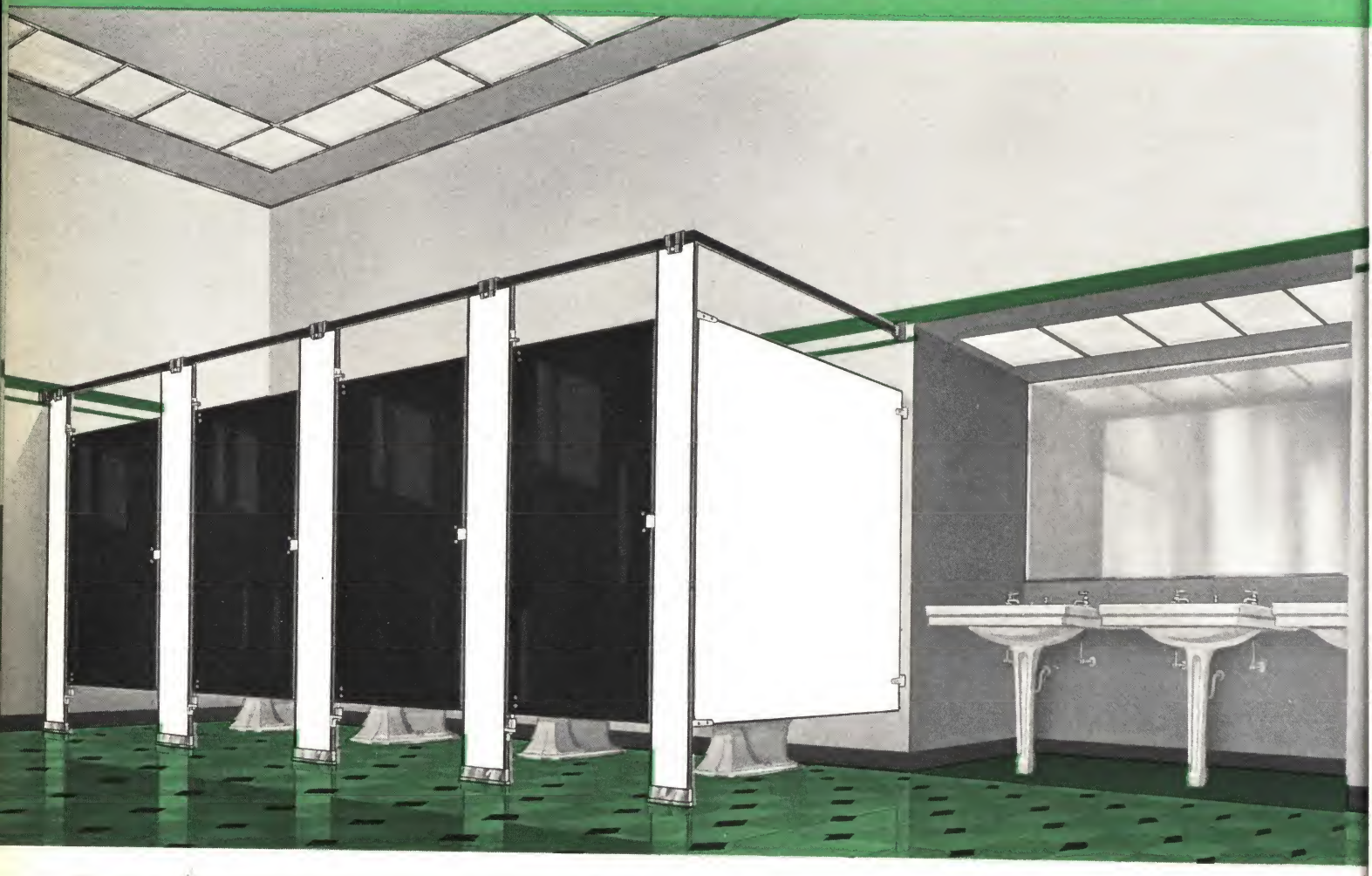
(5A) **Finish:** All metal to be thoroughly sanded, washed with benzine, filled and primed inside and out with sublimed blue lead baked on and two additional coats of paint enamel, each coat sprayed on and baked on separately.

Hardware illustrated on Page 15.



Sanymetal "PORCENA" Academy TOILET PARTITIONS

★ ALSO AVAILABLE IN BAKED-ON PAINT ENAMEL FINISHES ★



There's a certain distinctiveness about an installation of Porcena Academy Toilet Partitions with Flush Pilasters extending well above the doors and partitions and united with an overhead brace of modern design. In this instance, the headrail has been utilized as much for the artistic effect it creates as for fortifying the installation structurally. This type of partition is offered for the reason that all floors are not suitable for self-supporting partitions. Furthermore, this type is more economical and provides the strongest and most permanent installation to withstand rough usage.

Four Basic Units

Basically, a Porcena Academy Installation consists of just four units: Pilasters (flush front), Partitions and Doors (flush type, fully insulated) and headrail assembly — a strong, sound construction throughout.

Pilasters Displace Posts

Pilasters, replacing posts and extending well above the Doors and Partitions, are flush type insulated panels $1\frac{5}{16}$ inches thick, porcelain enamelled on both sides. They present a flat smooth surface on both sides that is easy to clean. Pilasters are anchored to floor with two expansion screws and concealed by brass chromium plated plinth.

Porcena Academy Partitions are made of two sheets of No. 16 Gauge porcelain enamelling steel, pan formed and porcelain enamelled on both sides, then assembled over and cemented under pressure to a $\frac{7}{8}$ inch thick rigid fiber core.

A Choice of Doors

Porcena Academy Toilet Partitions may be installed with doors finished in porcelain enamel in colors contrasting appropriately with the colors on the Pilasters and the Partitions. Porcelain Enamelled Doors are constructed of the same kind of materials and in the same manner as the Porcelain Enamelled Partitions. Installations of Porcena Academy Toilet Partitions can be effected, and quite satisfactorily so, with Flush Type Doors, fully insulated with sound deadening fiber core and finished in plain baked-on paint enamel in a color which contrasts appropriately with the color on the Pilasters and Partitions. Such doors are less costly than Porcelain Enamelled Doors.

Headrail Bracing Gives Finishing Touch

Partitions and Pilasters, when set in place, are securely joined together with 1 inch by $1\frac{1}{2}$ inch brass electroplated tubular overhead bracing attached to tops of Pilasters with brass chromium plated head castings bolted to the Pilasters. This gives rigidity to the entire installation and adds a touch of smartness to it.

★ ★ ★

Also Available with Baked-On Paint Enamel Finishes Throughout

For those to whom the ageless material, porcelain enamel, may be a bit too costly, Sanymetal Academy Toilet Partitions are available with baked-on paint enamel finishes throughout. Consult with Sanymetal Representative or write direct to factory for baked-on enamel color suggestions for Pilasters, Doors and Partitions.

Hardware illustrated on Page 15. Specifications on Page 7.

SPECIFICATIONS

SANYMETAL "PORCENA"
Academy TOILET PARTITIONS

Note: Illustration and description of features of Sanymetal Porcena Academy Toilet Partitions on Page 6.

(1) All metal partitions and doors for toilet, shower and dressing room compartments shall be Flush Type Porcena Academy as manufactured by The Sanymetal Products Co., Inc., Cleveland, Ohio.

(2) **Doors and Partitions:** Doors and Partitions shall be 1 inch thick made of two sheets of No. 16 gauge porcelain enamelling sheet steel, pan formed, assembled over and cemented under pressure to a 7/8 inch thick rigid sound deadening fiber core. Edges are to be folded so as to form continuous sealed and locked seams by means of outside oval shaped binding strips. Binding strips to be not lighter than No. 20 gauge galvannealed steel finished with three coats of blacked japan. Partitions and Doors to be vitreous porcelain enamelled with one ground coat on all interior and exterior surfaces, and two additional layers of color and finish coats of vitreous porcelain on exterior surfaces, with black border along all edges. Partitions and Doors to be made in dimensions and sizes shown on drawings.

Architects Note: Considerable saving in cost can be effected by using standard flush type doors with baked-on enamel finish. (Refer to paragraph 6A — this page.)

(3) **Pilasters:** Pilasters shall be made 1 5/16 inches thick of two sheets of porcelain enamelling sheet steel, same gauge and finish as specified for Partitions. Height of Pilaster to extend from floor to headrail as shown on drawings. Pilasters, when set in place, shall be anchored to floor with two expansion screws. Base of Pilaster and floor anchorage shall be concealed by 3 inch high brass chrome plated plinth which also serves as mop moulding. Pilasters shall be made to manufacturer's standard dimensions; compartment width variations to be taken care of by varying the width of door openings.

(4) **Headrail:** Partitions and Pilasters, when set in place, shall be securely braced with continuous 1 inch by 1 1/2 inch No. 18 gauge brass electroplated tubular overhead bracing attached to top of Pilasters with brass chrome plated head castings bolted through the Pilasters.

(5) **Door Hardware:** Doors shall be equipped with brass chrome plated gravity hinges with concealed ball bearing rollers. Hinges are to be adjustable for holding door in open position when not latched. Each door shall be equipped with one cast brass chrome plated coat hook and rubber tipped bumper; one die cast chrome plated slide bar latch and, for each door, one heavy cast brass chrome plated combination door stop and latch keeper to be securely attached to Pilasters at point opposite slide bar latch on door.

(6) **Finish:** All metal to be vitreous porcelain enamelled in standard pastel shade of color selected.

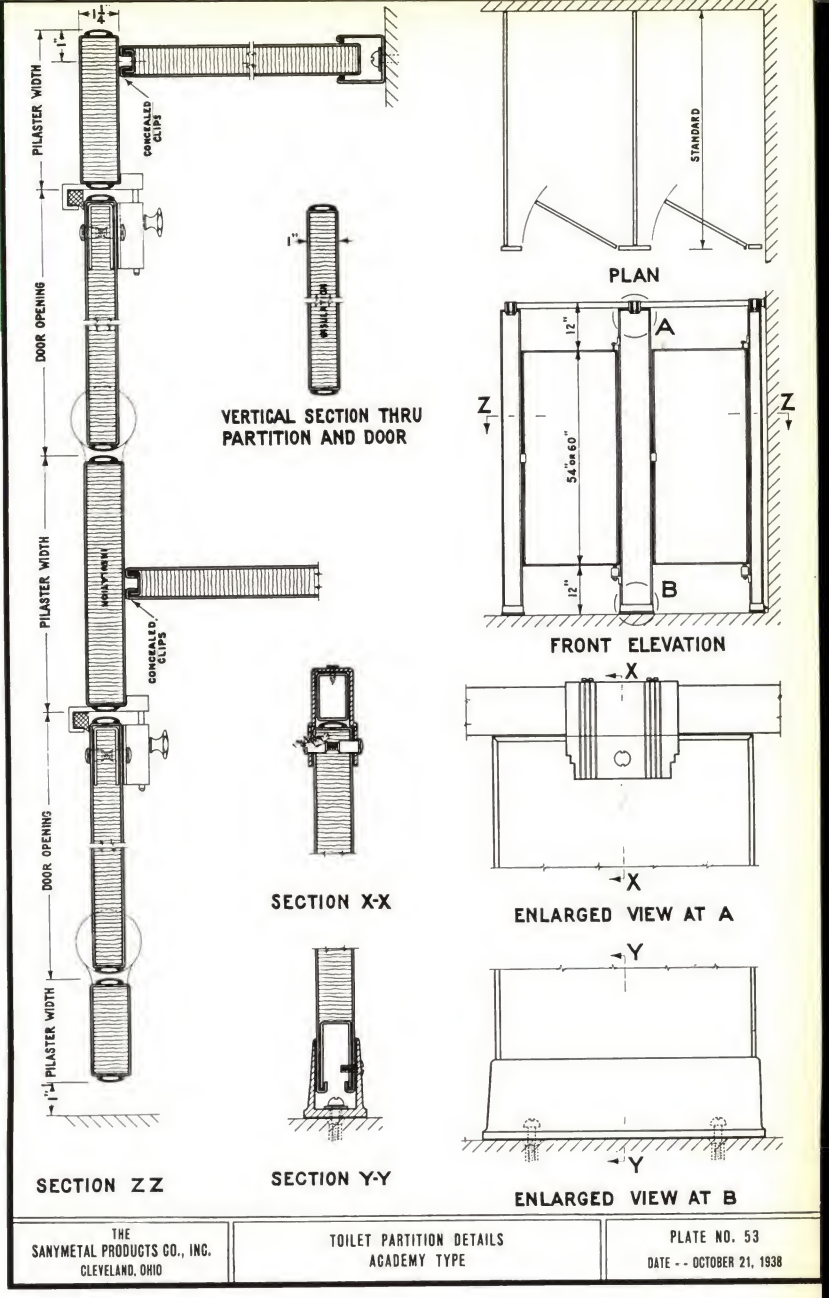
★ ★ ★

SPECIFICATIONS
Academy TYPE BAKED-ON PAINT ENAMEL FINISH TOILET PARTITIONS

Due to limited space, please refer to the numbered paragraph in Porcena Academy Specifications when preparing complete specifications for Baked-On Paint Enamel Finish Partitions.

(1A) Use paragraph one as written except omit Porcena.

(2A) Doors and Partitions: Doors and Partitions shall be 1 inch thick of two sheets of No. 20 gauge full cold rolled stretcher leveled full finish steel, assembled over and cemented under pressure to a 7/8 inch thick sound deadening fiber core. The two face plates on Doors and Partitions shall have formed edges and shall be sealed together with continuous drawn oval locking strips; interlocking strips on Doors and Partitions mitred and welded at all corners.



(3A) Pilasters: Pilasters shall be 1 1/4 inches thick of two sheets of steel same gauge and finish as specified for Partitions and Doors. Height of Pilaster to extend from floor to headrail as shown on drawings. Pilasters shall have welded reinforcements as shown. Interlocking strips on Pilasters mitred and welded at all corners. Pilasters, when set in place, shall be anchored to floor with two expansion screws. Base of Pilaster and floor anchorage shall be concealed by 3 inch high brass chrome plated plinth which also serves for mop moulding. Pilasters shall be made to manufacturer's standard dimensions; compartment width variations to be taken care of by varying width of door openings.

(4A) Headrail: Partitions and Pilasters, when set in place, shall be securely braced with continuous 1 inch by 1 1/2 inch No. 20 gauge tubular steel overhead bracing, attached to top of Pilasters with iron head fittings bolted through the Pilasters and finished in baked-on paint enamel.

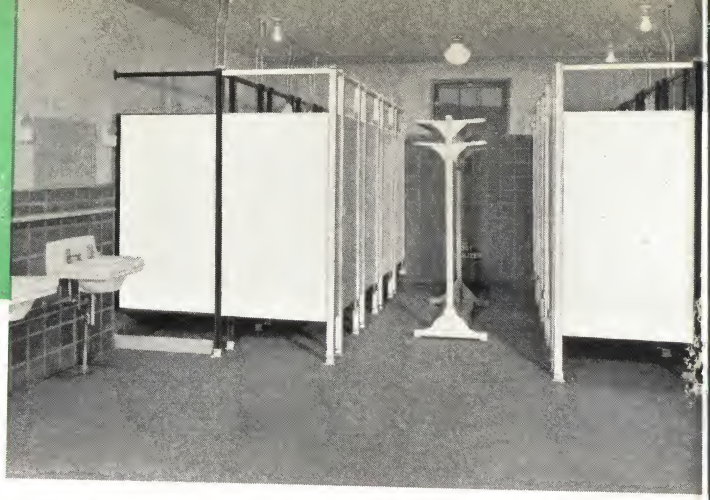
(5A) Door Hardware: Doors shall be equipped with brass chrome plated gravity hinges with concealed ball bearing rollers. Hinges are to be adjustable for holding door in open position when not latched. Each door shall be equipped with one cast brass chrome plated coat hook and rubber tipped bumper; one die cast chrome plated slide bar latch and, for each door, one heavy cast brass chrome plated combination door stop and latch keeper to be securely attached to Pilasters at point opposite slide bar latch on door.

(6A) Finish: All metal to be thoroughly sanded, washed with benzine, filled and primed inside and out with sublimed blue lead baked on and two additional coats of paint enamel, each coat sprayed on and baked on separately.

Hardware illustrated on Page 15.

Sanymetal

"PORCENA" SHOWER STALL INSTALLATIONS



Porcena Partitions used for shower stalls and dressing rooms at the Euclid Beach Tourist Camp, Cleveland, Ohio.

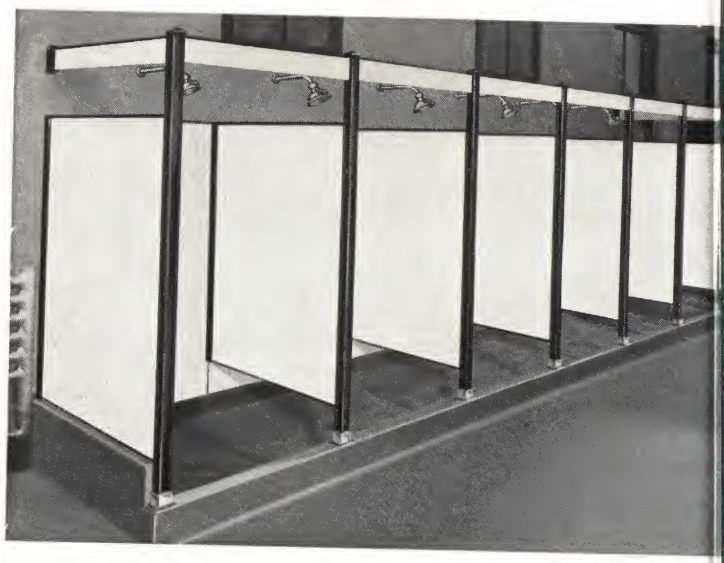
ARE SANITARY, ENDURING AND NEAT APPEARING

The suitability of Porcena Partitions for building shower installations for every purpose has been conclusively demonstrated by such installations as are pictured on this page.

Shower stall installations, with or without dressing rooms, when built of Porcena Partitions, encourage those who use these facilities to cooperate in keeping them orderly and neat. The hard, flint-like surface of Porcena Partitions does not absorb heavy odors. The residue of shower bathing that would ordinarily adhere to the surface of partitions does not adhere to the smooth, glistening porcelain enamel surfaces of these panels. With as little effort as it takes to keep the porcelain surfaces of household appliances sweet and clean, these Porcena Partitions can be kept strictly sanitary.

These features make them adaptable for shower stall installations in gymnasiums, country clubs, men's clubs, Y. M. C. A.'s, industrial plants and many other locations. Installations in clubs and other locations usually consist of shower stalls and dressing rooms, while installations in gymnasiums, Y. M. C. A.'s, schools, industrial plants, etc., usually consist of stalls as pictured in the lower illustration on this page.

Refer to Pages 3, 5, and 7 for specifications on Porcena Partitions or consult with Sanymetal Representative in your vicinity.



Installation of Porcena Partitions used in combination with Porcena Wainscot in employees' shower room of a large steel company.

Flush Type Stainless Steel Shower Stall Installations Give a Good Measure of Sanitary Service

Shower stall installations are sometimes made by using Sanymetal Flush Type Partitions made of stainless steel.

Stainless Steel shower stall partitions, combined with the special features of the Sanymetal post, permit installation in any arrangement that is desirable or necessary. Unlimited combinations are possible because of these exclusive features embodied in the Sanymetal post.

Technical Information Pertaining to Shower Stall Installations

Shower stall installations are usually made by using partitions to build as many units as may be desired. Dressing rooms may be combined with the shower stall installation by using additional partitions as illustrated. Sanymetal recommends the use of Porcena Partitions for shower stall installations because these panels are fully protected against ordinary acids, vermin, moisture, etc.

Shower stall installations are usually composed of compartments three feet square; but compartments can be had in any size desired. It is usually best to locate the shower mixing valve on one of the sidewalls of the room; thus preventing the possibility of a person scalding himself by having to turn on the water when standing in the stall.

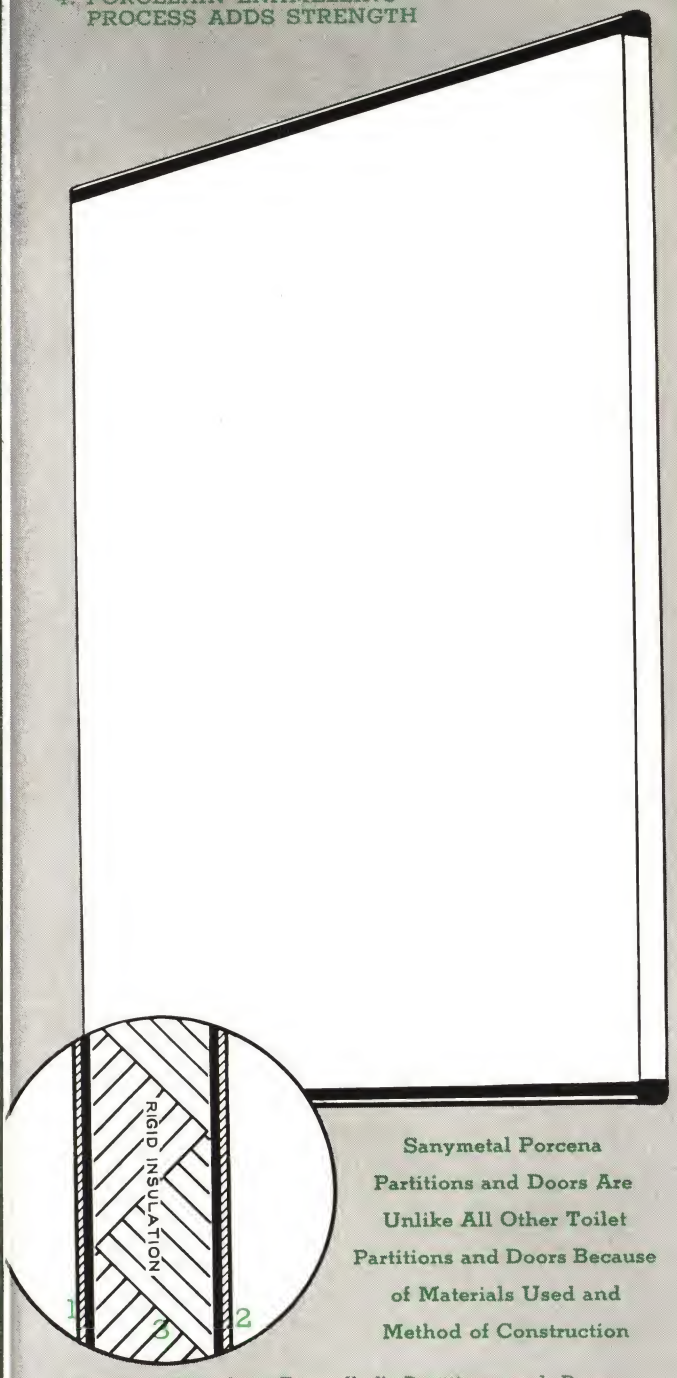
Masonry is a Vital Element in Securing a Permanently Satisfactory Shower Stall Installation

The practice has been to set partitions upon a masonry curb and permanently join the partitions to the curb with a mastic seal. Sanymetal furnishes partitions in accordance with this practice. But, Sanymetal suggests that a special curb be built having a rabbet on to which the partition can be set with a clearance of one-half inch off the rabbet. This permits circulation of air which evaporates moisture and insures a longer life for the installation. This can be done without permitting water to leak out of the shower compartment.

Doors are usually furnished for the entrance to dressing room compartments, but the opening between the shower stall compartment and the dressing room compartment is usually equipped with a curtain. Where showers are used continuously a rubber shower curtain is recommended, although standard equipment is a white duck curtain.

When working out a shower compartment installation you may obtain many worthwhile suggestions from the Sanymetal Representative in your locality or by writing direct to the Engineering Department at Cleveland, Ohio.

1. MOISTURE AND RUST PROOF
2. PERMANENT FLINT-HARD FINISH
3. COLORS PERMANENTLY FAST
4. PORCELAIN ENAMELLING PROCESS ADDS STRENGTH



Sanymetal Porcena Partitions and Doors Are Unlike All Other Toilet Partitions and Doors Because of Materials Used and Method of Construction

Porcena (Porcelain Enamelled) Partitions and Doors should never be confused with ordinary single sheet steel panels and doors. Porcelain enamel should never be confused with paint enamel or lacquer finishes. Porcelain enamel is fused onto iron at such high temperatures that the minerals practically become a part of the metal. The fusing of porcelain enamel with the steel actually adds strength to the steel and gives it longer life. Porcena Partitions and Doors are known as flush type insulated panels and doors. They are approximately an inch thick. Note the cross-section illustration. At Point 1: A heavy gauge porcelain enamelled sheet of steel. At Point 2: A heavy gauge porcelain enamelled sheet of steel. At Point 3: Between these two sheets of steel, a dense fiber core. Thus, these partition panels consist of two sheets of 16-gauge steel, each covered on the inside with one coat of porcelain and on the outside with three layers of vitreous porcelain; a total of eight layers of porcelain enamel and a dense ⅞ inch insulating core. The ability of these partitions to withstand shock greatly exceeds the resistance to damaging blows that is obtainable in other materials regarded as suitable for toilet compartments. This construction was originated by Sanymetal Engineers. Sanymetal was first to offer it to the building industry.

"PORCENA" FEATURES

ARE A PROTECTION AGAINST OBSOLESCENCE

SHOCK

Porcena (Porcelain Enamelled) Partitions and Doors withstand shocks and hard usage without injury to their smooth, lustrous surface. Porcelain enamelled partitions and doors are good for years of service and require no refinishing or retouching. In them are combined two vital essentials of an ideal construction material — the structural strength of steel and a flint-like finish like the hardness of glass.

STRENGTH

The process by which Porcena (Porcelain Enamelled) Partitions and Doors are made adds strength to the natural inherent structural strength of the steel. This added strength comes from the fusing of the porcelain enamelling material with the steel. The modern method of applying porcelain enamel is such that the enamel is not easily chipped, scarred or marred in any way. The first layer is burned into the steel at approximately 1600° Fahr. This impregnates the steel with the enamel to the extent that it cannot be hammered out, and actually reinforces the steel body. Thus, the steel is permanently protected from rust or corrosion.

SIMPLE CONSTRUCTION

Porcena Partitions and Doors are made of two sheets of steel, porcelain enamelled on both sides with an insulating core between them and completely sealed all around with steel sealing strips.
(Full description under illustration.)

CLEANLINESS

Porcena Partitions and Doors are impervious to odors, moisture, and ordinary acids. They are moisture proof, which means that they are proof against rust. Absorption of anything — odors, liquids, or what not — presupposes porosity. Porcelain enamel is not porous. It is flint-hard, glass-smooth. It will not absorb odors or moisture. It discourages the too common inclination to disfigure toilet room equipment with degrading scribble.

BEAUTY

The beauty of Porcena Partitions and Doors is as permanent as any material can be. The surface is obstinately resistant to scratching and marring because porcelain enamel combines the hardness of glass with the strength of steel. Porcelain enamel retains its original luster and can be scoured and scrubbed vigorously and frequently, and still look as fresh as the day it came from the factory. It is the new material that stays new.

ENVIRONMENTS

Porcena (Porcelain Enamelled) Partitions and Doors have a hard, glass-like permanent finish. This finish will not rust, tarnish, or change color. Colors are permanently fast — will not fade. This finish has a pearly luster which gives to a toilet compartment an aspect of roominess.

Specifications on Page 3 for Porcena Embassy Toilet Partitions; Page 5 for Porcena Normandie Toilet Partitions; Page 7 for Porcena Academy Toilet Partitions.

Sanymetal

FLUSH TYPE TOILET PARTITIONS

STEEL OR ALUMINUM

(REGULAR BAKED-ON PAINT ENAMEL FINISHES)

ALSO AVAILABLE WITH PARTITION PANELS ONLY IN PORCELAIN ENAMEL

SUITABLE FOR DEVELOPING MODERN ENVIRONMENTS

This type of toilet partition is firmly established as a standard. Sanymetal Flush Type Partitions and Doors are particularly suitable for installation in all types of buildings. In respect to floor sanitation and convenience in cleaning floors this type is unequaled. Flush Type Partitions and Doors harmonize and blend well with the effects produced by materials commonly used for walls, ceilings, and floors.

These Sanymetal Flush Type Partitions and Doors are especially suited not only for toilets and lavatories but for dressing rooms and ward screens in all types of buildings. They embody the latest structural improvements and present outstanding sanitary features combined with durability and resistance to fire.

Materials: Sanymetal Flush Type Partitions and Doors may be made up from the following materials: full cold rolled stretcher leveled furniture finish steel; stainless steel and aluminum. This choice of materials permits the achievement of practically any desired appearance or artistic effect.

Construction Features: Sanymetal Flush Type Partitions and Doors are fabricated in a combination of pleasing rectangular designs which allow for making up the following standard size compartments:

Widths: 30, 32, 33, 34, and 36 inches.

Depths: 36, 42, 48, 54, and 60 inches.

Heights of Panels and Doors: 54 and 60 inches; installed 12 inches above floor so that heights of Panels and Doors, measuring from floor surface to top of Panel or Door, are 66 inches and 72 inches respectively. Headrail usually installed 12 inches above top of Panels and Doors making total over-all heights, floor surface to headrail, 78 inches and 84 inches respectively.

Partitions and Doors are fabricated with double sheets of steel spaced one inch apart filled between and glued under pressure to a sound-deadening insulating fiber core with edges of panels joined, bound and sealed with a continuous drawn locking strip, thus providing rigid one inch thick partition panels and doors with flush surfaces. This method insures uniformity, rigidity and maximum strength along the edges and at every point.

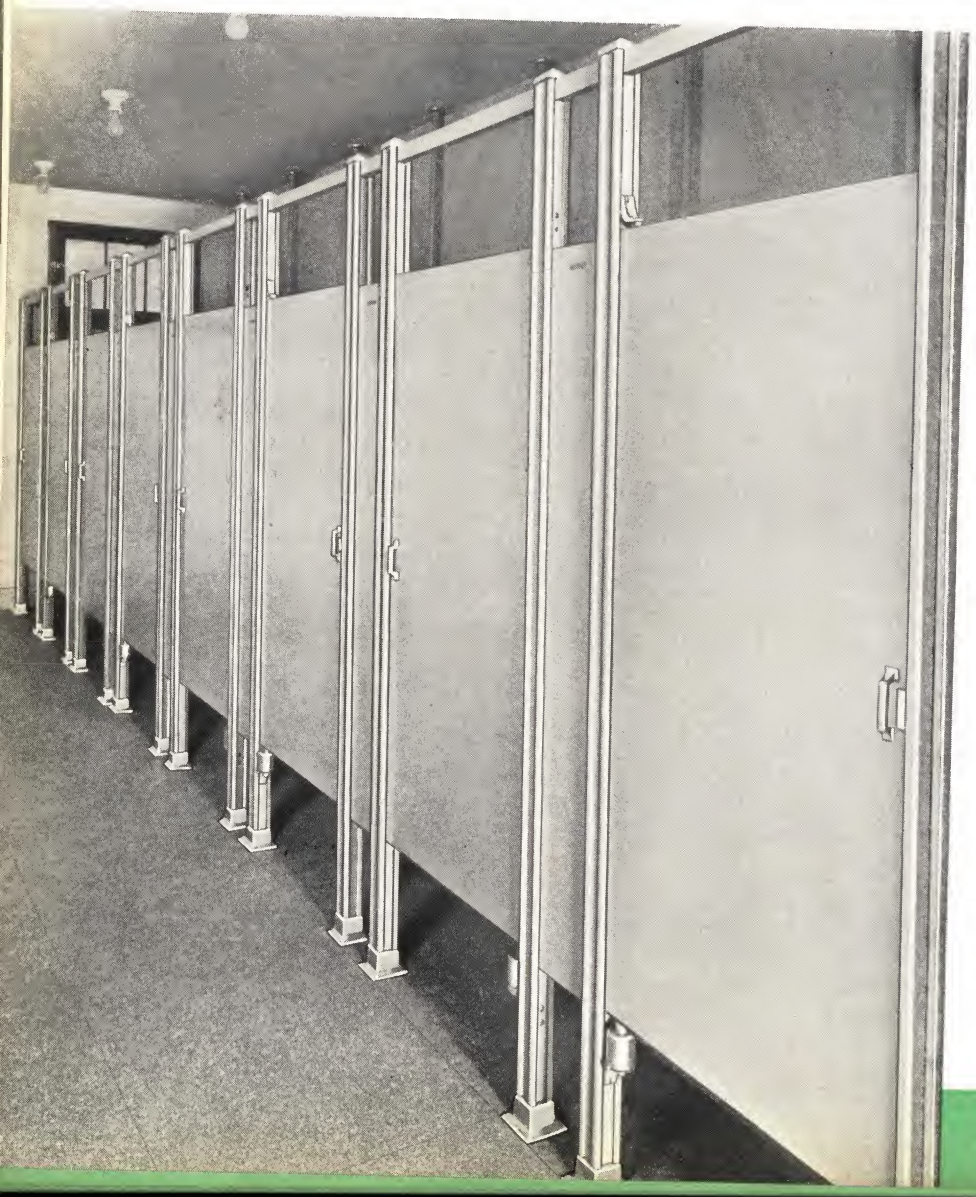
Partitions are set into recesses of posts, which method conceals the joints and connections and reinforces materially both the partition and the post upright, making an unusually strong and rigid installation with all cross-sections true and uniform in profile.

Sanymetal Flush Type Partitions and Doors are finished (unless made of materials which require no finish) with a special rust-resisting baked-on prime coat of sublimed blue lead over which are applied baked-on paint enamel or lacquer finishing coats (standard colors, olive green and gray) in a color selected.

Blueprints of Typical Installations Available to Architects: With over twenty years' experience and well over 40,000 installations as a background, Sanymetal is well equipped to offer architects blue prints of a variety of typical installations. These serve to facilitate the laying out of installations and may be used to conserve time. Requests for blueprints should state size of room and approximate number of compartments contemplated. If possible, also state whether or not installation will be back-to-wall without vent, back-to-wall with vent, back-to-back without vent, or back-to-back with vent.

Hardware illustrated on Page 15.

Specifications on Page 11.



One end of an installation of Sanymetal Flush Type Partition at Euclid Beach Tourist Camp, Cleveland, Ohio.

Installation and Operation

Doors swing on Sanymetal encased full-floating ball bearing roller gravity hinges adjustable to any door swing or position, noiseless, easy action; solid brass; nickel or chromium plated. See Page 15.

Each post is set in sanitary floor shoe which is adjustable to uneven floors, solid brass or aluminum, nickel or chromium plated. See Page 15.

An outstanding feature is the headrail construction.

Rectangular headrail extends through sunken panel section of post and is fastened directly and securely to the post with metal screw. Loose connections at this point positively prevented. Cap on top of post is for finish effect only.

SPECIFICATIONS

SANYMETAL FLUSH TYPE TOILET PARTITIONS

Note: Illustrations and description of features of Sanymetal Flush Type Toilet Partitions on Page 10.

(1) All partitions and doors for toilet, and dressing compartments are to be Sanymetal Flush Type, as manufactured by The Sanymetal Products Co., Inc., of Cleveland, Ohio.

(2) **Doors and Partitions:** Doors and Partitions shall be made 1 inch thick of two sheets of full cold rolled stretcher leveled full finished steel, assembled over and cemented under pressure to a 7/8 inch thick sound deadening fiber core. Panels 54 inches or over shall be made of 20 U. S. gauge steel, smaller sizes, 22 U. S. gauge steel (aluminum, No. 18 B. & S. gauge.) The two face plates shall have formed edges and shall be sealed together with continuous drawn locking strips.

(3) **Posts:** Posts of partitions are to be 2 inches square hollow drawn, interlocked construction of not less than .040 stock, panelled on four sides, forming recesses into which partitions are to be set and securely fastened.

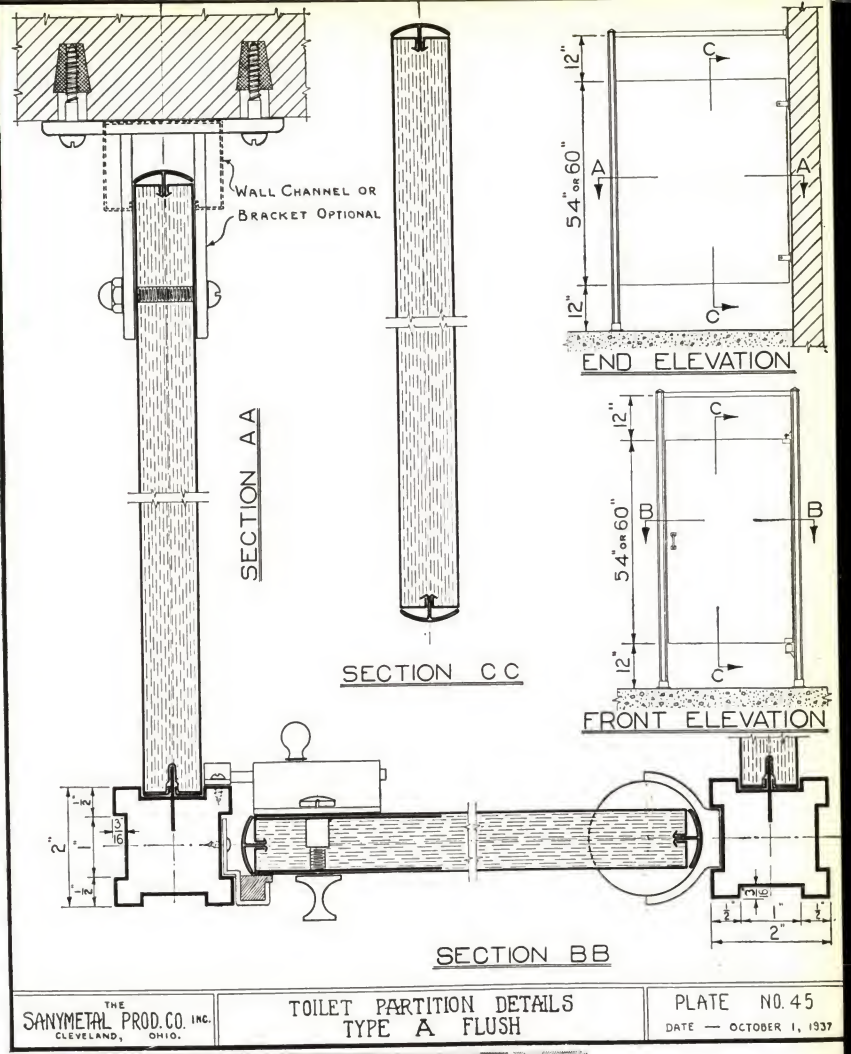
(4) **Headrail Brace:** Partitions when set in place shall be securely braced with continuous 1 inch by 1½ inch drawn steel tubular overhead bracing, extending through the top of posts which are notched to receive headrail. Post and headrail shall be drilled and held in position with metal screw.

(5) **Partition Fittings:** Top Post Cap: The top of post shall be capped with a neat casting, painted same as partitions and headrail.
Floor Fittings: The front posts of partitions to be securely fastened to floors with 2-inch high wrought brass shoes to be furnished nickel plated (specify chrome plated if preferred); shoes to be securely fastened to floors with two No. 12 by 1½-inch wood screws into lead or fiber expansion shields.
Wall Fittings: Partitions may be fastened to back walls with continuous boxed U channels (or if preferred back of partition may be set approximately 1 inch from back wall with cast or wrought steel knee braces painted same as partitions).

(6) **Door Hardware:** Doors shall be equipped with brass gravity hinges with concealed ball bearing rollers. Hinges are to be adjustable for inswinging, outswinging, or double acting doors. Each door shall be equipped with one cast pull, stops, coat hook and slide bar latch of white metal chrome plate. All door hardware to be attached with brass chrome plated through sleeve bolts with theft-proof heads.

(7) **Finish:** All metal to be thoroughly sanded, washed with benzine, filled and primed with sublimed blue lead baked on. If paint enamel finish, spray on and bake separately, two additional coats (standard colors, olive green and gray) baking paint enamel of a color selected. If partition panels are to be porcelain enamel, refer to page 7 — paragraph 2.

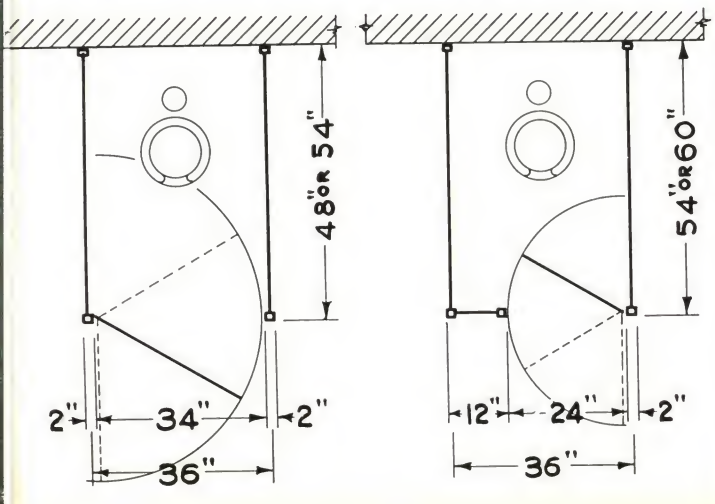
Hardware illustrated on Page 15.



THE SANYMETAL PROD. CO. INC. CLEVELAND, OHIO. | TOILET PARTITION DETAILS TYPE A FLUSH | PLATE NO. 45 DATE — OCTOBER 1, 1937



Installation of Sanymetal Flush Type Toilet Partitions at Yankee Stadium, New York. View shows only one of several batteries installed like one illustrated.



INSWINGING AND OUTSWINGING DOORS

It is considered of prime importance that all corridors and aisles be unobstructed at all times. Consequently, Sanymetal suggests that wherever possible the toilet partition installation should embody inswinging doors. Doors swinging into the compartment require deeper compartments, but outswinging doors do not reduce the essential depth of a compartment enough to overcome the disadvantage of obstructed corridors and aisles and possible injury to persons. The total amount of space essential for the outswinging door, plus the depth of the compartment, is much greater than the amount of space required for a compartment of sufficient depth to allow for an inswinging door.

Inswinging doors should be installed to stand open. This position instantly indicates whether or not the compartment is in use and affords better ventilation of compartment.

Inswinging doors are always latched when closed, thereby preventing danger of injury to individuals. Inswinging doors are never subjected to the punishment that outswinging doors receive from children who are tempted to ride them.

Sanymetal furnishes both inswinging and outswinging doors, but recommends the use of inswinging doors.

Sanymetal

FULL PANEL TYPE TOILET PARTITIONS

STEEL OR ALUMINUM

(REGULAR BAKED-ON PAINT ENAMEL FINISHES)

THE TYPE TO USE WHEREVER A RECTANGULAR DESIGN MAY DOMINATE THE ENVIRONMENT

Sanymetal Full Panel Type Partitions are actually full panel. Each panel is completely surrounded by hollow drawn and interlocked stiles and rails, whereas usual practice utilizes post into which panel fits, to frame one side of panel. Sanymetal Full Panel Type construction is more rigid and substantial and able to withstand rough service. Sanymetal Full Panel Type Toilet Partitions and Doors embody modern features of design and fit well into any environment.

Sanymetal Full Panel Type Toilet Partitions find favor where long established standards of uniformity in the use of such materials must be complied with, or where conservatism and other limiting conditions must be met by the installation of suitable partitions of recognized value and dependability.

Materials: Sanymetal Full Panel Type Toilet Partitions and Doors may be made up from the following materials: full cold rolled stretcher leveled furniture steel; and aluminum. This choice of materials permits the achievement of practically any desired appearance or artistic effect.

Construction Features: Sanymetal Full Panel Type Toilet Partitions and Doors are fabricated in a combination of pleasing rectangular designs which allow for making up the following standard size compartments:

Widths: 30, 32, 33, 34, and 36 inches.

Depths: 36, 42, 48, 54, and 60 inches.

Heights of Panels and Doors: 54 to 60 inches; always installed 12 inches above floor so that heights of Panels and Doors, measuring from floor surface to top of Panel or Door, are 66 inches and 72 inches respectively. Headrail usually installed 12 inches above top of Panels and Doors making total over-all heights, floor surface to headrail, 78 inches and 84 inches respectively.

Partitions and doors are made with wide hollow drawn and interlocked stiles and rails mitred at the four corners and forced over a single sheet steel panel. The mitred corners have continuous welds which, with the interlock type of construction used in forming the hollow drawn steel shape, insures sealed and water tight joints and seams between the panel sheets and the stiles and rails. Dust catching ledges are reduced to a minimum without sacrificing modern, pleasing and correct architectural design and other features that characterize first class hollow metal construction.

Partitions are set into recesses of posts, which method conceals the joints and connections and reinforces materially both the partition and the post upright, making an unusually strong and rigid installation with all cross-sections true and uniform in profile. Each partition with its integral front and rear post is a single substantial unit.



Typical installation of Sanymetal Full Panel Type Toilet Partitions at The Providence Journal, Providence, Rhode Island

Sanymetal Full Panel Type Toilet Partitions and Doors are finished (unless made of materials which require no finish) with a special rust-resisting baked-on prime coat of sublimed blue lead over which are applied baked-on paint enamel finishing coats in a color selected (standard colors, olive green and gray).

Hardware illustrated on Page 15.
Specifications on Page 13.

Blueprints of Typical Installations Available to Architects: With over twenty years' experience and well over 40,000 installations as a background, Sanymetal is well equipped to offer to architects blueprints of a variety of typical installations. These facilitate the laying out of installations and may be used to reduce time considerably. Requests for blueprints should state size of room and approximate number of compartments contemplated. If possible, also state whether or not installations will be back-to-wall with vent, back-to-wall without vent, or back-to-back with vent.

SPECIFICATIONS

SANYMETAL FULL PANEL TYPE TOILET PARTITIONS

Note: Illustrations and description of features of Sanymetal Full Panel Type Toilet Partitions on Page 12.

(1) All toilet partitions and doors, entrance screens and dressing rooms are to be Sanymetal Full Panel Type as manufactured by The Sanymetal Products Co., Inc., Cleveland, Ohio.

(2) **Doors and Partitions:** Doors and partitions shall be furnished with matched stiles and rails on the four sides, mitred, welded and ground flush. These stiles and rails are to be drawn steel shapes of not less than .040 gauge with edges turned in and interlocked, forming water-tight joints and a recess into which the panel sheet is to be forced. Gauges are to be as recommended by the Bureau of Standards, U. S. Department of Commerce. Simplified practice recommendation R101-29 as follows: In partitions 54 inches deep by 54 inches high or larger, panel sheets 16-gauge U. S. Standard (0.0613 inch). In partitions smaller than the above mentioned and doors, panel sheet steel shall be 18-gauge U. S. Standard (0.0490 inch). (Aluminum, No. 14 B. and S. gauge.)

(3) **Posts:** Posts of partitions are to be 2 inches square hollow drawn, interlocked construction of not less than .040 stock, panelled on four sides, forming recesses into which front stile of partitions is to be set and securely fastened.

(4) **Headrail Brace:** Partitions when set in place shall be securely braced with continuous 1 inch by 1½ inch drawn steel tubular overhead bracing, extending through the top of posts which are notched to receive the headrail. Post and headrail shall be drilled and held in position with metal screw.

(5) **Partition Fittings:** Top Post Cap: The top of post shall be capped with a neat casting, painted same as partitions and headrail.

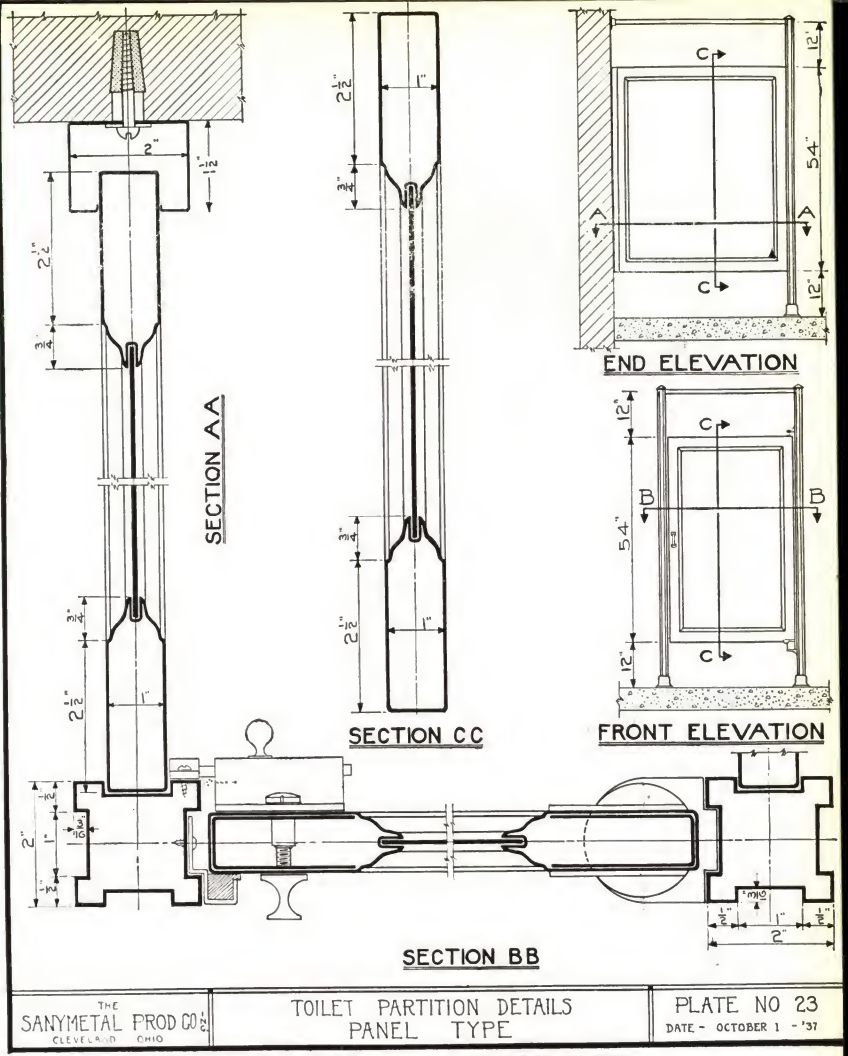
Floor Fittings: The front posts of partitions are to be securely fastened to floors with 2 inch high wrought brass shoes to be furnished nickel plated (specify chrome plated if preferred); shoes to be securely fastened to floors with two No. 12 x 1½ inch wood screws into lead or fiber expansion shields.

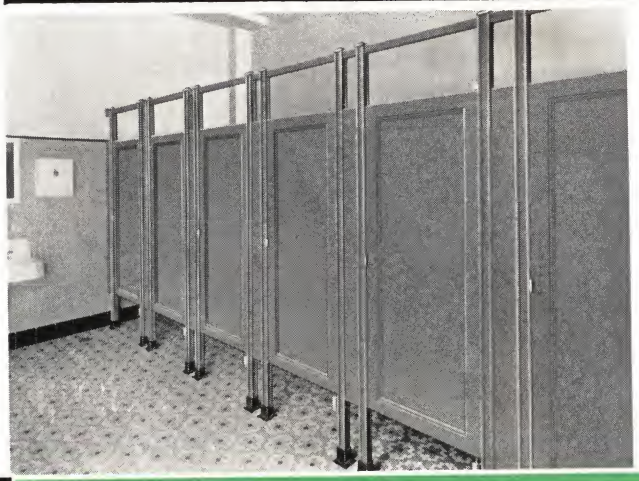
Wall Fittings: Partitions may be fastened to back walls with continuous boxed U channels (or if preferred back of partition may be set approximately 1 inch from back wall with cast or wrought steel knee braces painted same as partitions).

(6) **Door Hardware:** Doors shall be equipped with brass gravity hinges with concealed ball bearing rollers. Hinges are to be adjustable for inswinging, outswinging, or double acting doors. Each door shall be equipped with one cast pull, stops, coat hook, and slide bar latch of white metal chrome plated. All door hardware to be attached with brass chrome plated through sleeve bolts with theft-proof heads.

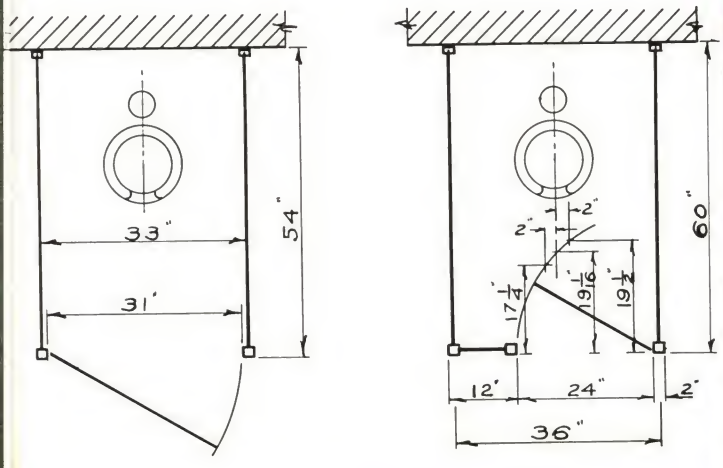
(7) **Finish:** All metal to be thoroughly sanded, washed with benzine, filled and primed with sublimed blue lead baked on. If paint enamel finish, spray on and bake separately, two additional coats baking paint enamel of color selected (standard colors, olive green or gray).

Hardware illustrated on Page 15.





Sanymetal Full Panel Type Partitions in Montgomery Ward Company; at Hagerstown, Maryland.



WIDE AND NARROW DOORS

The size of door determines the general appearance of the toilet partition installation and affects the degree of convenience realized because the size of the door may either enlarge or limit the amount of free space inside the compartment. The dimensions of an outswinging door become important when considered in connection with accessibility to the compartment from the corridor or aisle.

Sanymetal suggests that the most satisfactory installation for a compartment 30 inches or more wide should consist of a front panel and narrow door. This is based on the principle that the smaller sized door is lighter in weight, requires less room in which to swing in or out, and exerts less leverage on the hinges. Compartments less than 30 inches in width may be satisfactorily built up with or without front panels.

Sanymetal furnishes whatever panels and doors may be required for making installations either way but recommends the use of front panels and inswinging narrow doors.

Sanymetal

FLUSH TYPE DOORS

REGULAR BAKED-ON PAINT ENAMEL OR PORCELAIN ENAMEL FINISHES

Materials which have long been regarded as suitable for toilet partition installations, although yielding, in many instances, to the use of porcelain enamelled steel, continue to be used in various types of buildings. Doors of suitable design and construction for such installations are usually made of steel and finished in baked-on paint enamel. For this purpose, Sanymetal offers two types of Doors: namely, Flush Type and Full Panel Type. The Sanymetal Flush Type Door finished in baked-on paint enamel or porcelain enamel is by far the most popular equipment for marble or structural glass installations.

Sanymetal Flush Type Doors are made 1 inch thick of two sheets of full cold rolled stretcher level full finished steel, assembled over and cemented under pressure to a 7/8 inch thick sound deadening fiber core, with all edges joined, bound and sealed with a continuous drawn locking strip, thus providing rigid 1 inch thick construction with flush surfaces. Standard stock sizes of Full Width Doors and Narrow Width Doors are given in table on Page 19. Standard stock sizes are not intended to limit architects and engineers in designing the type of installation most suitable for a particular environment. Sanymetal fabricates special sizes of Doors to meet conditions of a particular installation. For specifications on doors finished in porcelain enamel see Page 7, Paragraph 2.

Sanymetal Flush Type Doors are finished (unless made of material such as stainless steel which requires no finish) with a special rust resisting baked-on prime coat of sublimed blue lead, over which are applied baked-on paint enamel or lacquer finishing coats (standard colors, olive green and gray) in any color selected. Complete description of Flush Type Doors on Page 10. (Complete description of doors finished in porcelain enamel on Page 6; for specifications see Page 7, Paragraph 2.)

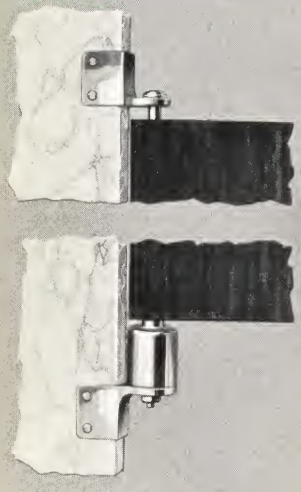
Sanymetal Full Panel Type Doors

These are actually full panel construction. Panel is completely surrounded by hollow drawn and interlocked stiles and rails, mitred and permanently welded and ground flush. Edges are turned and interlocked, forming water-tight sections, making this type of door proof against the seepage of water into hollow drawn sections, thus insuring longer life for the entire structure. These doors are finished in the same manner as Flush Type Doors. Complete description of Full Panel Type Doors on Page 12.



Sanymetal Flush Type Door with Marble Toilet Compartment.

SANYMETAL HINGES FOR DOORS ON MARBLE



Type A
Standard Hinge Mounting for Ordinary Conditions.



Type B
Hinge Mountings for Use with Pipe Support at Top of Marble Stile.



Type G
Offset Hinge Mounting which permits Door to swing 100 degrees without pressure on Marble Stile. When ordering specify whether right or left hand door.

Sanymetal full floating ball bearing gravity roller hinges give quiet, easy operation with no slamming, and can be adjusted so that door remains open when the compartment is not occupied. This is same type of hinge that is standard equipment on doors for all Sanymetal Toilet Partition Installations. It is adapted to various mountings, which makes it suitable for mounting doors on marble, slate or structural glass partitions. The three most common types of mountings are illustrated on this page and designated as Type A, Type B and Type G.

When specifying and ordering doors to be mounted on marble or structural glass, follow these instructions: (1) state type of hinge mounting; (2) give thickness of hanging stile of marble or structural glass; (3) state height of Pilaster and whether it extends to floor or is set on pipe standard; (4) specify finish (nickel or chromium); (5) state type, material and color finish of door. Hinges are made for marble, slate and structural glass stiles of any thickness.

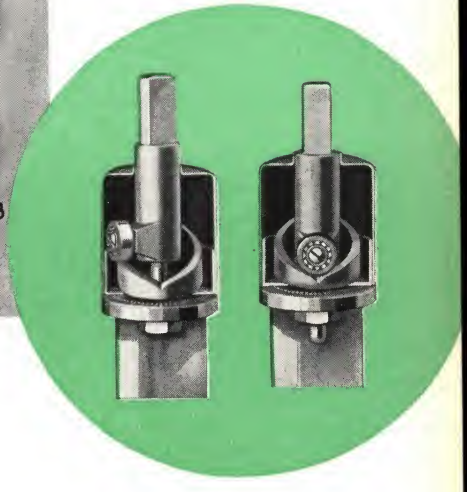
In addition to hinges, each door is equipped with one cast pull, stops, coat hook and slide bar latch of white metal chromium plated. All door hardware is attached with brass chrome plated through sleeve bolts with theft-proof heads. These and other items of hardware illustrated on Page 15. Consult Sanymetal Representative in your locality concerning doors for marble or structural glass installations.

Sanymetal TOILET PARTITION HARDWARE 20/21

AFFORDS THE UTMOST IN CONVENIENCE



The illustrations below show sectional view of Sanymetal Ball Bearing Roller Gravity Hinges. Ball bearings and race are stainless steel. These hinges are fully encased. They are adjustable to any door swing or any pilaster or post. Noiseless, easy action, solid brass chromium plated. A Sanymetal development universally used in the toilet partition industry.



Every item of Sanymetal Toilet Partition Hardware is substantially constructed and mechanically perfected to afford the utmost convenience. Sanymetal engineers, utilizing the findings of years of experience and appreciating the unrelenting abuse hinges and other door fittings must survive, have fortified each fitting with reserve strength and stamina. Sanymetal engineers originated, pioneered, and patented what is today recognized as the gravity hinge which is so widely used. All hardware used on Sanymetal Porcena and Sanymetal Flush Type and Full Panel Type Toilet Partitions is attached with brass, chromium plated through sleeve bolts with theft-proof heads.

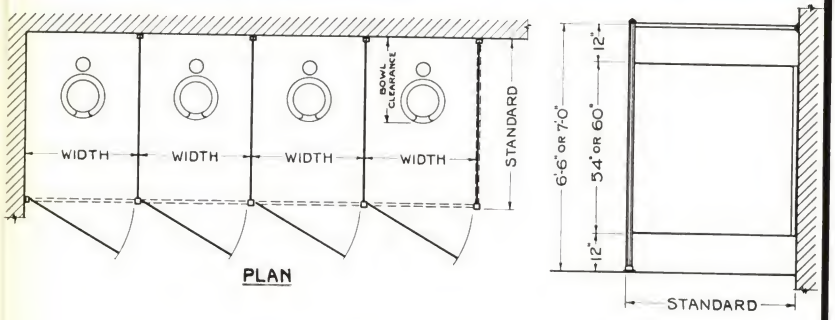
No. 762 Half Surface Butt Hinge.
No. 8360 Top Hinge Assembly, pivot hinge; ½ inch in diameter of heat treated alloy steel rotating in impregnated graphite bronze bushing, noiseless, practically wearless, easy action assured.
No. 8370 Roller Hinge Assembly, Sanymetal End Gate Full Floating Ball Bearing Roller Gravity Hinge; adjustable to any door swing or any post. Noiseless, easy action, solid brass, chromium plated.
No. 801 Wrought Post Floor Shoe, sanitary, self-draining design; adjustable for uneven floors, a simple, sturdy design, free of gadgets, solid brass or aluminum chromium plated.
Coin Lock (Doors with Coin Locks must be equipped with 872-S Spring Hinge).
No. 360 Spring Butt Hinge.
No. 871-S Top Pivot Spring Hinge.
No. 872-S Bottom Pivot Spring Hinge.
No. 701 Cast Post Floor Shoe; sanitary design; a simple, sturdy design free of gadgets; chromium plated.

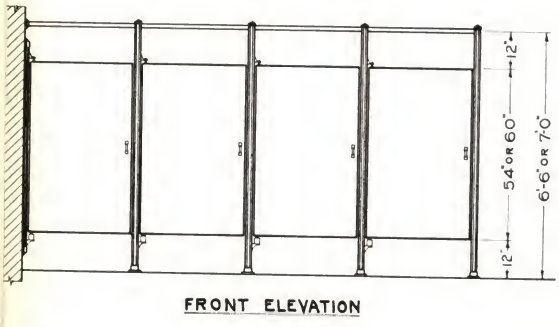
No. 320 Wall Flange for Headrail.
No. 706 Wall Post Cap for attaching wall post to wall.
No. 316 Post Cap for ornamental purposes only.
No. 721 "T" Ball Fitting for Headrail.
No. 724 Wall Bracket for securing partition panel to wall.
No. 704 Floor Post Inserts.
No. 783 Paper Holder, Box Type.
No. 718 Curtain Rod Flanged for partition post.
No. 720 Curtain Rod Flanged for walls.
No. 716 Back Post Cap.
No. 725 Back Wall Bracket.
No. 322 "Y" Fitting (right or left hand) for bracing.
No. 321 "T" Fitting for rectangular Headrail.
No. 784 Paper Holder, Roll Type.
No. 2112 Partition Panel Clip.
No. 2113 Panel "T" Clip.
No. 771 Bumper.
No. 532 Outswinging Combination Stop and Keeper.
No. 531 Inswinging Combination Stop and Keeper.

No. 700 Door Stop.
No. CS-742 Check Stop.
No. 742 Door Stop.
No. 775 Rectangular Curtain Hook.
No. 774 Round Curtain Hook.
No. 786 Soap Tray.
No. 7810 Combination Coat Hook and Bumper.
No. 7800 Coat Hook.
No. 787 4-inch Coat Hook.
No. 7400 Pull, modern design.
No. 772 Hasp for padlock (A–Door part, B–Jamb part).
No. 741 Cast Door Pull.
No. 770 Cylinder Block and Keys.
No. 769 Flat Key Lock and Keys.
No. 745 Double Door Latch.
No. 2129 Double Door Latch Keeper
No. 7570 Military Latch.
No. 869 Throw Latch Keeper.
No. 7430 Latch.
No. 2103 Keeper.

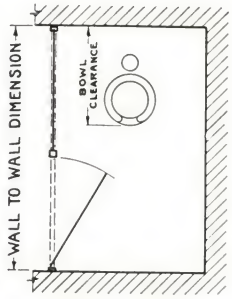
Sanymetal TOILET

BACK-TO-WALL TOILETS WITHOUT VENT





This type of installation consists of a single row battery of compartments built against the back wall and without vent or utility space. In this installation the plumbing is concealed. Vent space is provided for in the masonry wall. Such an installation proves the most satisfactory from a maintenance standpoint and is perhaps the most widely used of all designs. Furnished either with or without doors. If with doors, then with either inswinging or outswinging doors. Also furnished in a single post or double post front panel construction. When furnished single post construction, doors are full width of front of compartment and where right angle wall forms one side of the end compartment, a wall post slightly higher than the height of the door is used for hinging the door or to serve as a jamb in case the door swings in the opposite way. With double post front panel construction, the front of the compartment is enclosed by an "L" Front Panel and the door. Where right angle wall forms one side of compartment a Wall Front Panel adjoins the wall. This panel is set in an adjustable wall channel which insures a perfect fit even against badly plumbed walls. This channel is closed at top and bottom and fastens to the wall with concealed screws. It is the same type of channel that is used to attach the partition panels to the back wall of the installation. When outside window comes at point where installation would, or should, adjoin wall, consult Sanymetal representative or write Engineering Department at Cleveland, Ohio.

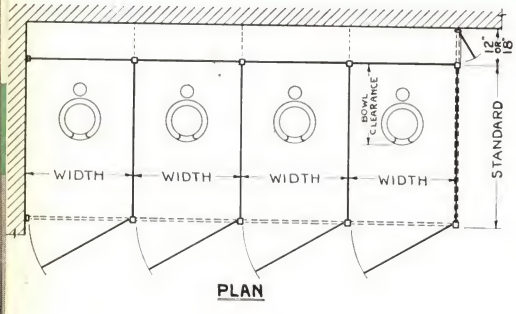


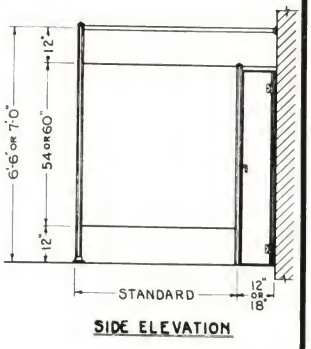
Back-to-wall toilets without vent are installed with either Flush Type or Full Panel Type Partitions.

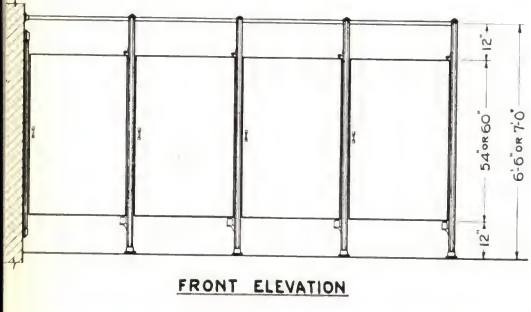
Single Toilet Without Vent

This is a typical view of how a single toilet installation without vent space can be made where walls enclose two sides of the compartment. Usually adapted for purpose of conserving space.

BACK-TO-WALL TOILETS WITH VENT







Back-to-wall toilets with vent include a vent or utility space of the same height as the dividing partition panels. This vent or utility space is between the rear of the compartment and the wall of the room. The vent space is sometimes built up by use of metal partition panels or may be built up of other materials which the architect may select. If utility or vent space is less than 18 inches in depth, Sanymetal recommends that architect specify, if metal partition backs are used, that these backs be two piece units with upper portion of panel removable for easy access to plumbing. Utility doors and tops are provided in dimensions to suit any required vent or utility space depth and height. If compartments are to be ventilated through the vent or utility space, louvers or vent registers should be specified in back panels.

In this type of installation vent space should be enclosed at the top making a completely enclosed vent space chamber. Access is provided by the utility door at one end of the chamber if depth is 18 inches or greater, otherwise removable backs as above described should be specified. This installation can be made with either Flush Type or Full Panel Type Partitions and Doors and with other variations as noted under the heading Back-to-Wall Toilets Without Vent.

Note: Refer to Page 11 for information regarding Inswinging and Outswinging Doors, and to Page 13 for information regarding Wide and Narrow Doors.

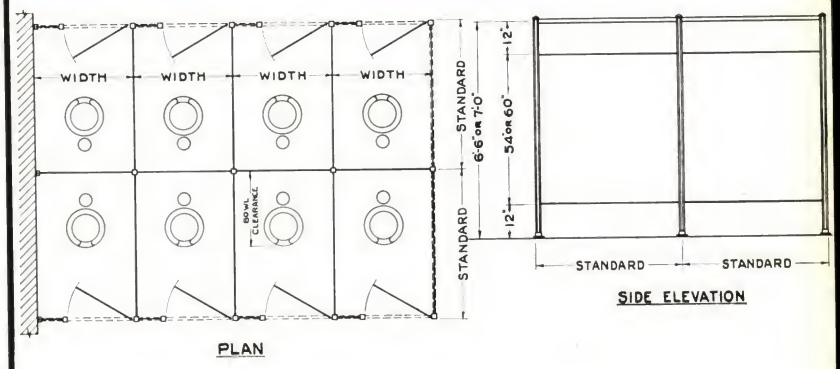
PARTITION INSTALLATIONS

BACK-TO-BACK TOILETS WITHOUT VENT

This type of installation consists of a double row battery of compartments and is suitable for providing the maximum number of toilet compartments in an allotted space. Back-to-back compartments without vent are also commonly used where dressing compartments are adjacent to shower compartments.

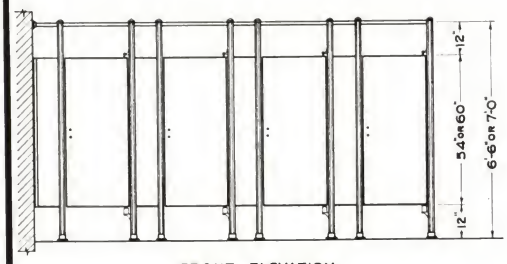
In Sanymetal back-to-back without vent installations the back of each compartment consists of a single panel partition either Flush Type or Full Panel Type. Backs are usually specified to be set 12 inches off the floor since this makes the most sanitary installation and affords easy accessibility to plumbing supply lines from either side of the back panel partition. In this type of installation the design and the construction of the Sanymetal posts is utilized to the utmost advantage in joining partition panels and the back panel. Where such an installation is built at right angles to an inside wall, the plumbing supply lines are usually run from the wall directly below the back panels. This makes plumbing easily accessible from either side of the back panel. If flush tank toilets are to be installed and it is necessary to attach flush tanks to back panels, architect should specify that reinforcement be provided in these backs to carry the added weight of the two tanks which will be mounted on either side of the back panel.

This type of installation may be equipped with doors or furnished without doors. If with doors, then inswinging or outswinging doors can be furnished. (See Page 11 for details.) A back-to-back without vent installation may be furnished with the "L" Front construction and narrow door or with the single post construction and full width door. Either Full Panel Type or Flush Type Partitions are equally adaptable in effecting this type of installation.



PLAN

SIDE ELEVATION



FRONT ELEVATION

BACK-TO-BACK TOILETS WITH VENT

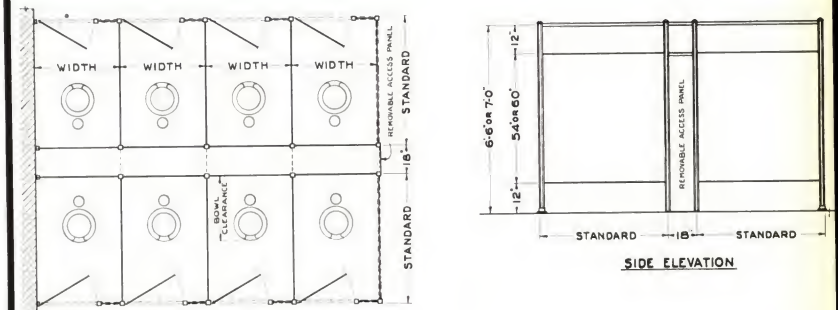
In this type of installation the vent or utility space is usually created by the use of metal partition back because this saves the cost of the masonry wall construction.

In back-to-back toilets the vent or utility space is of the same height as the dividing partition panels. If the utility or vent space is less than 18 inches in depth, Sanymetal recommends that architects specify metal partition backs be two piece units with upper portion of panel removable for easy access to plumbing. Utility doors and tops are provided in dimensions to suit any required vent or utility space depth and height. If compartments are to be ventilated through the vent or utility space, louvers or vent registers should be specified in the back panel.

In an installation of this type, the plumbing supply lines are completely concealed but still easily accessible, particularly when back panels are specified to be two piece units with the upper portion of the panel removable for access to the plumbing.

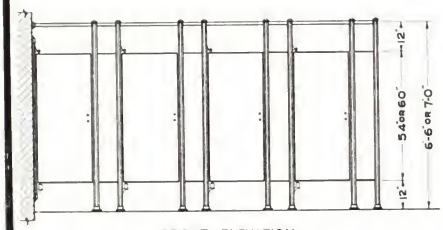
The top of the vent or utility space in this type of installation should be completely enclosed, making a closed vent space chamber. Access to plumbing is provided by utility door at one end of the chamber if depth is 18 inches or greater; otherwise, removable back as above described should be specified. This installation can be made with either Flush Type or Full Panel Type Partitions and Doors and with other variations which may be worked out with the aid of a Sanymetal representative or by writing the Engineering Department at Cleveland, Ohio.

Note: Refer to Page 11 for information regarding Inswinging and Outswinging Doors, and to Page 13 for information regarding Wide and Narrow Doors.



PLAN

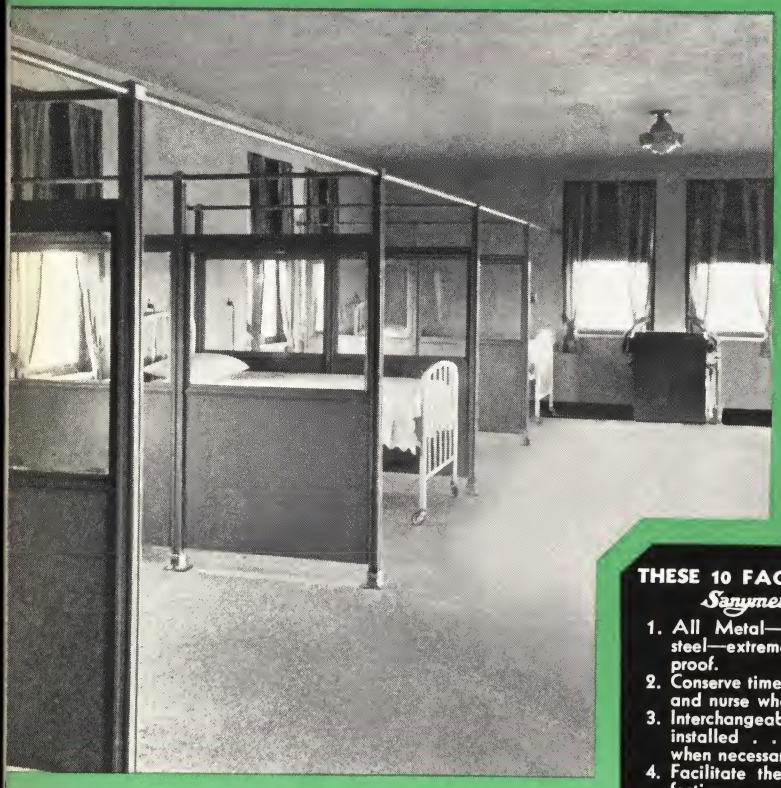
SIDE ELEVATION



FRONT ELEVATION

Sanymetal

HOSPITAL CUBICLES



Installation of Sanymetal Hospital Cubicles in Lucas County Children's Hospital, Toledo, Ohio.



Installation of Sanymetal Hospital Cubicles for Children in Aultman Hospital, Canton, Ohio.

THESE 10 FACTS RECOMMEND *Sanymetal* Cubicles

1. All Metal—high grade furniture steel—extremely sanitary and fireproof.
2. Conserve time and energy of doctor and nurse when attending patients.
3. Interchangeable units . . . quickly installed . . . easily rearranged when necessary.
4. Facilitate the control of cross infection.
5. Rigid, rattle-proof installation.
6. Permit adequate ventilation without draft.
7. Provide desirable semi-privacy for patients.
8. Make ward space more desirable and profitable.
9. Layouts submitted without obligation.
10. Expert erection service based on years of specialized hospital experience.

Are Adaptable to Every Arrangement and Requirement

Sanymetal Hospital Cubicles are readily adaptable to use in open wards, maternity wards, surgical and examination wards, children's wards and are widely used as waiting booths in hospitals, out-patient departments and in clinics, to mention a few of the numerous ways hospitals have utilized Sanymetal Hospital Cubicles and Partitions.

The semi-seclusion created by using Sanymetal Hospital Cubicles has increased the satisfaction of patients, the prestige and income of hospitals. This quiet privacy considerably facilitates the work of the hospital staff because patients readily accede to treatment they formerly resisted because of embarrassment. Sanymetal Hospital Cubicles also aid in facilitating segregation according to condition and ailment, permit cross ventilation without draft, lessen irritation, tend to promote orderliness and quiet, isolate and retard spread of contagious diseases.

Materials, Construction and Finish: Sanymetal Hospital Cubicles, Screens and Partitions are constructed of high grade furniture steel with finest baked-on enamel finish. They are easily cleaned, highly sanitary, fire-resisting. Rigid inter-locking design insures substantial construction when erected. Furnished in standard units, they are adaptable to any space, easily installed and lend themselves to rearrangement at any time. The hospital maintenance staff can install or rearrange Sanymetal Hospital Cubicles so simplified is their construction.

The panels of Sanymetal Flush Type Hospital Cubicles are 1 inch thick; formed of two sheets of full cold rolled stretcher leveled full finish steel, assembled over and cemented under pressure to a 7/8-inch thick sound deadening fiber core. The two steel face plates have formed edges and are sealed together with continuous drawn locking strips. This assembly is entirely free of open seams and exposed edges. It provides a uniform rigidity and strength over the entire area of the panel. Panels fit snugly into channels in supporting posts and are secured with metal screws, eliminating all possibility of loose connections. Assembly is extremely rigid, and exceedingly desirable. Sanvmetal has served the specialized demands of hospitals for many years. Sanymetal Cubicles and Partitions are easy and economical to install. . readily lend themselves to rearrangement when necessary . . are modern and suitable in appearance . . sanitary . . . unmatched for durability. For further information see nearest Sanymetal representative or write for special brochure describing all types of Sanymetal Cubicles in detail.

A *Specialized* ENGINEERING SERVICE

★ READY TO SERVE YOU ★

It is now possible for you to achieve as new and original treatments in toilet room environments as is possible for other interiors. Authoritative suggestions are now available from a source most willing and eager to develop new ideas and suggestions.

For over twenty years now, Sanymetal has been receiving inquiries by the hundreds from architects, engineers and contractors regarding the suitability of this or that type of toilet partition and this or that suggested arrangement or layout for toilet rooms, shower rooms, and locker rooms. Naturally in responding to these requests, Sanymetal's engineers and craftsmen were the first to detect the need for and apply successfully the merits of porcelain enamelled metal in the manufacture of toilet partitions and wainscot panels in a manner which is promoting a renaissance in toilet room environment.

The range of types of Sanymetal partitions for toilet rooms, shower rooms and locker rooms presented in this catalog is visible evidence of how Sanymetal engineers and craftsmen have been encouraged by the many ideas presented by architects and engineers to originate and offer practical improvements that have removed restrictions to creative talent.

Technical Service: Out of an experience extending over twenty years during which Sanymetal has participated in well over 40,000 toilet room installations, Sanymetal offers a technical service to architects and engineers for the purpose of laying out difficult toilet room installations for every type of building.

The purpose of this service is to facilitate the laying out of installations and in no way encroaches upon the exercise of creative talent by architects in developing modernity and elegance in toilet room environment. From thousands of blueprints on file this phase of Sanymetal service may be used to reduce time. Requests for technical service should state the size of the toilet room and the approximate number of compartments contemplated. If possible, also state whether or not installation will be back-to-wall without vent, back-to-wall with vent, back-to-back without vent or back-to-back with vent.

A commendable procedure is to consult the Sanymetal representative in your locality. If that is not possible, then write direct to the factory, at Cleveland, Ohio.

STOCK SIZES
OF PARTITIONS AND DOORS

Architects and engineers will realize worthwhile advantages by specifying standard size compartments wherever possible. This practice expedites the fabrication of the units that are to compose the toilet partition installation and reduces installation time. Certain economies are thereby effected.

Standard size compartments are as follows:

Widths: 30, 32, 33, 34, and 36 inches.

Depths: 36, 42, 48, 54, and 60 inches.

Heights of partitions and doors: 54 and 60 inches.

Distance from floor to bottom of partitions and doors: 12 inches.

Distance from top of partitions and doors to headrail: 12 inches.

Over-all heights measured from floor to headrail: 78 to 84 inches, the difference being determined by the height of partitions and doors which are either 54 inches or 60 inches in height.

The foregoing dimensions are standard stock sizes. They are not intended to limit architects and engineers in designing the type of installation most suitable for a particular environment. Sanymetal fabricates special sizes of partitions and doors to meet special conditions and is always ready to willingly cooperate in the fabrication of whatever sizes of partitions and doors may be required for a particular installation.

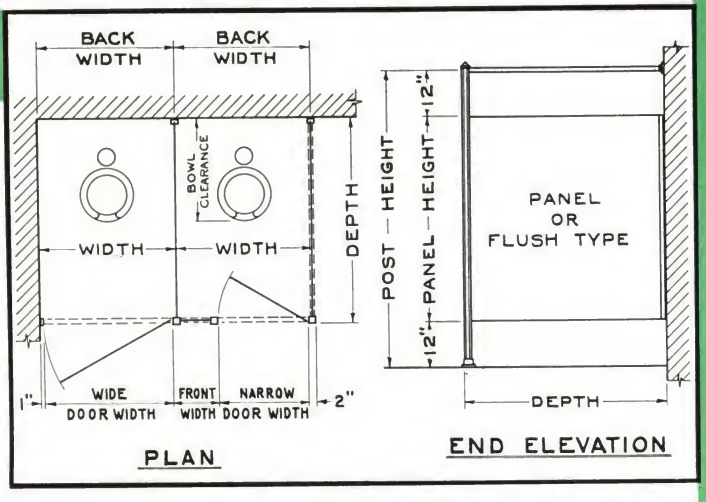


Table of Stock Sizes of Sanymetal Toilet Partition Units

Stock Sizes Compartment Side Panels	Stock Sizes Full Width Doors	Stock Sizes Narrow Door	Stock Sizes "L" Front Panels	Stock Sizes—Back Panels	
				OFF FLOOR	TO FLOOR Note: Height measurements are full height
36 x 54	28 x 54	20 x 54	6 x 54	30 x 54	30 x 66
43 x 54	30 x 54	22 x 54	8 x 54	32 x 54	32 x 66
48 x 54	31 x 54	24 x 54	10 x 54	33 x 54	33 x 66
54 x 54	32 x 54	26 x 54	12 x 54	34 x 54	34 x 66
60 x 54	33 x 54	28 x 54	6 x 60	36 x 54	36 x 66
36 x 60	34 x 54	20 x 60	8 x 60	30 x 60	30 x 72
42 x 60	28 x 60	24 x 60	10 x 60	32 x 60	32 x 72
48 x 60	30 x 60	26 x 60	12 x 60	33 x 60	33 x 72
54 x 60	31 x 60	28 x 60		34 x 60	34 x 72
60 x 60	32 x 60			36 x 60	36 x 72
	33 x 60				
	34 x 60				

Note: These dimensions also apply to the units used in shower stall installations.

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Sanymetal

SALES REPRESENTATIVES

Competent Sales Representatives of recognized standing in their respective territories are located in the following cities. Local telephone or business directories in most cases give name, address, and telephone number of Sanymetal Representative. Whenever necessary to make proper contact with Sanymetal Representative, please wire or write factory at Cleveland, Ohio.

ALABAMA
Birmingham: H. G. Mouat, 850 Martin Bldg.

ARKANSAS
Little Rock: Nevil C. Withrow, 207 Insurance Bldg.

CALIFORNIA
Los Angeles: Continental Specialties Co., 1367 E. 17th St.
San Francisco: Price Building Specialties Co., 35 Gilbert St.

COLORADO
Denver: Colorado Builders Supply Co., 1534 Blake St.

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New Haven: H. Dumelin & Sons, 295 Sherman Ave.

DISTRICT OF COLUMBIA
Washington: Harry Schnabel, 4316 15th St., N. W.

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Jacksonville: Builders Products Co., 204 E. 8th St.
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Atlanta: Dwight L. Hollowell, P. O. Box 1182 (Bona Allen Bldg.)

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Decatur: Hugh J. Baker & Co., 311 Citizens Bank Bldg.
Moline: Beder Woods Sons Company

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Lansing: C. M. Van Auken, 1717 Inverness Ave.
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Minneapolis: The Hustad Company, 529 S. 7th St.

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St. Louis: Herbert Golterman, 806 Louderman Bldg.

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Omaha: Earl S. Lewis & Co., 601 Redick Tower

NEVADA
Reno: Fisher C. Bailey Co., E. Fourth and Alameda Ave.

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Raleigh: Peden Steel Company, 512 W. Hargett St.

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Dayton: John G. Pool Co., 494 Ludlow Arcade
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Johnstown: Griffith-Custer Steel Corp., 307 Bedford St.
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Scranton: The Supply & Engineering Co., 811 W. Lackawanna Ave.
Wilkes-Barre: Wm. H. Pierce, Room 402, Bennett Bldg.
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Sioux Falls: Builders Supply Co., 115 A North Main St.

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Memphis: Akers & Company, 215 Falls Bldg.
Nashville: John E. Johnson, P. O. Box 743 (201 28th Ave. N.)

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Austin: J. I. Boggs, 1203 W. 9th St.
Dallas: R. M. Sedwick Company, 412 Construction Bldg.
El Paso: Warren D. Small, Mills Bldg.
Houston: Dewitt A. Sanders, P. O. Box 2687 (1810 Elmen St.)
Lubbock: Lubbock Steel Works, Inc., P. O. Box 1403
San Antonio: F. L. Sweet & Co., 265 W. Thorain Blvd.

UTAH
Salt Lake City: S. A. Roberts, 222 Dooly Bldg.

VIRGINIA
Norfolk: W. O. Sherman Company, 136 W. Wilson
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WISCONSIN
Green Bay: Duncan Equipment Co., 807 S. Quincy St.
Milwaukee: S. A. Smith, 1012 N. Third St.
Superior: F. E. Johnson, 1026 Tower Ave.

WYOMING
Casper: Harry E. Champion



Illustrating how suitable Sanymetal Office Partitions are for the creation of attractive office environments — Directors' Room of the Indiana-Michigan Electric Company, South Bend, Ind.

Sanymetal Office Partitions can be utilized for practically any arrangement desirable—as for example, at the Shell Petroleum Corporation, Cleveland, Ohio.



For Today's Buildings

WEISTEEL COMPARTMENTS



HENRY WEIS
MANUFACTURING COMPANY·INC·

Elkhart·Indiana

Established 1876

CATALOG No. 16

Outstanding Construction

WEISART FLUSH COMPARTMENTS



FOR CLASS "A" BUILDINGS • • •

Successful as have proven WEISTEEL and WEISALLOY panel and flush toilet compartments, there has been an insistent demand for a still better construction which, in both design and finish, would harmonize with the materials and finish of the surrounding walls and floors customarily used in toilet rooms in the highest Class A types of buildings.

With the new WEISART construction the manufacturers sought and are receiving the same acceptance and commendation which has attended each previous progressive step made to meet a specific demand.

• • NO HEADRAILS

Due to the new, rigid flush stile construction between the doors and at corners and walls, the customary posts and headrails are entirely eliminated. With the exclusive Weis gravity type cut-out top hinge (see page 5), stiles need not extend above door. Thus doors, stiles and partitions are in line at top.

• • RIGID CONSTRUCTION

The sanitary stile shoes in contact with the finish floor are of heavy cast nickel alloy—absolutely non-corrosive and extremely sturdy. Stile shoes are rigidly anchored to the sub-floor with concealed expansion bolts. The stiles are inserted into the stile shoes and securely bolted to them—a rigid supporting construction superior in strength to anything hitherto presented.

The flush partitions are firmly locked to the rigid stiles and are braced and supported by heavy fittings at the wall. Wall stiles are supported in similar manner at wall contacts.

• • SUPERIOR APPEARANCE

Finished in a durable natural or rubbed enamel of selected colors, these compartments with their simple rectangular lines and plain surfaces harmonize thoroughly with the highest class of floor and wainscot material.

Any selected solid color or combination of colors to match a particular color scheme is available when specified. Full hand rubbed finish furnished as an extra when specified.

• • SANITARY

Doors, stiles and partitions are of the highest class of flush steel construction, with edges locked and sealed, finished with the most durable baked-on synthetic gum enamel, natural or rubbed to a piano finish—a construction and finish wholly sanitary, easily cleaned and maintained.

Partitions and stiles are supported clear of the walls ¾ inch—thus there are no unsanitary corners at these vital points.

• • HARDWARE

Supporting hardware is of heavy brass, chromium plated over full polished nickel plating. Hinges, latches and miscellaneous trim are special Weis design similar to that described in detail on page 5, including the permanently trouble-free Weis universal, inclined ball-bearing gravity type bottom hinge and the exclusive Weis cut-out type top hinge permitting doors and stiles to line at top.

ARCHITECT'S SPECIFICATIONS

Note: WEISART Compartments not available for shower enclosures. (See file index for WEISWAY Cabinet Showers.)

General—Toilet compartments shall be WEISART as made by the Henry Weis Manufacturing Company, Inc., Elkhart, Indiana. Panels, stiles and doors shall be WEISART flush construction with fiber board cores. There shall be no posts or headrail.

Materials—Steel sheets and strips shall be cold rolled furniture stock, annealed and process leveled with smooth clean surfaces. Faces of stiles, partition panels and doors shall be 22 gauge, except for panels 54 inches and wider, when they shall be 20 gauge. Strips for edges of doors, stiles and panels shall be 20 gauge.

Cores shall be laminated, corrugated fiber board approximately 1 inch thick for doors and partition panels and 1¼ inches thick for stiles.

Shoe fittings at bottom of stiles shall be cast Government formula nickel alloy with satin finish. *(Chromium plated finish available as an extra.)* Manufacturer to supply ⅜ in. machine bolts with expansion shields extending 2 in. into sub-floor. Other fittings shall be cast brass, enameled to match partitions. *(Chromium plated as an extra.)* All fittings adjustable to variations in floors and walls.

Workmanship—Doors, panels and stiles shall be made up of two side members with U-formed edges cemented over the core and assembled by interlocking the edges with drive locking strips mitered and welded at corners. Locking strips shall be die drawn with rounded face and designed to lock the plates with tension grip. To assure uniform adhesion, after cementing the side members to core, units shall be subjected to 500 pounds per square foot pressure for twenty-four hours.

Stiles shall be adequately reinforced to receive dividing partition panels and door hardware. Partition panels shall be anchored to stiles by three hooks designed to draw the stile and panel together in a tension grip. Stile end of panel shall be provided with a casting designed to hold front stile in rigid alignment. Top of dividing panels shall be ½ inch below front stiles.

The wall end of panels and stiles shall be kept away from face of wainscot or wall finish ¾ in. Stirrup wall supports near top and bottom shall be through bolted to panel with two bolts in wall.

Finish—All material shall be thoroughly cleaned and given one coat of rust resisting primer baked at 350 degrees F. on all exposed and interior surfaces. **(Follow with method No. 1, No. 2, or No. 3 for final finish.)**

(1) Finish painting to be done after installation. See painting specification.

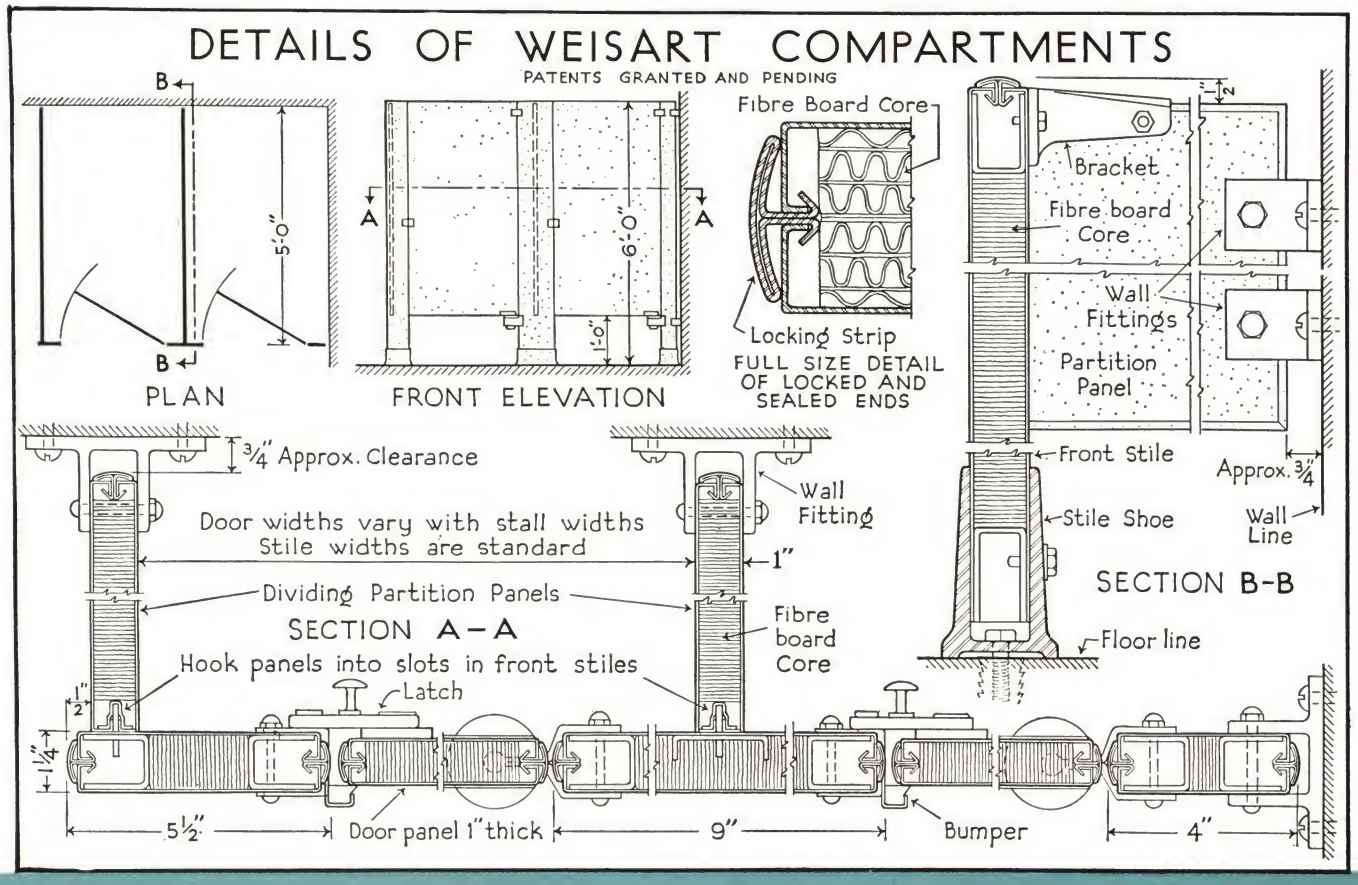
(2) All material to be finally finished at factory in natural, not rubbed *(specify color)* high-baked synthetic gum enamel. Each enamel coat shall be baked on separately.

(3) All material to be finally finished at factory in full rubbed enamel finish consisting of two coats *(specify any solid color)* high-baked synthetic gum enamel. First coat enamel shall be baked on, sanded smooth, and the final coat enamel shall be baked on and rubbed to a piano finish. *(Full rubbed finish here described is suggested only for truly monumental buildings justifying the extra cost.)*

Protective paper covers shall be applied over each unit at factory.

Hardware—Doors shall be mounted on hardware as specified below to line up with tops of stiles with no parts extending above the top line. Doors shall be hung on Weis inclined ball-bearing gravity type double acting hinges with concealed stainless steel ball-bearing rollers on hardened stainless steel cams, adjustable to permit doors to be made self-opening, self-closing or ajar at time of installation; and on an upper pivot guide pin set into top of door concealed by the top hinge case mounted in a recess in the edge of the door. Each door shall be fitted with combination keeper and bumper, heavy throw latch and combination coat hook with rubber-tipped bumper.

All hardware shall be of plain, heavy pattern brass applied with screws, through bolts and cap nuts, all finished in chromium plate over full polished nickel plate, except working parts of gravity hinge.



20
22

for MARBLE, GLASS and SIMILAR PARTITIONS

Flush WEISTEEL doors and hardware for toilet stalls of marble or glass provide the architect with a means of creating a new treatment of line, color and quality in such toilet room equipment in Class A and monumental buildings.

• • **Advantages**—No warping or swelling from moisture absorption . . . doors cannot easily be defaced . . . no absorption of odors and dirt . . . smooth flush surfaces assure utmost sanitation and easy cleaning . . . color treatment to harmonize with any decorative scheme . . . gravity hinge gives quiet operation with no slamming . . . gravity hinge mounting and light weight of door eliminates strain on marble or glass stiles.

• • **Construction**—The appearance appeal of these units is found in exclusive features of design and construction which also lend themselves to economical production. Doors are 1 inch thick, combining desired mass appearance with essential rigidity. Each is made up of two steel sheets spaced and insulated with a laminated corrugated fiber board filler cemented to their inner surfaces, which are given a coat of baked primer before assembly. At edges the two side sheets are bound and interlocked under tension by a rolled steel moulding. Thus the entire length of edges is reinforced by three thicknesses of metal. There are no exposed raw edges of metal and no open seams.



• • **Hardware**—Flush WEISTEEL doors are furnished complete with the Weis stall door hardware set shown opposite. As illustrated below, two types of top hinges may be used: (1) the regular top pivot requiring extension of marble stile at least 4 inches above door, or (2) the new Weis Cut-Out Top Hinge permitting mounting top of door on line with top of partition stiles.

• • **Efficiency**—The specification of Flush WEISTEEL doors and hardware assures undivided responsibility from manufacturer and saves the architect time and inconvenience as the one specification eliminates the necessity for selecting individual items and coordinating the respective trades.

4



FLUSH WEISTEEL DOOR ON MARBLE
WITH
PIVOT TYPE TOP HINGE

ARCHITECT'S SPECIFICATION

All toilet stall doors, of sizes shown on plans, with hardware shall be Flush WEISTEEL doors and hardware as manufactured by the Henry Weis Manufacturing Company, Inc., Elkhart, Indiana.

Doors shall be flush type, 1 inch thick, and made of 22-gauge select furniture steel sheets in strict accordance with manufacturer's standard construction specifications.

Hardware consisting of Weis Universal inclined ball-bearing gravity hinge assembly, throw latch, combination keeper and bumper and combination coat hook and bumper, shall be brass *(nickel) (chromium)* plated. *(Specify type No. 1 or No. 2 top hinge.)* (1) Top hinge shall be Weis cut-out type inset into edge of door for mounting top of door on line with top of partition stiles. (2) Top hinge shall be regular pivot type for mounting on partition stile above top of door.

All material shall be thoroughly cleaned and given a coat of metal primer baked on at 350 degrees F., followed by *(specify method No. 1 or No. 2)* (1) two coats *(sage green) (light grey) (specify other special color)* baked-on enamel. (2) two coats full-rubbed *(specify color)* high-baked synthetic gum enamel with final coat rubbed to a piano finish. Protective paper covering shall be applied over all rubbed finish units at factory. All stall doors and hardware shall be erected in strict accordance with manufacturer's instructions. All drilling of glass or marble for application of hardware shall be done by glass or marble contractor from a template furnished by door and hardware manufacturer.

NOTE: Flush WEISTEEL doors are also available in aluminum alloy, monel, bronze or stainless steel. Any finish suitable for any of these metals will be furnished.



FLUSH WEISTEEL DOOR ON GLASS
WITH
WEIS CUT-OUT TYPE TOP HINGE

STALL DOOR HARDWARE BY WEIS

for TOILETS, DRESSING ROOMS, SHOWERS and DOORS on MARBLE

The Weis stall door hardware set illustrated below embodies new principles of design and construction. It combines beauty of line and harmony of parts with practical strength.

• • **Weis Universal Gravity Hinge**—Outstanding among the features of this hardware set is the Weis universal gravity hinge. The ball-bearing roller is so mounted on the pintle that in operation geometrical continuity of contact is maintained between the roller and its race (see illustration); thus side thrusts and wear are eliminated. This new principle of construction definitely removes the cause of trouble which frequently develops in gravity hinges. Ball-bearing roller and race are case hardened steel. These with the pintle are cadmium plated. All interior working parts available in stainless steel at small extra cost. Hinges so equipped are permanently rustproof—especially suitable for operation under any water, steam or moisture condition.

• • **Weis Cut-Out Top Hinge**—An exclusive Weis development is the cut-out type top hinge illustrated below. The hinge case and pivot guide pin are mounted in a recess in the edge of the door, thus permitting mounting top of door on a line with top of partition stiles. This provides noiseless, easy, trouble-free operation and new freedom of design as extended stiles and headrails are eliminated; doors and partitions aligned at the top.

• • **For Doors of Other Make**—The attractive appearance and many desirable service features—quiet operation, absence of stile strain, freedom from trouble—of Weis hardware has created a large demand for it as a separate hardware set for wood doors or metal doors of other make. Standard sets are available to fit any thickness of marble or glass stiles up to 2½ inches. Door weight should not exceed 80 pounds.

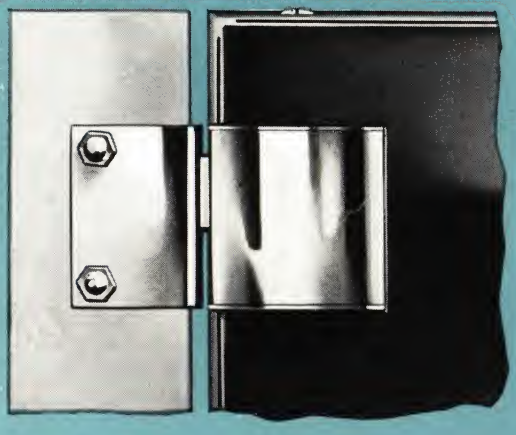
ARCHITECT'S SPECIFICATIONS

(For stall door hardware set for wood doors or metal doors of other make.)

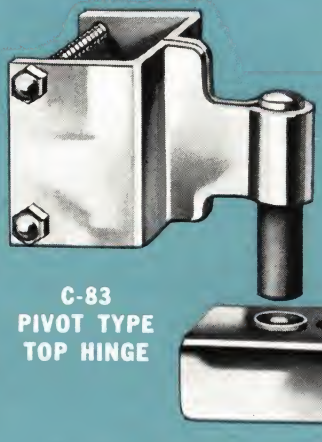
All stall door hardware for attaching doors to *(state material)* partitions *(state thickness)* in. thick shall be Weis stall door hardware manufactured by Henry Weis Manufacturing Company, Inc., Elkhart, Indiana.

Hardware set shall consist of universal gravity hinge assembly, throw latch, combination keeper and bumper, and combination coat hook and bumper. All exposed parts to be brass *(nickel) (chromium)* plated. All interior working parts to be *(steel cadmium plated) (stainless steel). (Follow with type No. 1 or No. 2 top hinge.)* (1) Top hinge shall be Weis Cut-Out type inset into edge of door for mounting top of door on line with top of partition stiles. (2) Top hinge shall be regular pivot type for mounting to partition stile above top of door.

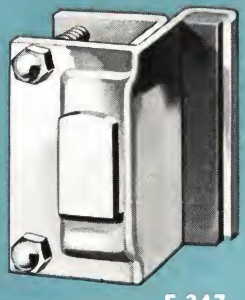
NOTE: Two prong coat hook and pull substituted for combination coat hook and bumper if doors swing out.



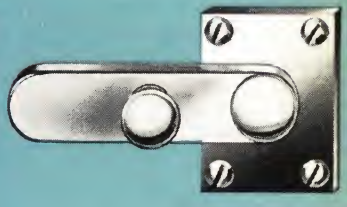
C-320 WEIS CUT-OUT TYPE TOP HINGE



C-83
PIVOT TYPE
TOP HINGE



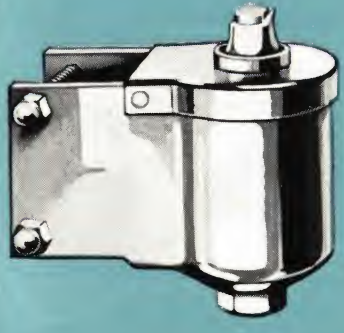
E-347
COMBINATION
KEEPER AND BUMPER



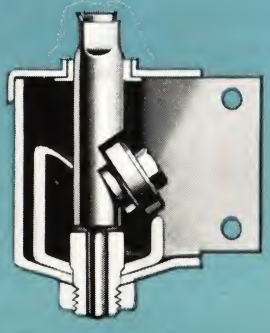
B-23
THROW LATCH



C-86 TOP HINGE FITTING
C-90 BOTTOM HINGE FITTING







C-84 WEIS UNIVERSAL
INCLINED BALL-BEARING GRAVITY TYPE BOTTOM HINGE



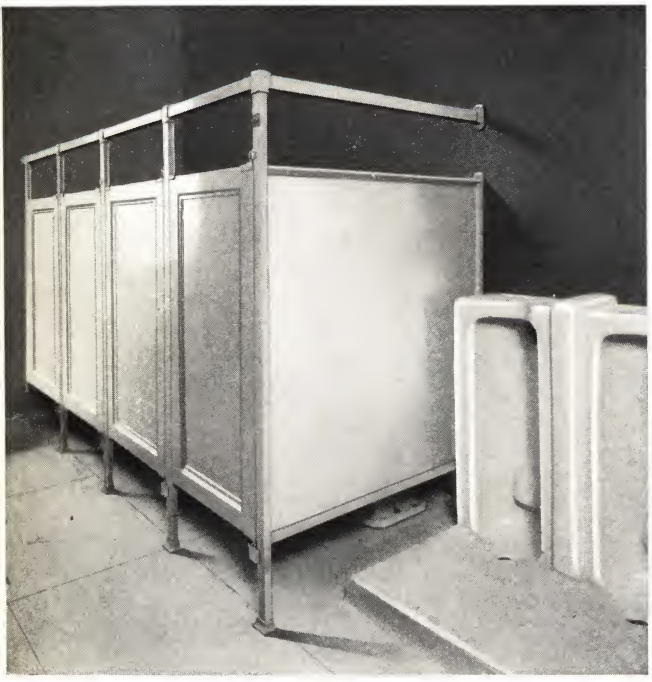
C-34
PULL



B-35 TWO-PRONG COAT HOOK



C-7 COMBINATION
COAT HOOK AND BUMPER



ARCHITECT'S SPECIFICATIONS

All Toilet Stalls, Shower and Dressing Room Compartments shall be *(Panel WEISTEEL) (Panel WEISALLOY)* as manufactured by the Henry Weis Manufacturing Company, Inc., Elkhart, Indiana.

Design, construction and finish of partitions, doors and hardware shall conform to manufacturer's standard panel type specifications.

Insert For PANEL WEISTEEL

Partitions, posts and headrails shall be 16 U.S. gauge and doors shall be 18 U.S. gauge full-pickled, cold-rolled furniture steel. Steel wall and top post fittings and brass foot castings shall be adjustable to variations in walls and floors.

Insert For PANEL WEISALLOY

Partitions shall be 14 B&S gauge, doors 16 B&S gauge and headrails 12 B&S gauge aluminum alloy. Aluminum alloy wall and top post fittings and government formula nickel alloy foot castings shall be adjustable to variations in walls and floors.

Hardware consisting of universal gravity hinge, heavy slide bar latch, pull and coat hook shall be brass *(nickel) (chromium)* plated.

All material shall be thoroughly cleaned and given a coat of grey metal primer baked on at 350 degrees F. *(Follow with method No. 1 or No. 2, for final finish.)* (1) Finish painting to be done after installation. See painting specifications. (2) All material to be finished at factory with *(sage green) (light grey) (specify other special color)* enamel baked on at 285 degrees F.

● ● ●

● ● **Erection**—The erection is simple and fool-proof. Three bolts only are required to erect a partition—one in the floor and two in the wall fittings. All units are made accurately to dimensions. No fitting, cutting or drilling is necessary at the job. Detailed erection drawings and instructions are furnished.

For more than twenty-five years these compartments have met all the requirements of discriminating architects and builders. In appearance, quality of material and workmanship, they harmonize with any adjacent materials. They have established a new standard of utility value where sanitation, durability and economy are primary considerations. Besides their adaptablity for toilet stalls and dressing rooms, they are recommended for shower enclosures in batteries.

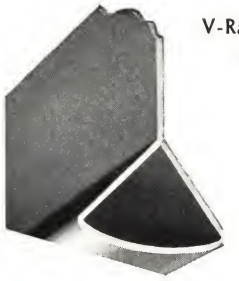
Panel WEISTEEL—Full pickled, cold rolled furniture steel.

Panel WEISALLOY (Recommended for shower enclosures)—All parts and fittings are aluminum alloy, which is rustproof and impervious to moisture and odors.

CONSTRUCTION FEATURES

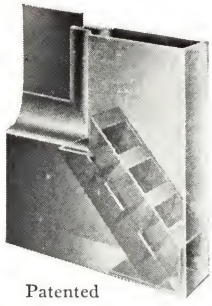
● ● **Sanitary**—All joints are closed and sealed. Design of mouldings, floor fittings and hardware, and the absence of projecting screws or bolt heads prevent the accumulation of dust and dirt. Metal is non-absorbent and is not easily defaced.

● ● **Substantially Constructed**—Each partition with its integral front and rear post is a single substantial unit. Panels and posts are interlocked and welded. Partition top and bottom V-rails are formed as an integral part of the partition panels. Each V-rail has joint on one side only which is locked and sealed at intersection with panel, affording maximum rigidity, sanitation and pleasing appearance.



V-Rails Partition Top and Bottom

Phantom View of Door Construction



Patented

● ● **Doors**—Panel doors are made by an exclusive process whereby the four corner joints of the mitered stiles and rails are electrically welded with interior reinforcements that become an integral part of each corner. The fused joints are finished flush and smooth. This joint construction and the moisture-proof method for assembly of the panel with the stiles and rails results in a door that is rigid, pleasing in appearance and practically proof against damage under the most severe abuse.

● ● **High Quality**—There are no exposed or raw edges of metal or open seams. All fittings are small and fit the partitions and doors snugly. With average care, these compartments should last as long as the building.

● ● **Hardware**—Doors are equipped with the Weis Stall Door Hardware illustrated on page 5, including the permanently trouble-free Weis universal, inclined ball-bearing gravity hinge.

● ● **Finish**—Compartments are finished with the most durable primers and baking enamels in accordance with the latest advanced and tested practices developed in the art of metal finishing. Resulting finishes in appearance and long life have been for many years one of their outstanding characteristic values.

WEISTEEL FLUSH COMPARTMENTS WEISALLOY

The service record, good appearance and economies of Standard Panel WEISTEEL and WEISALLOY compartments, described and illustrated on page 6 created a demand for a still more finished flush type compartment partition and door which would harmonize with the characteristics found in types of buildings where more expensive materials are generally used. This resulted in the development of Flush WEISTEEL and WEISALLOY compartments which for the past several years have received the commendation of and acceptance by discriminating architects and builders throughout the United States.

Flush WEISTEEL—Full pickled, cold-rolled furniture steel.

Flush WEISALLOY—All parts and fittings are aluminum alloy which is rustproof and impervious to moisture and odors.

CONSTRUCTION FEATURES

• • **1.** Flush WEISTEEL is a combination of pleasing rectangular design.

• • **2.** Partitions and doors are 1 inch thick—combining desired mass appearance with essential rigidity.

• • **3.** Each partition and door made up of two sheets spaced and insulated with laminated corrugated fiber board filler cemented to their inner surfaces.



Patented

• • **4.** Inner surfaces of side members coated with a high-baked primer before assembly.

• • **5.** Edges of partitions and door are bound and interlocked under tension with drawn moulding which is welded at corners.

• • **6.** Each edge of partition and door is reinforced by three thicknesses of metal—see illustration.

• • **7.** No exposed raw edges of metal or open seams.

• • **8.** The above method of assembly provides permanent, uniform rigidity and strength along the entire length of sides of all partitions and doors.

• • **9.** Supporting posts interlocked and welded to panels forming an integral rigid partition unit.

IMPORTANT

Flush construction is not recommended for shower stall enclosures for the following reasons:

• • **1.** Observation and test indicate that no suitable flush panel construction can be uniformly and permanently sealed against shower water.

• • **2.** Adaptable filler material, while moisture resistant, is not waterproof.

• • **3.** Water temperature changes are conducive to condensation inside the flush panels.

Only single sheet panel construction—Panel WEISTEEL or Panel WEISALLOY—is recommended for shower enclosures.



ARCHITECT'S SPECIFICATIONS

All Toilet Stalls and Dressing Room Compartments shall be *(Flush WEISTEEL) (Flush WEISALLOY)* as manufactured by the Henry Weis Manufacturing Company, Inc., Elkhart, Indiana.

Design, construction and finish of partitions, doors and hardware shall conform to manufacturer's standard flush type specifications.

Insert For FLUSH WEISTEEL

Partitions and doors shall be fabricated from 22 U.S. gauge full-pickled, cold-rolled furniture steel. Partitions 54 inches and wider shall use 20 U.S. gauge furniture steel. Posts and headrail shall be 16 U.S. gauge rectangular tubing not less than 6¼ inches in girth. (Backs, vent tops, end plates and utility doors where shown shall be 16 U.S. gauge steel single sheet panel construction.) Steel wall and top post fittings and government formula nickel alloy foot-castings shall be adjustable to variations in walls and floors.

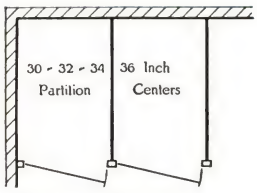
Insert For FLUSH WEISALLOY

Partitions and doors shall be fabricated from 18 B&S gauge aluminum alloy. Posts and headrail shall be 12 B&S gauge aluminum alloy rectangular tubing not less than 6¼ inches in girth. (Backs, vent tops, end plates and utility doors where shown shall be 14 B&S gauge aluminum alloy single sheet panel construction.) Aluminum alloy wall and top post fittings and government formula nickel alloy foot castings shall be adjustable to variations in walls and floors.

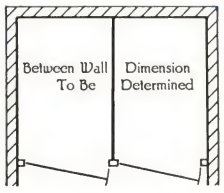
Hardware consisting of universal gravity hinge, heavy slide bar latch, pull and coat hook shall be brass *(nickel) (chromium)* plated.

All material shall be thoroughly cleaned and given a coat of grey metal primer baked on at 350 degrees F. *(Follow with method No. 1 or No. 2 for final finish.)*
(1) Finish painting to be done after installation. See painting specifications.
(2) All material to be finished at factory with *(sage green) (light grey) (specify other special color)* enamel baked on at 285 degrees F.

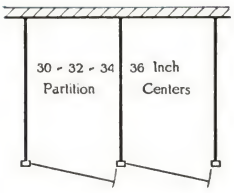
20
22



Series 1 - Illustrated
Series 2 - Opposite

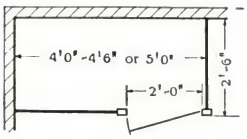


Series 3 - Between Walls

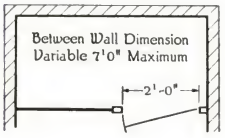


Series 4 - No Walls At Sides

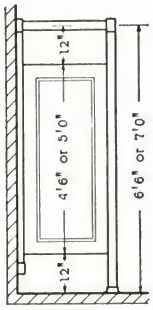
Series 5 - Illustrated
Series 6 - Opposite



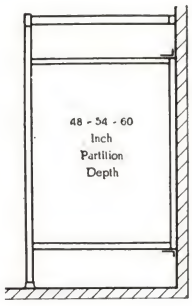
Series 7 - Illustrated
Series 8 - Opposite



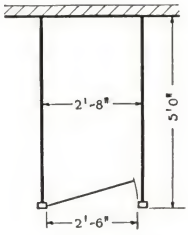
Series 1-2-3 and 4 Furnished in Batteries of Any Number Stalls Required.
Door Sizes Approximately 2" Less Than Partition Centers.



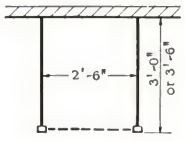
Typical Front Elevation



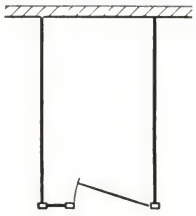
Typical Side Elevation



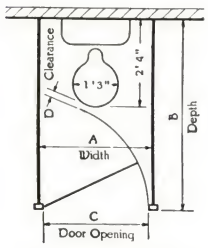
Recommended Standard Size Metal Toilet Stall With Inswinging Door. If Door Swings Out Depth of Stall May be Reduced to 54" or 48". An Economical Size Stall Sufficiently Large for all Types of Buildings.



Recommended Size for Stalls Without Doors. Doors are Not Recommended for Stalls Under 48" Deep.

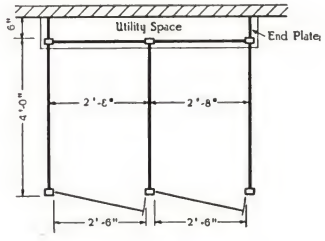


Front Partition Required With Door When Depth of Stall Will Not Permit Inswinging Full Width Door, See Door Clearance Schedule at Right. Front Partition and Door Assembly as Shown is Recommended to Provide Maximum Room for Occupant Entering

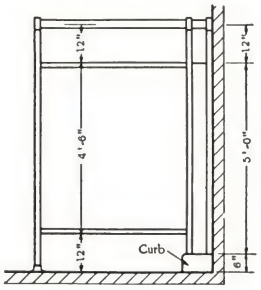


A	B	C	D
30"	54"	28"	1⅛"
32"	54"	30"	*
32"	60"	30"	5⅛"
36"	60"	34"	1¼"

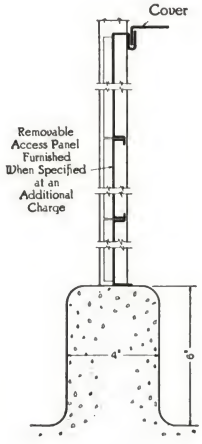
*Short of Clearance



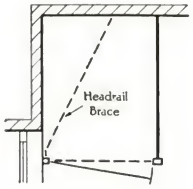
Standard Stall Units Combined With Backs and End Plates to Enclose Utility Space



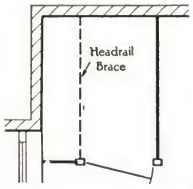
Side Elevation



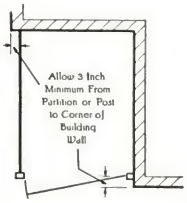
Section Thru Curb Under Backs



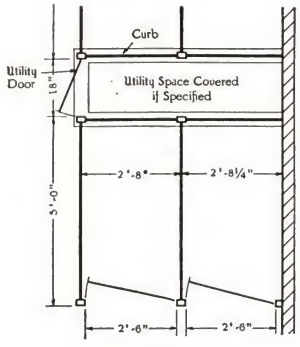
Wall Post Bracing At Window



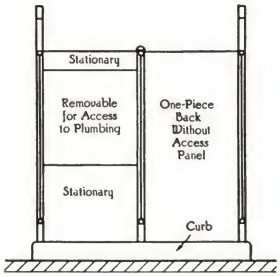
Partition Bracing At Window



Space Required for Corner Attachment

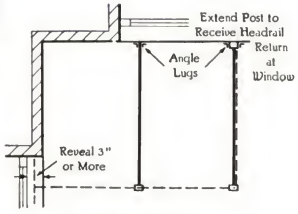


Detail of Utility Space With Stalls on Each Side



Elevation of Backs

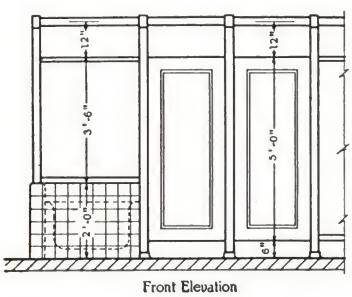
For Sanitation and Economical Maintenance Curb Recommended Under All Backs



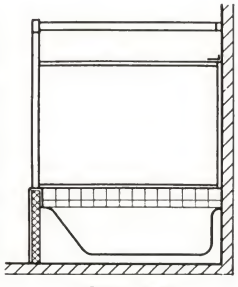
Headrail Across Window If Not Over 5' Wide—If More Than This Width Architect to Detail Bracing

Steel partitions and doors are frequently specified as enclosures for tub bathrooms, or compartments, especially where more than one private bath is desired in a group bathroom. Steel enclosures for free-standing tubs present no special problems. The built-in-type of tub, however, does require special treatment to assure uniformly satisfactory results. The wall side and end, or ends, of a built-in tub are designed to permit an integral combination with adjoining walls. Hence, square and accurately ground tub edges are unnecessary. Full height steel partitions are, therefore, not readily adaptable to the built-in-type of tub.

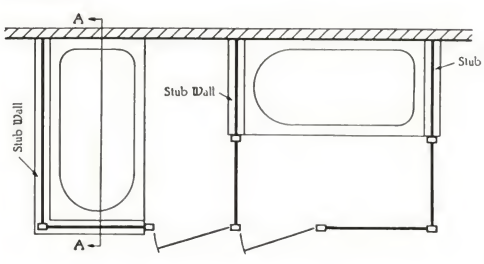
A combination of tile or other kinds of walls and steel partitions, as detailed, assures not only good construction but also one that is economical in first cost and upkeep, as well as pleasing in appearance.



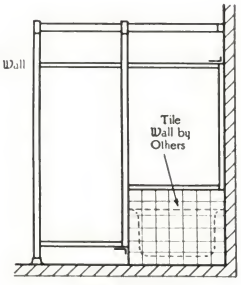
Front Elevation



Section -A-A-

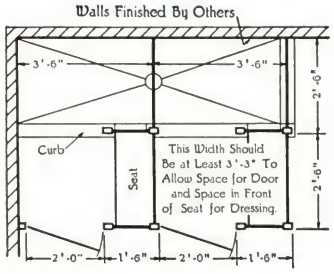


Tub Compartment Layout

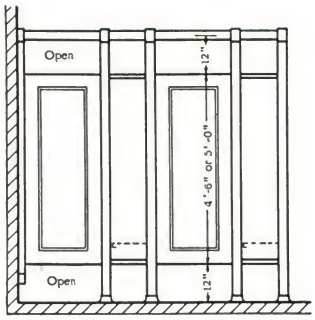


Side Elevation

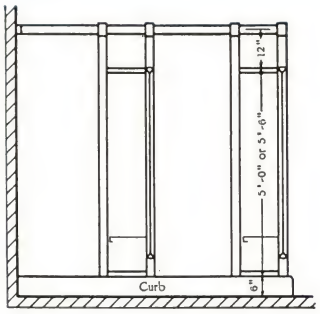
WEISTEEL



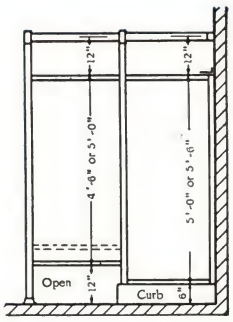
Individual Shower and Dressing Room



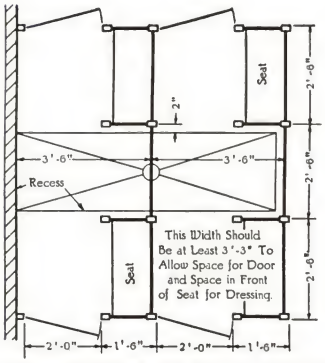
Front Elevation



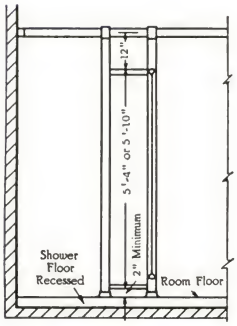
Section Thru Dressing Room



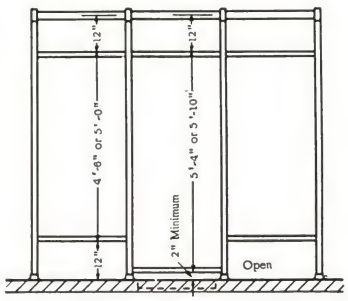
Side Elevation



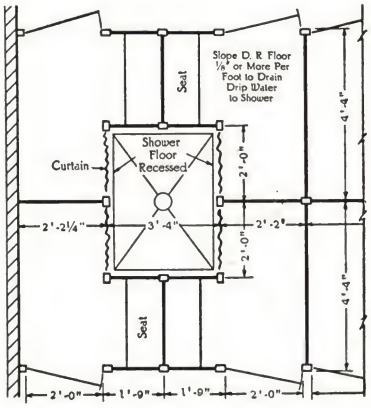
Shower With Dressing Room on Each Side



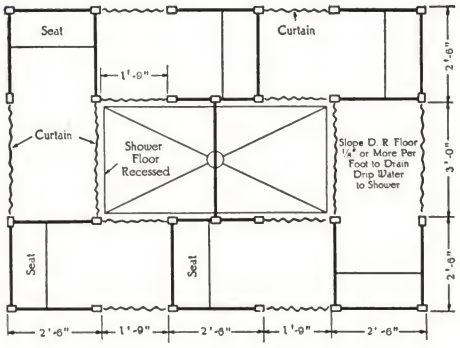
Section Thru Shower



Side Elevation



Layout of Single Shower With Four Dressing Rooms



Combination Layout of Two Adjoining Showers and Six Dressing Rooms

Suggested shower and dressing room layouts detailed are to be used with tile, terrazzo or concrete recessed receptors or built up curbs.

When making layouts, determine first if one, two, three or four dressing rooms for each shower is desired. For high school girls three dressing rooms are generally suitable. One drain for one to four showers is usually sufficient.

The use of metal sides and backs against masonry walls is not recommended.

Allow sufficient space for stool or seat in dressing room. Allow minimum of 28" in front of seat for door swing and space for dressing.

Either doors or curtains may be used for entrance to dressing rooms.

A more sanitary installation is assured by not extending shower partitions to the floor. Doors must be at least 6" above floor to enable use of Weisteel gravity hinge. If doors are less than 6" above floor, special hinges of either spring type or half surface butts must be used.

If unit temperature control is not used, locate valves so temperature of shower can be regulated before entering and shower spray directed toward rear. Place shower head for girls and women not over 5'0" to 5'6" above floor. For men's gang showers, head may be placed 7'-0" above floor.

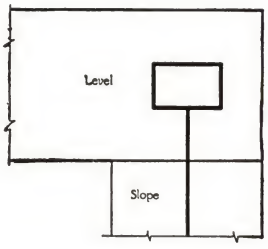
Recessed floor construction for showers is recommended as most satisfactory. Floor of dressing room should be sloped so that drip water from bather will drain from dressing room into shower.

Depth of recess should be 2" or more and partitions should be set on the dressing room level at least 2" away from edge of recess.

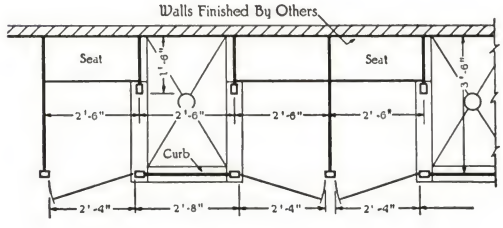
Built-up curbs should be at least 4" wide and 4" to 6" high. Curbs under partitions should slope at an angle as shown in section. Under posts and at entrances to shower, curbs should be level on top. Under dividing shower panels each side of curb should be built at an angle as shown in section.

The Weisteel roller bearing curtain hanger is specially designed for use with standard Weisteel headrail and eliminates necessity of a special curtain rod. Shower curtains and hangers when specified are furnished as a part of standard Weisteel equipment at an extra charge.

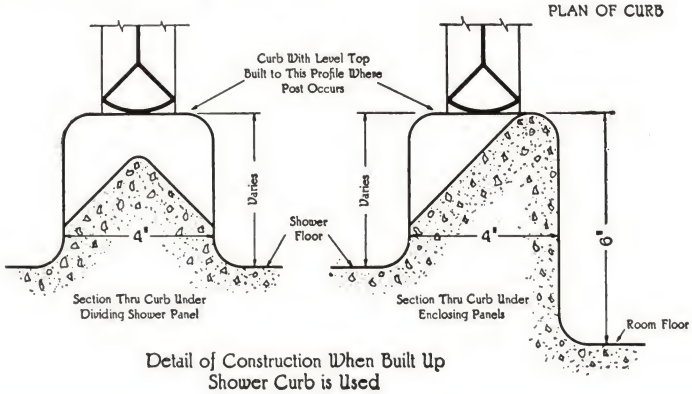




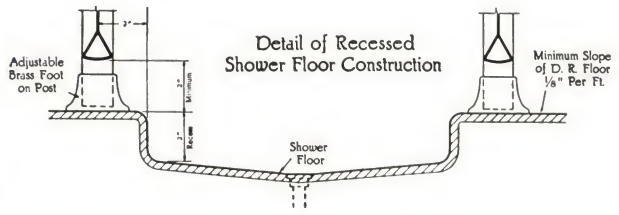
PLAN OF CURB



Shower With Two Dressing Rooms



Detail of Construction When Built Up Shower Curb is Used



PANEL and FLUSH WEISTEEL HOSPITAL CUBICLES







PURPOSE OF CUBICLE SYSTEM

Every hospital patient wants privacy, whether he can afford a private room or not. WEISTEEL Cubicles are satisfactorily solving this problem in many well-known hospitals throughout the country. They provide many of the advantages of private rooms—from the patients' viewpoint—yet they retain the economies and advantages of open wards which permit the hospital to make lower rates.

ADVANTAGES OF CUBICLE SYSTEM

Control of cross infection . . . Permit greater classification . . . Segregation according to condition and ailment . . . Cross ventilation without draft . . . Reduction of nurses' travel as compared with private room nursing service . . . Greater privacy as compared with open wards . . . Promotion of quietness . . . Wider latitude in visiting regulations . . . Patients' satisfaction and goodwill increases income for hospital.

ADAPTABILITY OF CUBICLE SYSTEM

WEISTEEL Cubicles are adaptable for use in maternity wards, children's wards, general wards, surgical and examination wards, and as waiting booths in hospital waiting rooms for out-patient departments and children's clinics.

CONSTRUCTION

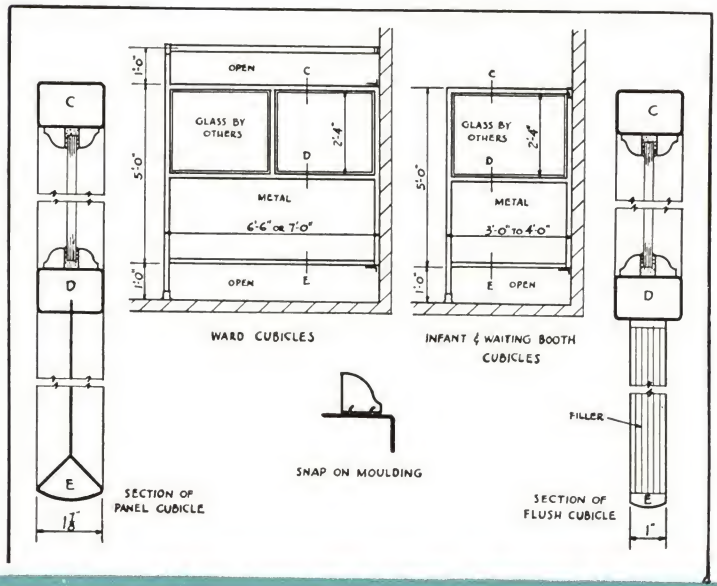
WEISTEEL Cubicles are fabricated from the best cold-rolled furniture steel sheets and are made in two types of construction—PANEL type and FLUSH type. These are the same high quality constructions described on the preceding pages for WEISTEEL toilet compartments.

INSTALLATION

The simplicity of erection insures a satisfactory installation with a minimum amount of interruption to surrounding hospital activity.

PLANNING SERVICE

A corps of experienced engineers is available for the convenience of hospital architects and executives in planning cubicle installations.



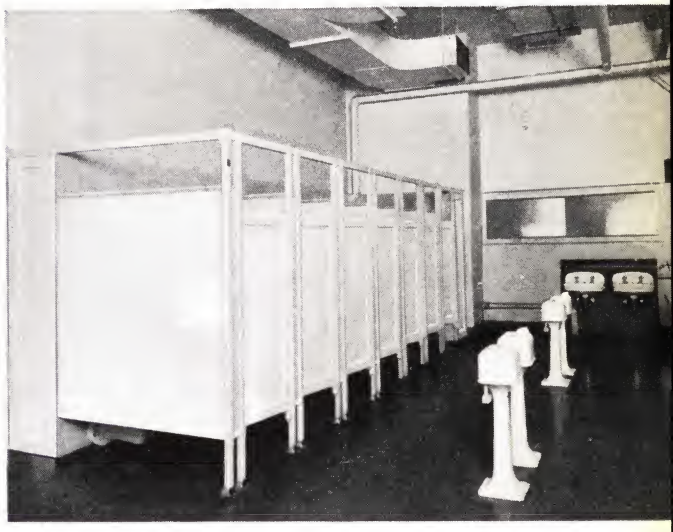
THE COMPANY

The Henry Weis Manufacturing Company, Inc., was founded in 1876 and has been in business continuously since that time. This company originated metal toilet, shower and dressing room compartments. It has continuously contributed to the industry outstanding improvements in design and construction. Its products have always been known for quality of materials and workmanship. Growth of the company, its financial rating and its reputation and standing with the architectural profession and building trade are proof of its responsibility and dependability.



MANUFACTURING FACILITIES

More than 60,000 square feet of expertly planned floor space in a new and modern factory are required for the production of Weis products. Special manufacturing equipment and production methods have been developed and are constantly improved to provide volume of quality production at economical cost. Supervision of manufacturing is in charge of men of ability and with broad experience.



SALES AND SERVICE ORGANIZATION

Weis products are sold and serviced in more than 100 principal cities in the United States. (See list on back cover.) The organization of each representative is experienced and favorably known in its building trade territory.

ENGINEERING SERVICE

Architects, engineers, builders and owners are invited to avail themselves of the company's facilities for detailed information on specific requirements. Weis engineers will offer suggestions for practical adaptation of Weis products without obligation.

Due to variations in types of rooms and partition layouts, it is advisable to submit, with request for recommendations, rough sketches showing location of building walls and contemplated requirements.



WEISTEEL COMPARTMENTS

SALES REPRESENTATIVES

For Addresses See Local Telephone Directories

ALABAMA	
BIRMINGHAM	Birmingham Ornamental Iron Company, Inc.
MOBILE	Reliance Equipment Company
ARIZONA	
PHOENIX	Walter Dubree
ARKANSAS	
LITTLE ROCK	Clippard Builders Supply Co.
CALIFORNIA	
LOS ANGELES	J. E. Dwan
SAN DIEGO	Charles H. Lentz
SAN FRANCISCO	Dwan & Co.
COLORADO	
DENVER	R. T. MacCracken Company
CONNECTICUT	
NEW HAVEN	A. R. Kirschner
WEST HARTFORD	Laurence R. Smith & Co.
DELAWARE	
WILMINGTON	J. Francis Blaine, Inc.
DISTRICT OF COLUMBIA	
WASHINGTON	Harry Schnabel
FLORIDA	
JACKSONVILLE	Florida Brick & Tile Co.
MIAMI BEACH	B. F. Harris Company
TAMPA	Stovall & Archer
GEORGIA	
ATLANTA	Industrial Equipment Co.
AUGUSTA	W. E. Raines
ILLINOIS	
AURORA	T. L. Miller
CHICAGO	John H. Brodt
DECATUR	C. J. Gandy
PEORIA	Samuel J. Smith & Co.
ROCKFORD	Central Iron Works
INDIANA	
EVANSVILLE	J. C. Vaught
FORT WAYNE	Carl A. Ramsey
GARY	Builders Service & Equipment Co.
INDIANAPOLIS	Hoover Bros. Company
IOWA	
BURLINGTON	C. D. Barngrover
DAVENPORT	Austin Crabbs, Inc.
DES MOINES	Hawkeye Engineering Co.
SIOUX CITY	Ellis Tile & Specialty Co.
KANSAS	
WICHITA	C. L. Anderson Co.
KENTUCKY	
LEXINGTON	Clay-Ingels Company
LOUISVILLE	Kentucky Iron Work Co.
PADUCAH	Paducah Iron Company
LOUISIANA	
NEW ORLEANS	A. B. Sandoz
SHREVEPORT	Simmons Bldg. Material Co.
MAINE	
PORTLAND	W. O. Hutchins
MARYLAND	
BALTIMORE	C. A. Weiller
CUMBERLAND	Builders Paint & Supply Co.
MASSACHUSETTS	
BOSTON	Construction Supply Co.
SPRINGFIELD	A. D. Donald & Company
MICHIGAN	
DETROIT	Acme Wire & Iron Works
GRAND RAPIDS	S. A. Morman & Co.
LANSING	James E. Payne
MINNESOTA	
DULUTH	Dunlop-Moore Company
ST. PAUL	Builders Engineering Co.
MISSISSIPPI	
JACKSON	Fred Thrasher
MISSOURI	
KANSAS CITY	C. S. Hawley Co.
ST. JOSEPH	Mannan-Smith Supply Co.
ST. LOUIS	Len A. Maune Co.
MONTANA	
HELENA	Raymond C. Grant
NEBRASKA	
HASTINGS	R. W. Kerr
OMAHA	Consolidated Builders Supply Co.
NEW YORK	
ALBANY	Harding Bldg. Specialties Co.
BINGHAMTON	Babcock, Hinds & Underwood
BUFFALO	Shults Engineering Co.
ELMIRA	Elmira Bldg. Units, Inc.
NEW YORK CITY	Philadelphia Fire Retd. Co., Inc.
ROCHESTER	Geo. A. McNerney
SCHENECTADY	Fireproof Materials, Inc.
SYRACUSE	B. R. Johnson
UTICA	American Hard Wall Plaster Co.
NORTH CAROLINA	
ASHEVILLE	General Bldg. Products Co.
CHARLOTTE	Edwin C. Boyette, Jr.
GREENSBORO	J. D. Wilkins
NORTH DAKOTA	
FARGO	Clay Products & Materiai Co., Inc.
OHIO	
CINCINNATI	Cincinnati Builders Supply Co.
CLEVELAND	Graham, Inc.
COLUMBUS	H. H. Leukart
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DAYTON	A. C. Harris
TOLEDO	Hausman Steel Co.
OKLAHOMA	
OKLAHOMA CITY	H. C. Geatches
TULSA	Murray R. Womble & Co.
OREGON	
PORTLAND	Cress & Company
PENNSYLVANIA	
ALLENTOWN	Halteman Company
ERIE	Geo. H. Kraft & Son
HARRISBURG	Metal Building Products Co.
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PITTSBURGH	James R. Pitcairn
SCRANTON	Harvey Allen
WILKES-BARRE	Harry W. Poust
WILLIAMSPORT	Cement Products Company
WYOMISSING	Daniel F. Yost
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SOUTH DAKOTA	
MITCHELL	Acme Materials Co., Inc.
SIOUX FALLS	Acme Materials Co., Inc.
TENNESSEE	
CHATTANOOGA	Currin-Andrews Co.
KNOXVILLE	Chas. M. Allen Corp.
MEMPHIS	Tri-State Iron Works
NASHVILLE	John Williams Company
TEXAS	
AMARILLO	Jenkins Mantel & Brick Co.
DALLAS	Maisey & Paige
EL PASO	C. C. Gaines
FORT WORTH	Chas. F. Williams Co., Inc.
HOUSTON	Maisey & Paige
LUBBOCK	J. T. Magee
MIDLAND	C. R. Sewell
SAN ANTONIO	John A. Williamson Co.
UTAH	
SALT LAKE CITY	Williams & Richardson
VIRGINIA	
NORFOLK	Hall-Hodges Company
RICHMOND	Sash, Door & Glass Corp.
ROANOKE	Cinder Block, Inc.
WASHINGTON	
SEATTLE	Tourtellotte-Bradley, Inc.
SPOKANE	Fryer-Ford Company
WEST VIRGINA	
CHARLESTON	Standard Brick & Supply Co.
WISCONSIN	
GREEN BAY	H. J. Martin
MADISON	Theo. Kupfer Fdry. & Iron Wks., Inc.
MARINETTE	Ben B. Holmes Co.
MILWAUKEE	Jackson & Fahey Company

HENRY WEIS
MANUFACTURING COMPANY·INC·
Elkhart·Indiana

JOHN T. FAIRHURST

Inventor of the "Unitfold" Folding Walls

EASTERN MANUFACTURER AND DISTRIBUTOR
A. R. NELSON CO., INC.
101 Park Avenue, NEW YORK, N. Y.
AGENTS IN PRINCIPAL EASTERN CITIES

WESTERN MANUFACTURER AND DISTRIBUTOR
PRICE BUILDING SPECIALTIES CO.
35 Gilbert Street, SAN FRANCISCO, CALIF.
AGENTS IN PRINCIPAL WESTERN CITIES

For our page on School Wardrobes, see File Index

FAIRHURST (PATENTED) "UNITFOLD" AND "DUOFOLD" FOLDING WALLS

For Classrooms, Gymnasiums, Churches, Clubs, Hotels, Y.M.C.A. and Other Public Buildings or Private Residences Where Division of Space Is Required

This highly perfected partition has been so improved and so simplified, that the manufacturers believe it leaves nothing to be desired. It is the only partition of its kind ever marketed.

Sound-proofed when specified.

Design

The partition is not suspended. All weight is carried on the floor.

They are built up in *separate units,* making it possible to have an odd or an even number in any given partition. These units may slide from either end, or from the center to both ends, if the opening is unusually wide. In schools, partitions may be furnished with smooth, unbroken slate blackboard surfaces, having no V-joints or other breaks between units.

Units may be obtained in any design, to harmonize with, or follow any plan of interior decoration. A mortise lock in the end unit locks partition in place.

A shuttle or wicket door can be provided in any unit for communicating purposes. Specifications on request.

"Unitfold" partitions are so easy to operate, regardless of size, that cables, motors and crank handles are unnecessary as the units are not hinged. The interlocking joints press closely together when the units are closed in position and locked. One lock located in the end door controls the entire partition, and odd or even numbers of doors can be used.

The Following Points in Its Favor Are Exclusive

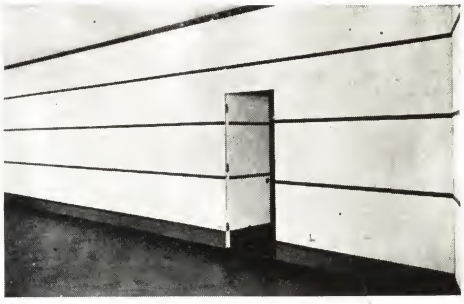
(1) Automatically adjusts itself.
(2) Units cannot be displaced.
(3) No hinges or bolts used or necessary.
(4) Forms a rigid wall in perfect alignment.
(5) Can be locked in place with one ordinary key.
(6) Can be operated with one hand, no matter what size.
(7) Widths of units may vary.
(8) No visible hardware except escutcheon and pull.

Difference Between Unitfold and Duofold

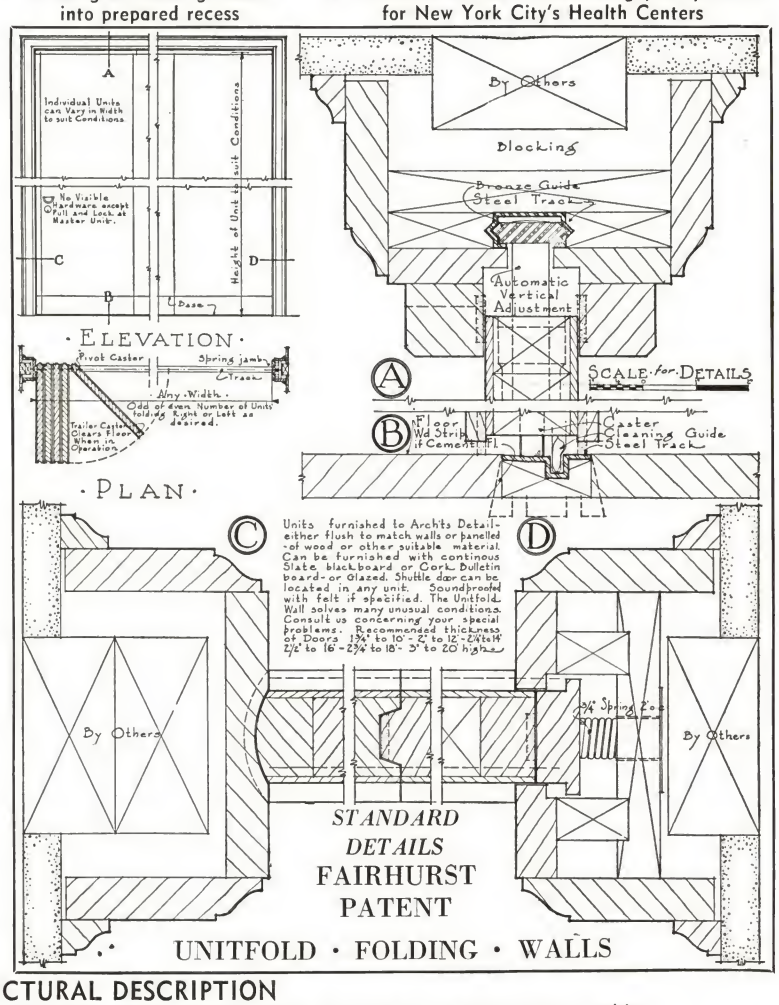
As the name implies, the Unitfold is in one piece, the Duofold is a two-piece unit hinged together and requires bolts. It is the older type. The unitfold is the more desirable and is recommended.



Showing units being folded into prepared recess



A "Unitfold" Wall of modern design, as specified for New York City's Health Centers



STRUCTURAL DESCRIPTION

The casters, upon which the doors move, consist of a steel ball race mounted on a drop-forged stem, the whole being carried in a cast-steel block. An arrangement such as this eliminates most of the noise and friction of operation.

Unique design is evident, in that this partition has no visible hardware, and no bolts or hinges whatever, in its construction—obviously an important improvement. When weather conditions, or the settling of a building cause misalignment in floors, etc., no attention is necessary, since all adjustments are automatic. Spring action prevents track jumping by casters, although the track is narrower than that of any other folding partition.

The overhead action has been simplified as far as possible, yet remains constant to the ideal of efficiency and strength. It is a bronze slide running in a metal groove, thus eliminating wheels of any sort.

The doors cannot be folded except when in the proper position, for a locking device at top and bottom instantly prevents moving, except when the doors are correctly placed. Because of the small number of moving parts, it is practically impossible to get out of order.

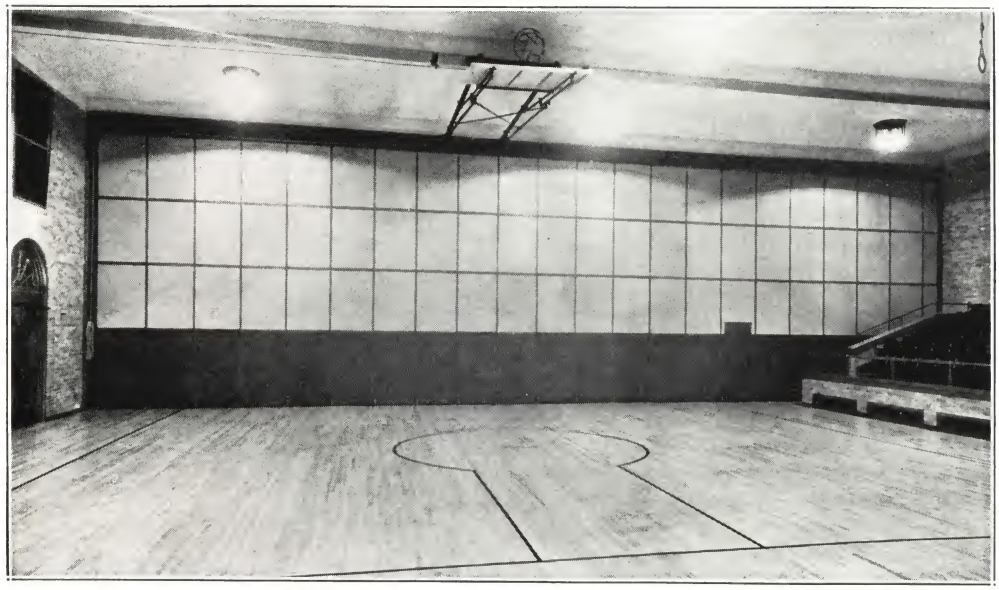
HORN FOLDING PARTITION CO.

Manufacturers of Folding Partitions, Folding Bleachers, Sound Proof Doors and Vertislide Partitions

GENERAL OFFICES
FORT DODGE, IOWA
NINTY-SIX SALES AND SERVICE OFFICES FROM COAST TO COAST
For Horn Bleachers, see File Index

HORN TOP-HUNG FOLDING PARTITIONS

Horn Folding Partitions are now furnished in either the top-hung, mechanically operated type, or the floor-track type, which is manually operated. Whenever possible the top-hung type is recommended because it is more easily operated and will give trouble-free service over a longer period of time. Details on the following pages feature top-hung partitions. Write for special floor-track details when requirements call for this type.



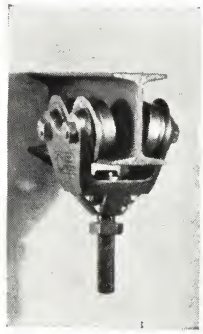
Horn Standard Electric Partition With Linoleum Wainscot

CABLE DRIVE

All methods of operation, except manual, use the exclusive Horn cable drive. This feature makes possible a smoother, easier operating partition which does not jerk or bind. The operation is positively quiet and gives trouble-free service over a period of many years. All cable is pre-stretched and does not require adjustment after the installation has been completed.

I-BEAM TRACK AND HANGER

Top-hung partitions are equipped with specially designed four-wheel roller-bearing I-Beam hangers. There are two sizes, for both large and small partitions. These hangers have been designed for exclusive use on Horn partitions and have a rated capacity of 6000 lbs. each. I-Beam track is noted for its great strength and uniformity.



GUARANTEE

All Horn equipment is guaranteed against faulty workmanship and operation for a period of five years. Only the highest quality of material and workmanship could be so liberally guaranteed.

DE LUXE AUTOMATIC ELECTRIC

The DeLuxe principle of operation is especially adapted to the larger partitions for auditoriums and gymnasiums. This method of operation is automatic in every respect. By turning the key-control switch, the partition smoothly, quietly and easily opens or closes. When the partition has reached the closed position, the space between the bottom of the partition and the floor is automatically sealed by the Horn telescoping floor seal, an original Horn development. The floor seal is in contact with the floor only when the partition has reached the final closed position. A heavy cushion of moulded sponge rubber is tightly pressed against the floor, not only sealing the space against sound transmission, but also locking the partition in place. Flush bolts or floor tracks are not required. The partition sections are all equal, full size, eliminating the necessity of the half door. No experience or skill is required to operate these partitions efficiently. Automatic recess doors can be furnished as optional equipment.



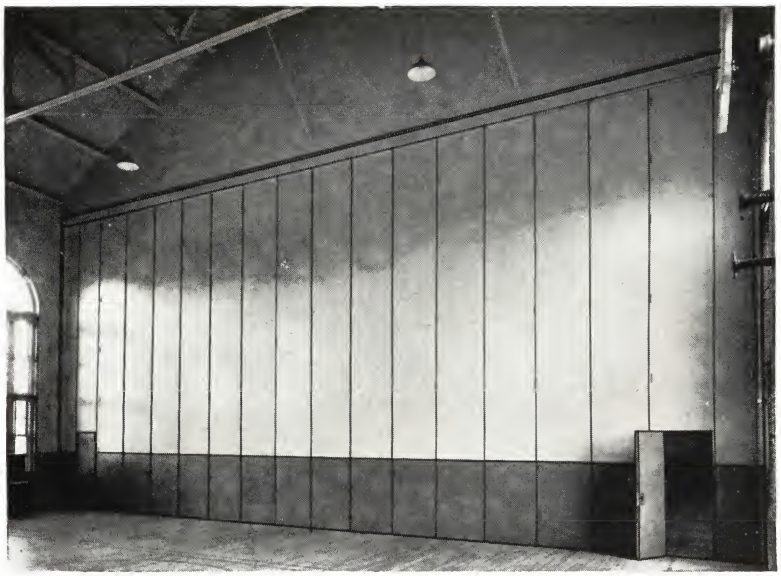
See Details following page

STANDARD ELECTRIC

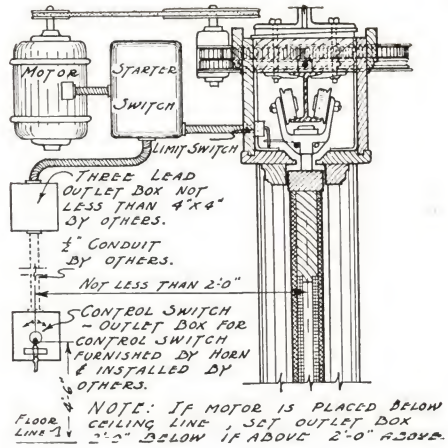
The Standard Electric principle of operation is similar to the DeLuxe, but it is not fully automatic. The floor seals are the self-balancing type and are used together with flush bolts. The cost is slightly less than the DeLuxe type and the success of this arrangement is evidenced by the hundreds of installations from coast to coast.

Electric operators are recommended for large partitions only.

Note: There is no size limit to Horn partitions. The highest ever designed was 60 feet and the longest was 203 feet. Horn Engineers can solve your large partition problems.

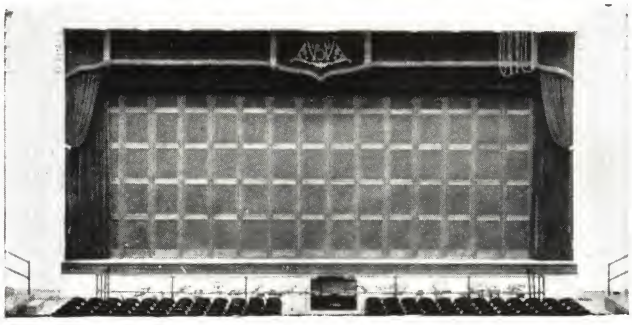


Above:
De Luxe Automatic Partition, Type A, Lower Portion Painted Dark to Wainscot Effect

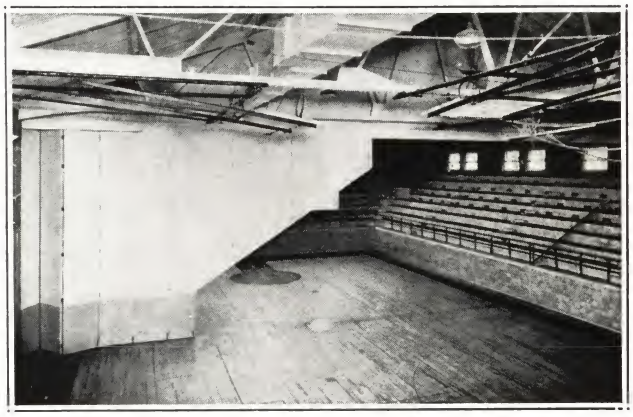


Above:
Detail Showing Relation of Electric Operator to Overhead Track

Below:
Type B (Panel) Between Auditorium and Gym



Below:
Shows Partition Cut Out to Fit Profile of Permanent Bleachers



STANDARD MECHANICAL

The Horn Standard Mechanical principle of operation consists of the hand crank mechanism and is recommended for partitions over 20 ft. wide if all sections fold toward one jamb, or 40 ft. wide if the sections fold toward both jambs. The method of operation is exactly the same as for the Standard Electric, except that the crank operator is substituted for the motor.

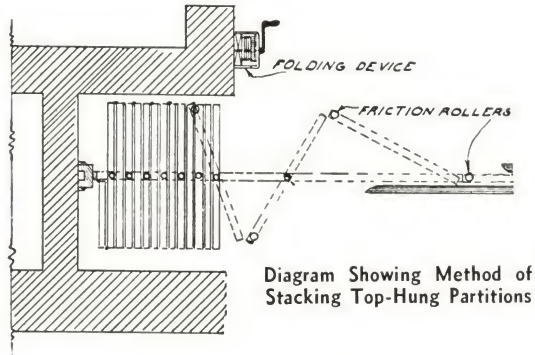


Diagram Showing Method of Stacking Top-Hung Partitions

Originators of Modern Soundproof Mechanical Partitions

MANUAL OPERATION

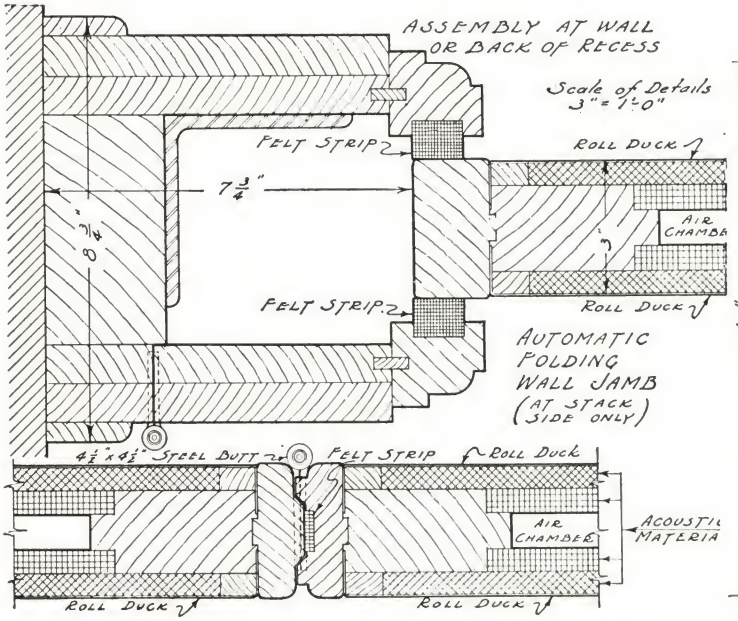
On small partitions used to divide classrooms, clubrooms, dining rooms, etc., it is not necessary to have either of the foregoing methods of operation, as these small partitions operate so easily that they can be moved by hand without difficulty.

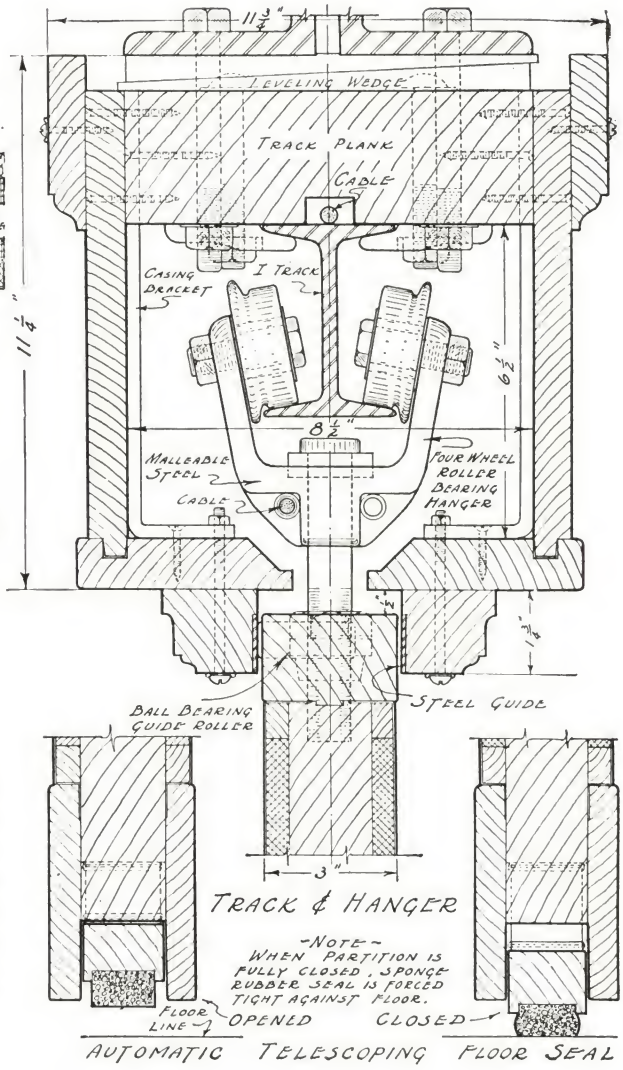
FLOOR-TRACK PARTITIONS

When it is not possible to use one of the foregoing principles of operation, due to certain building conditions, it is quite possible that the floor-track method of partition operation will be successful. Floor-track partitions are operated in individual pairs and cannot be operated by mechanical means. Horn Engineers have improved various mechanisms which now make floor-track partitions satisfactory. Whenever such a problem presents itself, call on the Horn Enginering Dpartment for specific layouts. The proper type of partition will be suggested to you from an unbiased angle as all types are now manufactured by Horn.

TYPES OF CONSTRUCTION

There is a type of Horn partition construction which can be adapted to any need from the 3-in. soundproof type to the more commonly known single panel wood door, which is only 1¾-in. thick. On the following pages are descriptions and details showing the several types which are standard. Your choice is not limited to the types shown as special construction can be designed for individual needs.

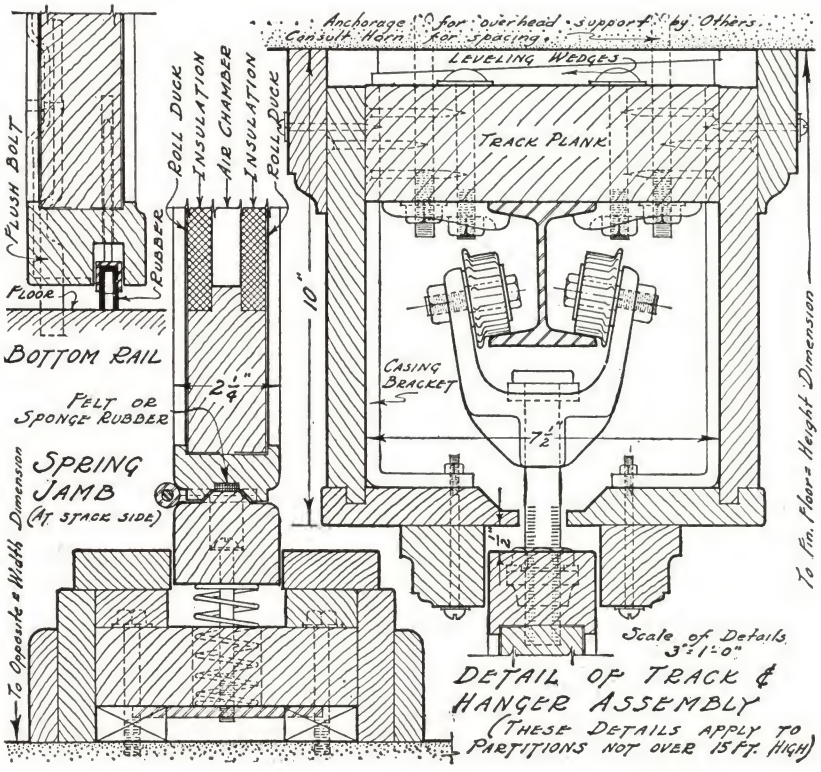




TYPICAL DETAILS—DE LUXE PARTITIONS

For Large Partitions

The above details are recommended for large partitions only, such as used in auditoriums and gymnasiums. The arrangement for the overhead track may be used on the Standard Electric and the Standard Mechanical types of partition operation. The wall jamb detail is used for De Luxe partitions only. For Standard Electric and Standard Mechanical partition jambs *see details below.* Any type of door construction can be used in conjunction with details on this page.



TYPICAL DETAILS OF LIGHT

(For Small Openings Only)

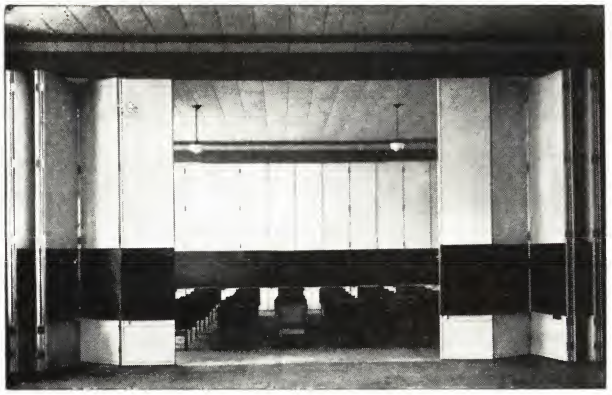
Note: These details may also be used for Types "C," "D" and "E."

For small opening, such as in classrooms, Sunday School rooms, funeral parlors, etc., the manual operation as shown in the details at the left, is recommended. These details may be used in connection with any type of construction, but usually types Light A, C, D, and E are used.

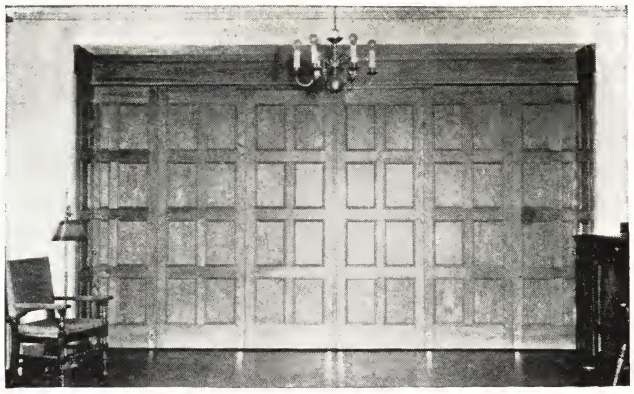
Manual operation employs the half-door principle with overhead track. No floor tracks are required. Flush bolts are used to lock the partition in place. Slate blackboard with flush chalk rails may be had on any type of construction.

For data on equipment for large partitions, see preceding pages.

Write to the Horn Engineering Department for specific data regarding your particular problem. There is no obligation.



Horn Manual Type SA for Classrooms



Horn Manual Type E for Hotels, etc.

DESCRIPTION OF VARIOUS TYPES

Type A—Soundproof construction, 3 in. thick, roll duck, flush surface two sides. Recommended for dividing gymnasiums. High soundproofing efficiency.

Type AW—Soundproof construction 3 in. thick, wood panels both sides. Recommended for gymnasiums. Acoustic value lower than Type A.

Type AM—Soundproof construction, 3 in. thick. Same as Type A, but with Presdwood, cork, plywood or linoleum wainscoting. Recommended for gymnasiums.

Light Type A—Similar to Type A but lighter, 2¼ in. thick. Acoustically constructed. For small openings only.

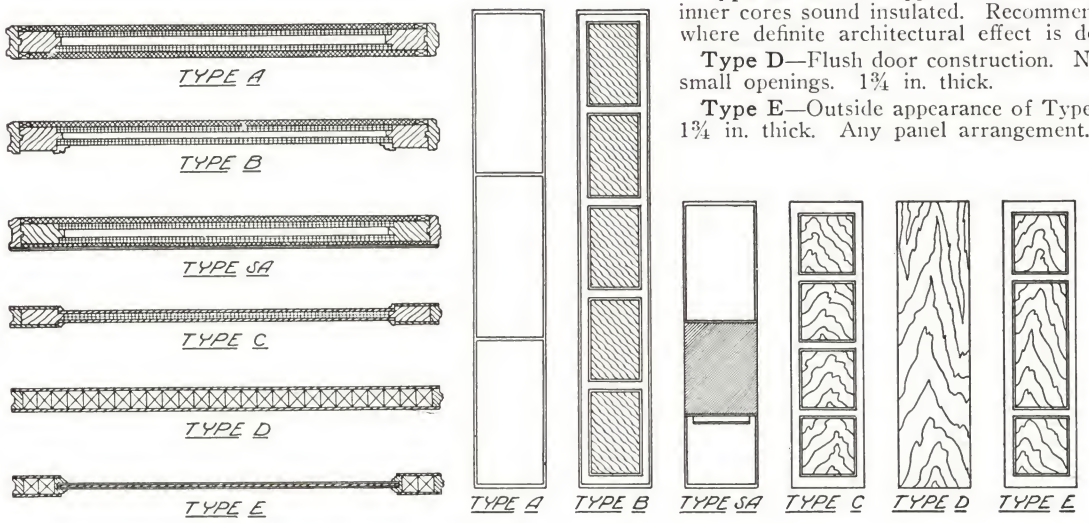
Type SA—Same as Type A, blackboard one side. Type SSA, blackboard two sides. Recommended for classrooms.

Type B—Soundproof construction, 3 in. thick, art cloth panels one side, roll duck other side. Recommended for auditoriums and gymnasium combinations. Highly acoustic.

Type C—Outside appearance same as ordinary wood doors; inner cores sound insulated. Recommended for small openings where definite architectural effect is desired. 1¾ in. thick.

Type D—Flush door construction. No soundproofness. For small openings. 1¾ in. thick.

Type E—Outside appearance of Type C but not soundproof. 1¾ in. thick. Any panel arrangement.



Note: The prefix "S" signifies slate blackboard one side. The prefix "SS" signifies blackboard two sides. Blackboard can be used in connection with any of the above types. For example, specify Type SA, meaning A with blackboard on one side.

Note: Special types, other than above, can be designed for exacting conditions. Yellow pine astragals and dull brass hardware furnished unless otherwise specified.

SPECIFICATIONS—FOLDING PARTITIONS

(SEE DESCRIPTION PRECEDING PAGES)

DeLuxe Fully Automatic Electric—The folding partition as shown on plans shall be Horn DeLuxe Fully Automatic Electric, as manufactured, installed and guaranteed by the Horn Folding Partition Co., Fort Dodge, Iowa.

The principle of operation shall provide automatic and electric folding and unfolding of the partition, and automatic locking and unlocking with complete electrical control of all operations from the key switch conveniently located. It shall provide a one-inch clearance between the bottom of the partition and the floor when the partition is opening or closing, but the final closing movement shall cause the entire partition to automatically seal the space against transmission of sound by compressing the heavy molded sponge rubber against the floor, and automatically locking all sections in their fully closed position.

The operating mechanism shall include the cable drive, electric motors, magnetic switches, speed reducers, limit switches, control switch, and all necessary equipment to make a partition of this type.

The partition shall be supported on I-beam track running on four-wheel roller bearing I-beam hangers designed especially for use on folding partitions. Each hanger shall have a capacity of not less than three tons.

The partition shall be constructed of Horn type (specify Types A, AW, AM or B). The sections shall be 3 in. thick and of soundproof construction. (If recess doors are required, specify, "Recess doors shall be of similar construction as partition proper.") Pass doors shall be included as shown on plans.

Supporting steel to be drilled or punched by others according to manufacturer's directions.

The entire equipment shall be installed by factory trained mechanics and guaranteed by manufacturer for a period of five years.

Standard Electric—The folding partition as shown on plans shall be the Horn Standard Electric as manufactured, completely installed, and guaranteed by the Horn Folding Partition Co., Fort Dodge, Iowa.

The principle of operation shall include electric equipment consisting of motors, limit switches, speed reducers, key control switch and magnetic relay. It shall provide that the space at the floor line be sealed with self-balancing type floor seals. Flush bolts shall be furnished to hold the partition rigidly in place. (For partition construction, etc., see preceding specification.)

Standard Mechanical—If hand crank mechanism is desired instead of electric equipment, outlined in Horn Standard Electric, specify Horn Standard Mechanical.

Manual—For small partitions where no operators of any kind are required, specify Manual. For type of partition construction, see preceding details. All top-hung Horn Partitions, regardless of principles of operation or type, are furnished without floor tracks.

WRITE TO FORT DODGE OFFICE IF SPECIFICATIONS ON HORN FLOOR TRACK PARTITIONS ARE DESIRED

SEE GENERAL INDEX FOR
HORN FOLDING BLEACHERS

NEW CASTLE PRODUCTS

654 So. 25th Street, NEWCASTLE, IND.
NEW YORK OFFICE, 56 West 45th Street
AGENTS IN PRINCIPAL CITIES

MODERNFOLD PARTITION
FOLDING PARTITION
ROLLING PARTITION

The A Line

SCHOOL WARDROBES
SOUNDPROOF DOORS
PORTABLE BLEACHERS

MODERNFOLD DOORS

Modernfold Doors have solved some of the most difficult door problems. As a closing member, it eliminates the area required for the swing of doors. It can be used in any opening where a closing member is necessary. The exclusive construction fulfills the requirement for a door that meets the needs of today for a limited space. Modernfold combines convenience, ease of operation, beauty and utility. There can be no question of its space-saving ability. The accordion folding on itself, as a self-contained unit, eliminates the objectionable feature of other kinds of closing units. It is a decorative as well as a closing member in the layout of rooms, large or small, in which it is used due to the effect achieved by the great variety of the fabrics obtainable for its covering. Harmony with any general color scheme is possible without limitation. Each side of the opening may have a different color to match the decorative scheme of the room it faces. Washable and easily cleaned materials in a wide variety of textures and finishes are available. Re-covering is simple and can be easily accomplished.

Where Used

These quiet, strong and durable "movable walls" are being used in Hotels, Clubs, Homes, Restaurants, Offices, Stores, Schools, Churches, Beauty Parlors, Funeral Homes, Hospitals and Apartments.

Fabrics

A wide range of colors in leatherettes and velours is available as standard covering. Fabrics are applied at the factory only and guarantees a complete, finished product. Special fabrics may be used.

Construction

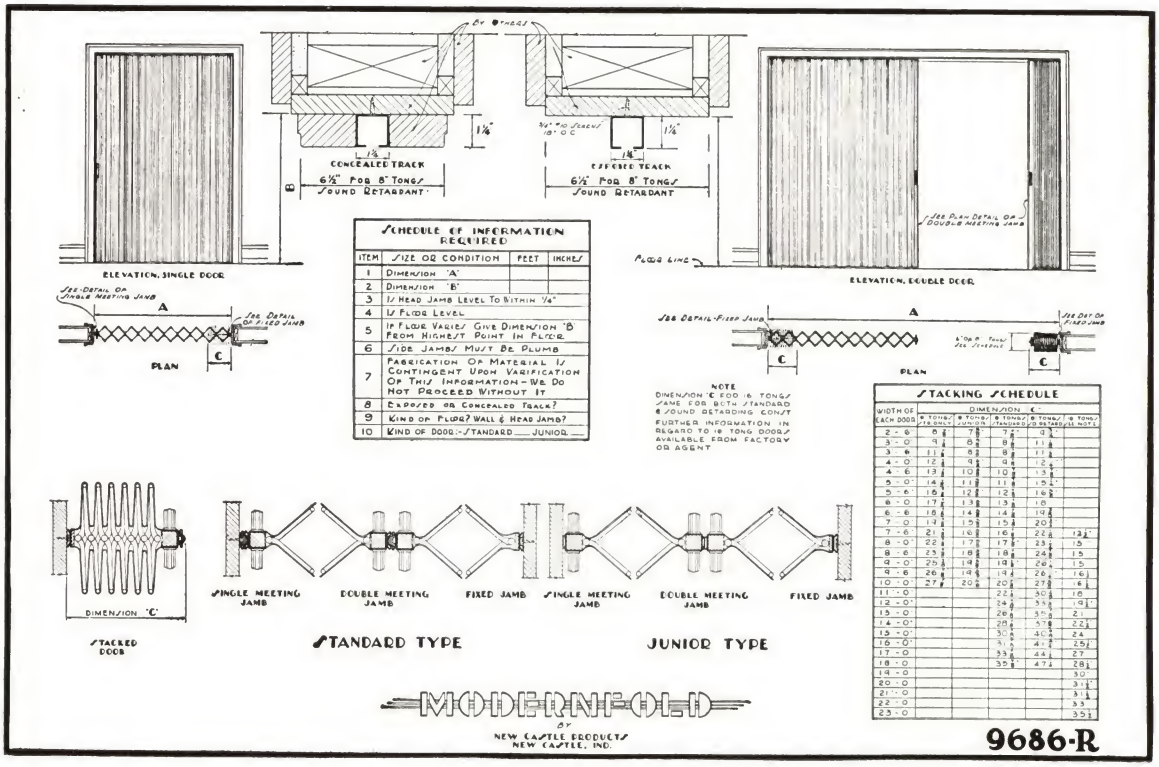
The accordion type metal frame is made of tested parts forming a firm foundation to which the fabrics are attached. Uniformity and precision are acquired in each door from accurately made metal parts and the assembly and application of materials by experts.

Advantages

It is not necessary to change an opening to install Modernfold Doors, nor is it necessary to confine Modernfold to new construction. Where the constant increased demand for elimination of waste space has created a vexing problem, Modernfold Doors furnish a positive solution. These doors exemplify all that is modern, new and individual. They express charm and good taste. They are distinctive and beautiful. Installation is easily accomplished by owners.

Specifications

Where indicated on plans, contractor to install Circle A Modernfold Doors as furnished by NEW CASTLE PRODUCTS, Newcastle, Indiana. Fabric to be (leatherette, velour, or others) applied at the factory.



MODERNFOLD DOORS

TYPICAL INSTALLATIONS OF MODERNFOLD DOORS

The fact that Modernfold Doors provide the practical answer to many modern door problems is proved by the wide range of types of installations shown below.

The variety of fabric and color which may be used permits matching or accentuating any room decorative treatment. The attractive hardware is in keeping with the beauty of the doors themselves.



Modernfold Doors in hotel cocktail room; finished in Chinese red leatherette



Modernfold Doors in residence; finish, brown fabric

Modernfold Doors in residence; finish, ivory leatherette



Modernfold Doors in architects' offices, finished in blue velour one side, brown taupe on the other

Modernfold Doors in office; finish, dark brown leatherette

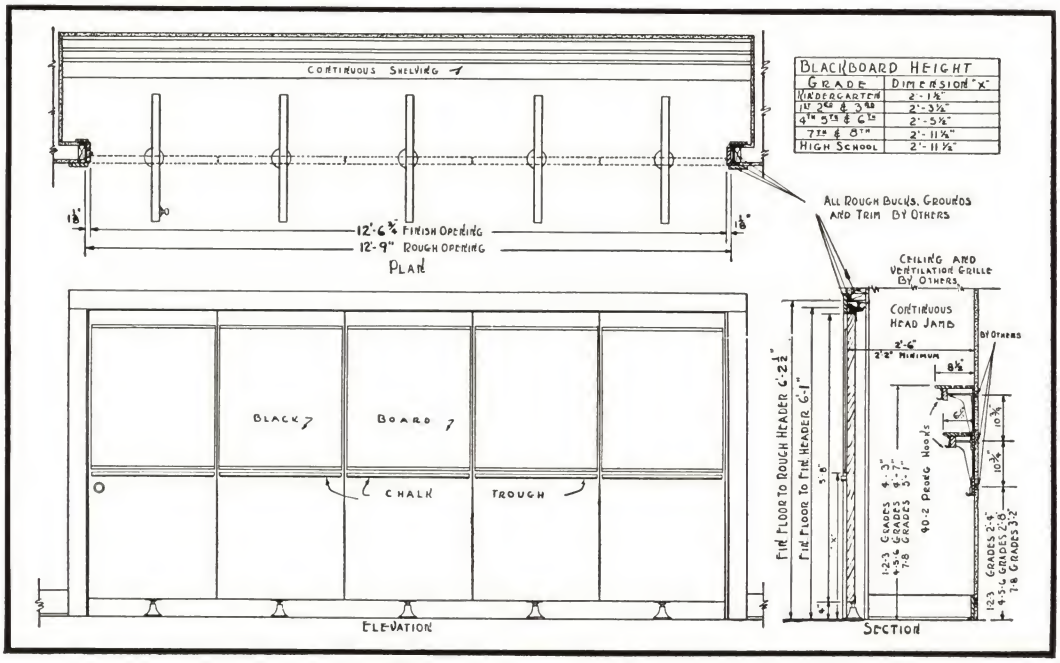
MULTIPLE OPERATED SCHOOL WARDROBES

Circle A Wardrobes incorporate the use of center pivoted door hardware, group operated and group operated with individual door release. The bronze hardware meets the most exacting specifications where quality of material is of importance. It permits the maximum of flexibility in door and opening sizes. The continuous shelving allows a saving in space unobtainable in other types. Wardrobes are furnished complete only, delivered or installed from our factory or authorized representative. All wardrobes guaranteed against faulty parts and operation.

Construction

All operating hardware is of solid bronze with exposed or visible parts polished and interior or operating members of sandblast finish. One knob type latch on the master door operates the entire group. Felt lined cast bronze bumpers occur at end doors for silence in closing. Ball bearing top and bottom pivots assure ease of operation. Top pivot thrust bearings furnished complete inset in hardwood head jamb simplifies erection. Cast iron coat hooks and shelf brackets with brown finish furnished with wood slat shelving. Doors and optional items furnished in accordance with requirements.

See following page for Specifications and Optional Features.



Specifications

(Multiple Operated School Wardrobes)

Where shown on plan, wardrobes to be group operated (with individual door release) from one master control door. Operating hardware to be solid bronze throughout. Hat and coat racks to be continuous full length of wardrobes with black finish double prong coat hooks and brackets supporting two shelves.

Optional Features

(Multiple Operated School Wardrobes)

In addition to the specifications the following other parts, if required, should be clearly defined. The type, thickness and wood used for doors; locks; umbrella racks; blackboards and corkboards; special shelving, bookcases and teachers' closets.

INFORMATION REGARDING CIRCLE A FOLDING PARTITIONS

General—It is not possible always to indicate in standard details or description that which would apply to special problems. NEW CASTLE PRODUCTS maintains an Engineering Department capable of solving your problems and a representative in your nearest city to advise you. By contact direct to the factory, giving pertinent information of your requirements, specifications, details and suggestions will be offered without obligation. Other features common to all types of folding partitions require special mention.

Construction—The NEW CASTLE PRODUCTS organization has operated in the building construction field for more than twenty years with a capable and recognized staff. It has the most modern plant of its kind available for the fabrication of these products with craftsmen skilled in cabinet work and design.

Installation—Work may be done by factory trained mechanics or local erection depending largely on the size of the partition and the demands of the specifications. Complete details are furnished for all operations.

Guarantee—All partitions are guaranteed against faulty parts and operation. This is possible due to the excellence which has been obtained in the design and fabrication and the ability of Circle A Folding Partitions to serve with a maximum of satisfaction.

Service—Knowing that each individual problem requires its respective detail and it is impossible to present more than standard practices, NEW CASTLE PRODUCTS will gladly help you through their Architectural and Engineering Department as well as their many leading representatives throughout the country. The Circle A line is a standard for comparison.

AUTOMATICFOLD—STANDARD CIRCLE A LINE FOLDING PARTITIONS

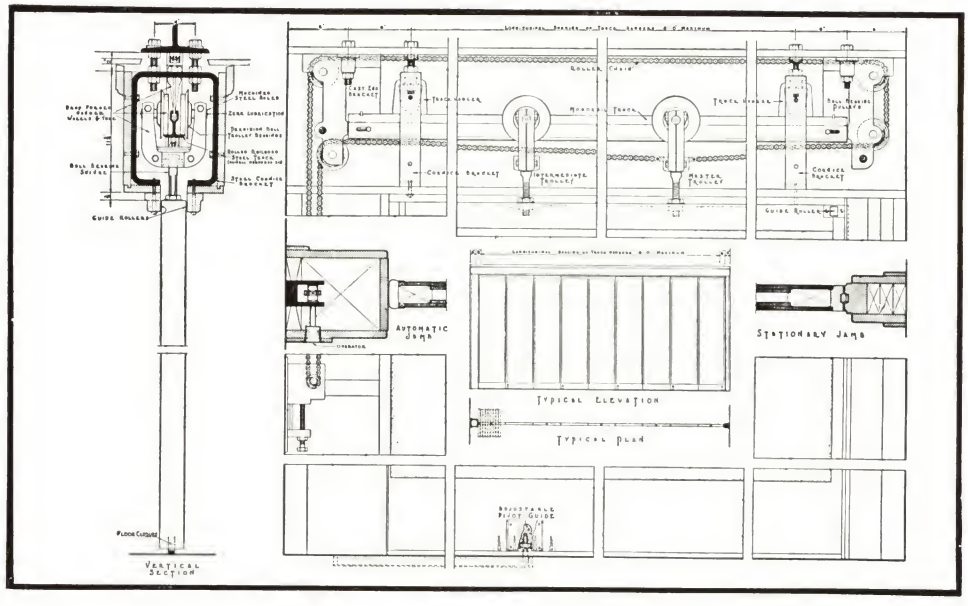
This type used for large openings where overhead support is available. They may be either motor driven or have handcrank operation. Doors may fold to one side or be divided to fold at both sides. They are of the accordion type and hinge together. Trolleys occur on the door at the stacking end and on the odd numbered doors in the run. If the partition consists of one run folding to one side only, an odd number of doors must be used. If folded to both sides, an even number of doors will result, each side having an odd number of doors. On the stacked side, the end door is automatically swung, by means of mechanism, into stacked position to allow this door to assume its stacked position. This occurs at each end when folding both ways.

Various floor sealing methods are available to secure positive rigidity of the partition. Where an entirely automatic partition is desired the automatic floor closer is used, consisting of a sponge rubber seal compressed to the floor upon closing of the doors. A positive floor closer of similar construction to the automatic type but of manual operation is highly successful and used on smaller size openings. Flush bolts may also be used.

Ease of propelment and quiet operation are attained in the design of track and trolleys used. Large size two wheel forged ball bearing trolleys permit easy and quiet operation that has no superior. A smooth rolled hardened steel track adds the assurance of safety.

key control switches composing all electric mechanism. Outlets for this equipment and connections to be made by electrical contractor. Hardware shall include hardened steel track, forged track hangars, forged two wheel roller bearing trolleys, roller chain drive, door butts and all hardware in connection with doors to make a complete installation. Overhead construction or supporting steel to be prepared for folding partition track by others at this manufacturer's instructions. The doors shall be of sound retarding construction according to manufacturer's design, thickness and type. (Specify duck covered, wood veneer, flush or panelled.) Floor closers in bottom of doors to be sponge rubber automatic closing type, sealing opening at floor. All wood trim at head and jambs to make a complete installation shall be furnished by folding partition manufacturer.

Automaticfold Hand Crank—If operation by hand crank is desired eliminate the electrical controls specified above and mention Automaticfold with Hand Crank Operation.



Specifications

Automaticfold Electric—Where shown on plans, folding partition shall be Circle A Automaticfold type as manufactured, installed and guaranteed by the NEW CASTLE PRODUCTS, Newcastle, Indiana. The opening and closing of the doors shall be entirely automatic. Operating equipment shall include electric motors with speed and brake control, relay, limit and

STANDARDFOLD

This type of overhead supported partition differs from the Automaticfold in construction only by the use of a half door at the stacking end which must be broken out of line by hand.

This partition may be hand crank or manually operated. It requires no swing jamb as the half door is hinged to the stationary jamb at the stacking end. Folding partitions for small openings are usually manually operated.

Specifications

Standardfold Hand Crank—Specifications same as Automaticfold Hand Crank type, using flush bolts or manually operated sponge rubber floor seals.

Standardfold Manual—Specify same as above with operation entirely manual.

Pairfold and Singlefold, floor supported folding partitions, are also available. Write for details.

DOORS

General—Many designs in various woods, duck covered, paneled, flush panel and other surfaces are available in thicknesses up to 3 in. The size of the partition determines the thickness. The average weight is about 8 lbs. per sq. ft.

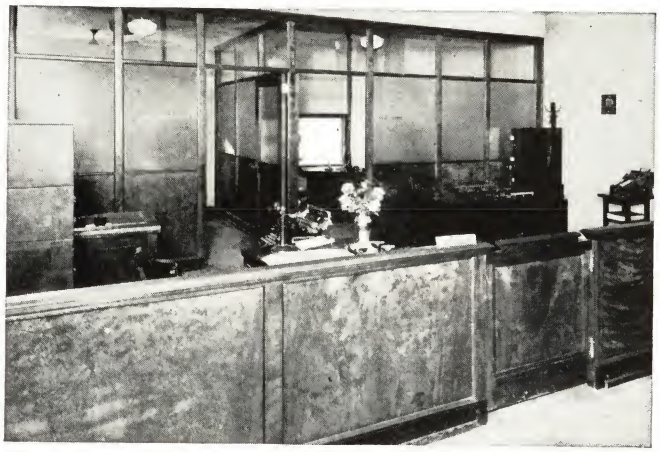
Sound Insulation—Nearly all types of doors, 2½ to 3 in. thick, can be sound insulated. NEW CASTLE PRODUCTS, one of the leading manufacturers of soundproof doors, utilizes its years of experience in designing folding partitions which are as sound retardant as such openings will permit.

Pass Doors—Pass Doors may be cut into one of the full door units to permit access to adjoining rooms. Pass doors eliminate the necessity of opening folding partition.

Pocket Doors—Recessed pockets into which the doors may fold and thus be concealed are a desirable but not always a necessary feature. Pocket doors may also be obtained.

Blackboards and Corkboards—Blackboards are with ground edges at meeting lines, metal angles top and bottom. Corkboards metal bound all four edges.

OFFICE PARTITIONS



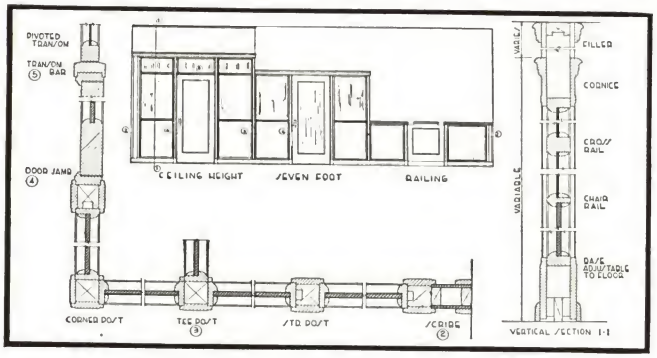
Circle A Imperial Design



Circle A Commercial Design

Circle A Partitions are the efficient and economical answer wherever subdivision is needed. Built to be attractive as well as useful, Circle A Partitions give the warmth and charm of fine wood to every interior. Easy to erect, they provide solidity that comes only from sound construction and careful building. Sections are few, and they fit simply and securely together by the tongue and groove method. No connecting hardware is visible. Only two screws (invisible in the erected wall) hold each section to the next "solid as a rock." There is no hint of movability—yet, when desired, these walls may be taken down without damage; quickly removed, and re-erected with little trouble or expense. New offices can be built over night.

Circle A Partition is available in Railing, Seven-foot and Ceiling Height construction.



Imperial Design

Simple in design, stronger in construction, Imperial, we claim, stands without an equal. Yet its price is surprisingly low. A new and more efficient method of construction is the reason. Its beauty is apparent; lines are simple. Solid hardwoods throughout give beauty of graining and coloring that cannot be found in painted substitutes. There are fewer pieces, and they fit more perfectly. Erection is faster. Taking down and re-erection are easier.

Imperial has character that distinguishes it from less carefully built partitions. The posts, in ceiling height, form a clean line to the ceiling—unmarred by joints and cracks.

Imperial Flushwall design is used for fine office construction where dividing walls between offices must transmit as little sound as possible. Fulfills all requirements of Imperial design in appearance and can be used in conjunction with that design. Primarily used where solid walls are needed, but movability is a requirement.

Similar to the Imperial design, this type uses the same mouldings and is interchangeable with the Imperial design.

Sections may be open for glass, but the principle of this construction makes it primarily adaptable for walls where sound retarding is desirable and light transmission is not of importance.

Base and wiring facilities identical to Imperial design.

Ceiling Height partition consists of sections and cornice to 8′ 6″ height with double mineral board filler to ceiling.

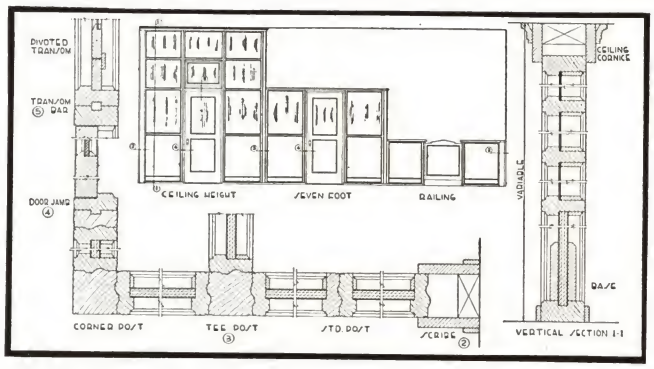
When glass openings are used—single glass is standard, but for added sound retarding, double glass should be used.

Construction of sections consists of two full panels on face sides of sections with Kimsul insulation between them.

Master section size 38″ from center to center of posts.

Commercial Design

When costs must be cut to the minimum, and yet a good appearance is required, Commercial Design is the answer. Somewhat different in lines and construction, and built of less expensive woods, Commercial Design still offers fine appearance and same efficient method of erection —at a lower price. Seven-foot is easily converted into Ceiling Height by the addition of the upper section. A smooth, perfectly fitting joint at walls and floor is assured. Hardware of good quality gives reliable action through years of service. The economy of Circle A Partitions is doubly appreciated at moving time. They are moved and re-arranged swiftly, quietly, without the need for skilled labor.



Factory Design

Factory Design is furnished for industrial uses where appearance is not a deciding factor, but strength, rigidity and movability are necessary. Minimum cost is involved; satisfactory results are obtained. Pine and Fir used throughout.

Rolling Partitions—Soundproof Doors—Bleachers

The complete Circle A line includes: *Rolling Partitions* which provide an economical means of sub-dividing space. *Soundproof Doors* for effective sound retardation are available in standard types with any finish. *Bleachers* for inside and outside requirements, safe and rigid. Write for specifications and complete information.

THE RICHMOND FIREPROOF DOOR CO.

Manufacturers of Fol-Dec Folding Doors, Partitions and Window Closures

FORMERLY MANUFACTURED BY

THE FOLDING PRODUCTS CORP., CHICAGO, ILLINOIS

RICHMOND, INDIANA and BROOKLYN, N. Y.

For List of Representatives, see Catalog on Fire Doors, listed in File Index

Folding Doors and Partitions

Fol-Dec Folding Doors and Partitions are a patented means for closing off adjoining rooms or dividing one room into smaller units. Resembling draperies, they can be made to harmonize with any color scheme or decorative effect.

Construction

Steel upright stiles, held in place by steel spacers, are covered on each side with a layer of heavy felt. Over this felt is placed a decorative material, such as velours, tapestries, silks, fabrikoid leather, etc. The decorative fabric is so attached to the frame that it may be easily removed in the event it is desired to have it cleaned or replaced. Ball bearing rollers, under each stile, assure easy and noiseless operation as they glide over a small track set flush with the floor.

Advantages

Fol-Dec Doors when folded back give the general appearance of perfectly folded draperies, thereby eliminating the necessity of further decorations. The air pocket construction, between two layers of heavy felt, insures the greatest privacy and improves the acoustics. They conserve space, permit economy in building construction, as well as add beauty and refinement to any interior. They will not warp or stick. Fol-Dec Doors combine beauty, utility, economy and privacy.

Installation

Fol-Dec Doors are self-contained and easily installed, needing no special construction as they are fastened to the jambs or side walls by means of vertical spring locks, which fasten in both the top and the bottom tracks.

Color

Any color can be selected to match the color scheme or decoration, and each side can be made up in a different color if so desired.

Fabric

Velours, tapestry, silks, fabrikoid leather, etc., are used for the decorative covering on Fol-Dec Doors.

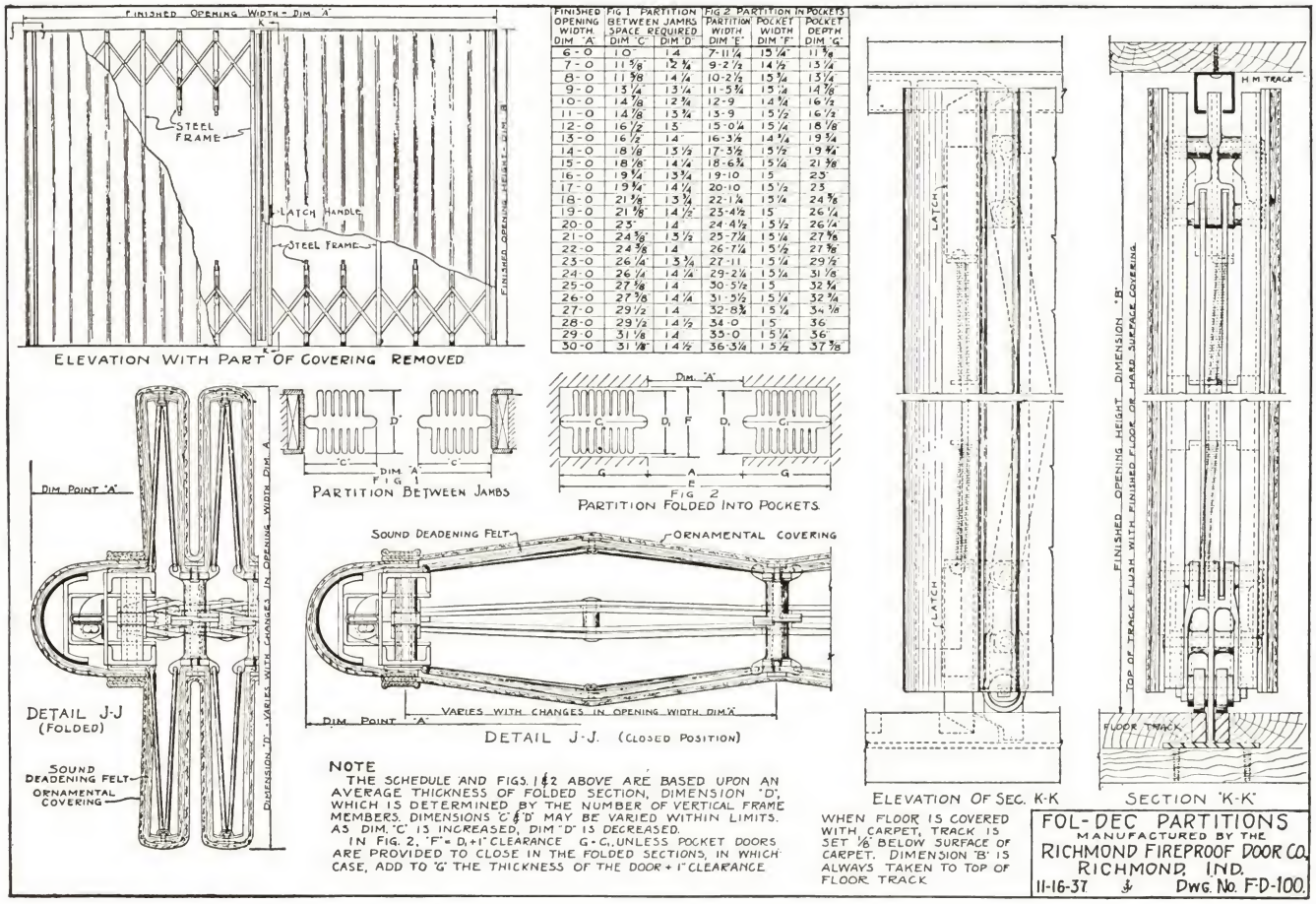
Size

Fol-Dec Doors and Window Closures are custom built for any size opening.

Service

Doors are shipped complete with top and bottom track and all necessary hardware ready for installation.

We will gladly submit plans, estimates or further information on request. Specify Fol-Dec Doors.



FINISHED OPENING WIDTH DIM 'A'	FIG 1 PARTITION BETWEEN JAMBS SPACE REQUIRED DIM 'C'	DIM 'D'	FIG 2 PARTITION IN POCKETS PARTITION WIDTH DIM 'E'	POCKET WIDTH DIM 'F'	POCKET DEPTH DIM 'G'
6-0	10"	14	7-11¼	15¼"	11⅜
7-0	11⅝	12¾	9-2½	14½	13¼
8-0	11⅜	14¼	10-2½	15¾	13¼
9-0	13¼	13¼	11-5¾	15¼	14⅞
10-0	14⅞	12¾	12-9	14¼	16½
11-0	14⅛	13¾	13-9	15½	16½
12-0	16½	15"	15-0¼	15¼	18⅛
13-0	16½	14"	16-3¼	14¼	19¾
14-0	18⅛	15½	17-3½	15½	19¾
15-0	18⅛	14¼	18-6¾	15¼	21⅜
16-0	19¼	13¾	19-10	15"	23"
17-0	19¾	14¼	20-10	15½	23"
18-0	21⅛	13¾	22-1¼	13¾	24⅜
19-0	21⅛	14½	23-4½	15"	26¼
20-0	23"	14"	24-4½	15½	26¼
21-0	24⅜	15½	25-7¼	15¼	27⅜
22-0	24⅜	14"	26-7¼	15½	27⅜
23-0	26¼	13¾	27-11	15¼	29½
24-0	26¼	14¼	29-2¼	15¼	31⅛
25-0	27⅝	14"	30-5½	15"	32¾
26-0	27⅜	14¼	31-5½	15¼	32¾
27-0	29½	14"	32-8¾	15¼	34⅞
28-0	29½	14½	34-0	15"	36"
29-0	31⅛	14"	35-0	15¼	36"
30-0	31⅛	14½	36-3¼	15½	37⅜

NOTE
THE SCHEDULE AND FIGS. 1 & 2 ABOVE ARE BASED UPON AN AVERAGE THICKNESS OF FOLDED SECTION, DIMENSION "D", WHICH IS DETERMINED BY THE NUMBER OF VERTICAL FRAME MEMBERS. DIMENSIONS 'C' & 'D' MAY BE VARIED WITHIN LIMITS. AS DIM. 'C' IS INCREASED, DIM "D" IS DECREASED.
IN FIG. 2, "F" = D, +1" CLEARANCE G = C, UNLESS POCKET DOORS ARE PROVIDED TO CLOSE IN THE FOLDED SECTIONS, IN WHICH CASE, ADD TO 'G' THE THICKNESS OF THE DOOR + 1" CLEARANCE.

WHEN FLOOR IS COVERED WITH CARPET, TRACK IS SET ⅛" BELOW SURFACE OF CARPET. DIMENSION 'B' IS ALWAYS TAKEN TO TOP OF FLOOR TRACK.

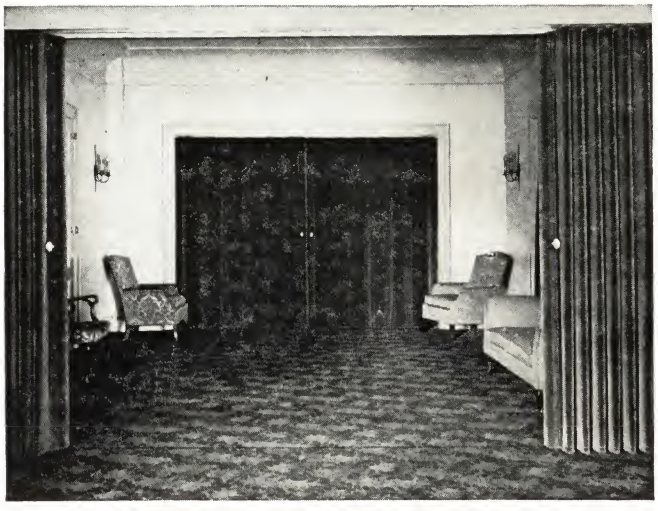
FOL-DEC PARTITIONS
MANUFACTURED BY THE
RICHMOND FIREPROOF DOOR CO.
RICHMOND, IND.
11-16-37 Dwg. No. F-D-100.

Partial List of Installations Fol-Dec Doors and Partitions

Lincoln Turner Hall, Chicago, Ill.
First Presbyterian Church, Chicago, Ill.
Macys Dept. Store, New York City.
McCann Building, Pittsburgh, Pa.
Fiss and Bills, Oshkosh Wis.
Gilligan Funeral Home, Cincinnati, Ohio.
Foreman Bank, Chicago, Ill.
Faculty Club, Harvard University, Cambridge, Mass.
Boyertown Burial Casket Co., New York City.
M. E. Church, Detroit, Mich.
Innes Dept. Store, Wichita, Kans.
Trustees System Service Bldg., Chicago, Ill.



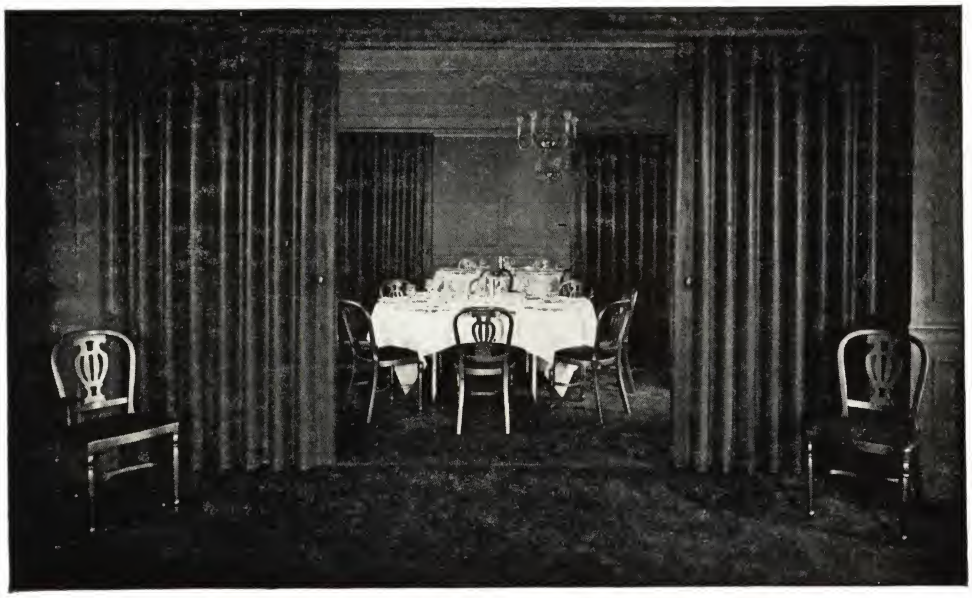
Boyertown Burial Casket Company—New York, N. Y.



Gilligan Funeral Home—Cincinnati, Ohio



Foreman Bank—Chicago, Illinois



Private Dining Rooms—Medinah Athletic Club—Chicago, Illinois

Partial List of Installations Fol-Dec Doors and Partitions

Mandels Dept. Store, Chicago, Ill.
Saks Fifth Ave. Shop, New York City.
Franklin Office Bldg., Chicago, Ill.
New Southern Hotel, Jackson, Tenn.
Mundelein College, Chicago, Ill.
Medinah Athletic Club, Chicago, Ill.
St. Pauls Home, Chicago, Ill.
Hotel St. George, Brooklyn, N. Y.
Lord & Thomas, Chicago, Ill.
Hursen Undertaking Parlors, Chicago, Ill.
Hotel New Yorker, New York City.

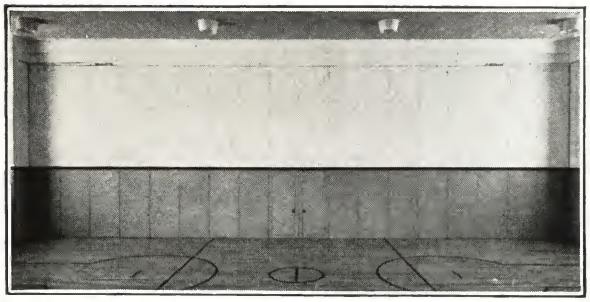
Manufactured under Original Patents—Beware of Infringements.

RICHARDS-WILCOX MANUFACTURING CO.

Manufacturers of the Original Fully Automatic Folding Partition

AURORA, ILL.

REPRESENTATIVES IN ALL PRINCIPAL CITIES
FOR OTHER R-W PRODUCTS, SEE FILE INDEX



The "FoldeR-Way" line includes a standard type of folding partition to meet all conditions

Fully Automatic Electric FoldeR-Way Partition

This deluxe equipment is designed especially for use in gymnasiums and auditoriums where the openings are wide and high. The partition is fully automatic in operation; uses full width doors across the entire opening; does not require any floor tracks or floor guides; provides effective fully automatic soundproofing; insures safe foolproof operation; folds gymnasium doors and pocket doors automatically; is one hundred percent electric; eliminates all manual work. To operate the partition, it is merely necessary for the attendant to turn the switch key. All subsequent operations are controlled by the electric operator. When the partition is in operation, no part of the door or sealing device is in contact with the floor. When the partition is closed, it is in tight contact with the floor and definitely locked to prevent lateral movement. This type of partition is foolproof and its satisfactory operation is in no way dependent upon the experience or skill of the attendant in charge.

Crank Operated FoldeR-Way Partition

This type of FoldeR-Way partition is exactly the same as the fully automatic electric type, except that it is crank operated instead of electrically operated. It can be used in all large openings.

Manually Operated FoldeR-Way Partitions

For classroom partitions and other small openings, the No. 135 manually operated type as specified below is recommended. This type generally uses a half door at the jamb, does not require floor tracks, is overhead hung, and may be arranged with doors folding toward one or both jambs.

When the doors must fold entirely into one room, we recommend the No. 535 type, which provides for pair operation with the load supported from the floor track. If proper overhead support can be provided, then we recommend the use of the No. 237 type. These various types are fully described, illustrated, and detailed in our standard catalog A-69.

Doors

No. 368 Design—Soundproof, 3 in. thick, duck covered with plywood backing, double sound insulation, built-up core, and metal angle edges. Recommended for gymnasium and auditorium use.

No. 368-A—Same as No. 368, except with cork wainscot.

No. 368-B—Same as No. 368, except with presdwood wainscot.

No. 368-C—Same as No. 368, except with plywood wainscot.

No. 368-D—Same as No. 368, except with linoleum wainscot.

Wood Veneered Doors

Wood doors will be made to suit design of the architect.

Installation

It is recommended that all FoldeR-Way partitions be installed under the supervision of R-W factory trained erectors.

Guarantee

All FoldeR-Way partitions are fully guaranteed.

SPECIFICATIONS

Gymnasium Type—Fully Automatic Electric Operation

The soundproof folding partitions shall be R-W Fully Automatic Electric FoldeR-Way Type as manufactured, installed, and guaranteed by the RICHARDS-WILCOX MANUFACTURING CO., Aurora, Illinois.

The principle of operation shall provide automatic and electric folding and unfolding of all partition and pocket doors, automatic locking and unlocking, and automatic soundproofing with complete electrical control of all operations from the key switch located where shown on the plans. The principle of operation shall also provide a 1⅛-in. minimum space between the bottom of the partition and the floor when opening or closing, but the final closing movement shall cause the entire partition to automatically seal this space against the transmission of sound by compressing the heavy continuous molded gum rubber cushion against the floor and automatically locking all doors in their fully closed position.

The operating equipment shall include roller drive chain operating over ball-bearing sprockets, heavy duty lock-joint track with 4-wheel ball-bearing hangers using 3-in. diameter wheels. Equipment shall also include electric operator complete with motor, speed reducer, friction clutch, magnetic brake, relays, limit switches, key control switch, and manual release mechanism with emergency crank operating unit.

The partition doors shall be R-W No. 368 design (or No. 368-A, No. 368-B, No. 368-C, No. 368-D). The doors shall be 3-in. thick, of soundproof construction using built-up stiles and rails, which shall be mortised and tenoned. All duck-covered surfaces shall be backed by plywood with a double layer of ½-in. sound insulating material.

Conduits, outlets, concealed electric wiring, painting, and punching of overhead truss shall be by others in accordance with R-W details.

The partition shall be furnished and installed complete by R-W and fully guaranteed.

Classroom Type—Manually Operated

The folding partition shall be R-W Manually Operated FoldeR-Way Type as manufactured, installed, and guaranteed by the RICHARDS-WILCOX MANUFACTURING CO., Aurora, Illinois.

The partition shall be overhead hung and shall not require the use of floor tracks or floor guides. All doors folding toward a single jamb shall be hinged together and shall operate manually as a unit. With the exception of the half door at the jamb, each alternate door shall be supported from its center line by No. 135 4-wheel ball bearing hangers of proper size, which will operate in overhead lock-joint track. The partition shall be locked in its closed position by means of a flush bolt located on each door and engaging in standard keepers set flush with the finished floor.

The operating equipment shall be complete using R-W No. 135 hangers, track, brackets, pulls, bolts, and butts as required. All exposed hardware shall be finished to match other hardware in the room.

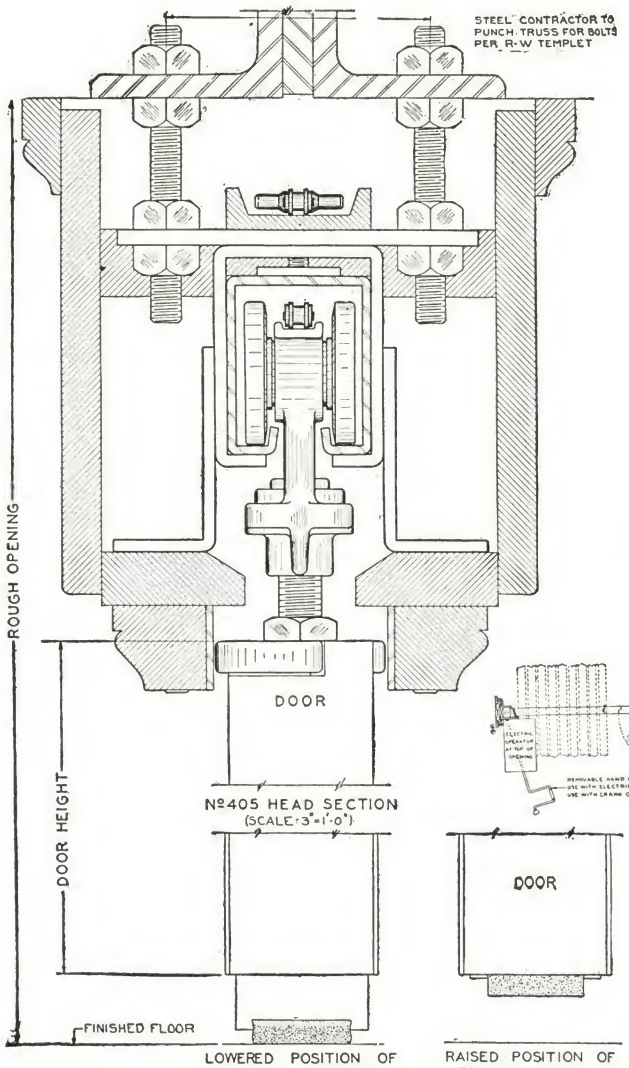
The partition shall be complete with 2¼-in. duck-covered doors using plywood backing and double layer of ½ in. interior insulation. (If wood veneered doors are required, specify either panel or flush and refer to details in R-W catalog A-69 or the architect's plans.) Whenever specified, the bottom of the doors will be equipped with full floating soundproof floor seals.

Blackboards and corkboards will be furnished whenever specified.

All rough bucks, filling, staining, painting and punching of truss shall be by others.

The partition shall be furnished and installed complete by R-W and fully guaranteed.

GYMNASIUM TYPE — Fully Automatic Electric Operation



№405 HEAD SECTION
(SCALE: 3"=1'-0")

LOWERED POSITION OF AUTOMATIC SOUNDPROOF FLOOR SEALS WHEN DOORS ARE CLOSED
SCALE: 3"=1'-0"

RAISED POSITION OF AUTOMATIC SOUNDPROOF FLOOR SEALS WHEN DOORS ARE OPERATING
SCALE: 3"=1'-0"

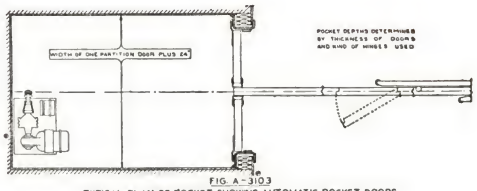


FIG. A-3103
TYPICAL PLAN OF POCKET SHOWING AUTOMATIC POCKET DOORS
ILLUSTRATING PARTITION AND POCKET DOORS CLOSED

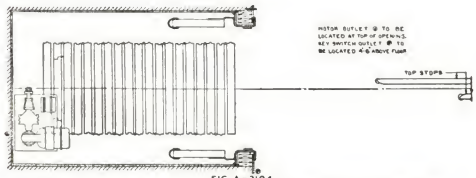


FIG. A-3104
THIS DETAIL SAME AS FIG. A-3103 EXCEPT ALL DOORS ARE FOLDED IN POCKET

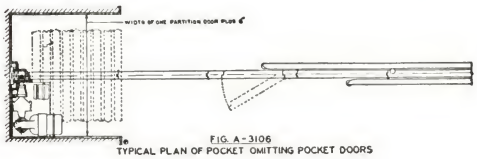


FIG. A-3106
TYPICAL PLAN OF POCKET OMITTING POCKET DOORS

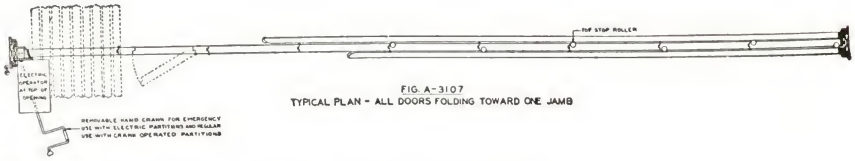
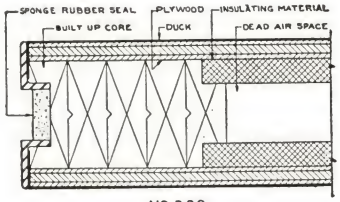


FIG. A-3107
TYPICAL PLAN - ALL DOORS FOLDING TOWARD ONE JAMB



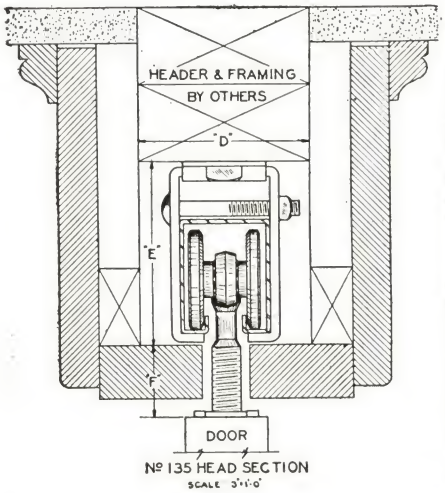
№ 368
ENTIRE DOOR IS DUCK COVERED ON BOTH SIDES
THIS IS STANDARD DESIGN FOR THE UPPER PORTION OF DOORS №368 A, B, C, & D AND SIMILAR CONSTRUCTIONS

Write for Catalog A-69

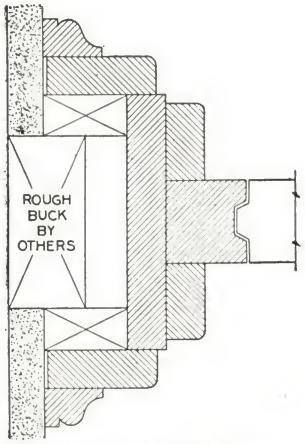
Fully automatic.
100% electric.
Soundproof.
No floor tracks.
Automatic sealing.
Automatic locking.

You turn the switch key—R-IV does the rest.

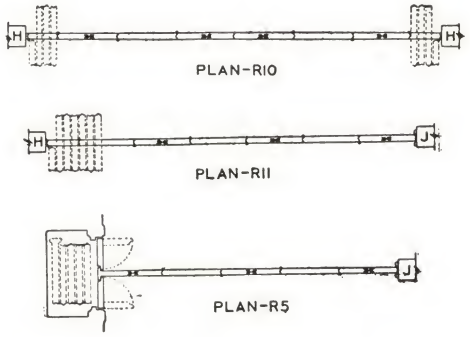
CLASSROOM TYPE — Manually Operated



№135 HEAD SECTION
SCALE 3"=1'-0"



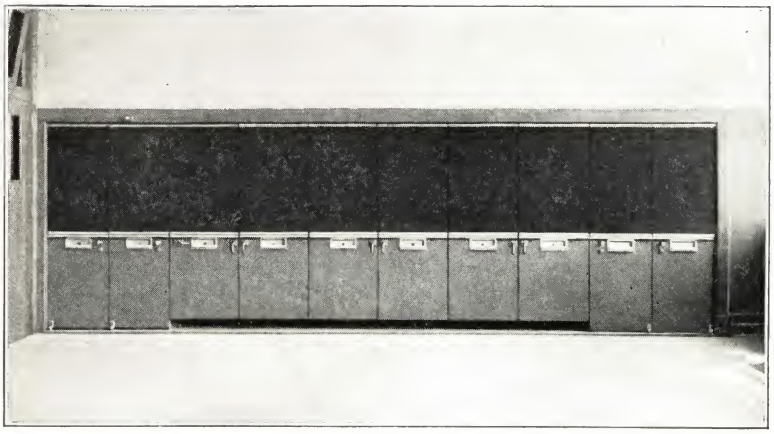
№135 JAMB DETAIL "H"
JAMB WIDTH AND DESIGN DETERMINED BY HEAD SECTION
SCALE 3"=1'-0"



Manually operated.
No floor tracks.
Soundproof when so specified.
All doors hinged together.
Easy, silent operation.

R-W SCHOOL WARDROBES

NO. 780 "PAIR-WAY" RECEDING DOOR WARDROBES



In the $3,500,000.00 Franklin K. Lane High School of Brooklyn, N. Y., 112 rooms are equipped with R-W No. 780 Wardrobes. Equipment consists of all steel wardrobes, including steel doors, steel trim, steel shelves, steel hat and coat racks; complete with pupil units, teachers' units and display cases. Full sized details furnished upon request.

SPECIFICATIONS

Wood Wardrobes

Type—The pupils' wardrobes shall be R-W No. 780 "PaiR-Way" type as manufactured, installed, and guaranteed by the RICHARDS-WILCOX MANUFACTURING CO.

Operating Hardware—Each door shall operate independently on a single heavy duty ball bearing pivot arm of the full-adjustment, offset unit type extending from the top of the wardrobe to the floor. All weight shall be carried on the floor and the construction of the pivot arm shall be such as to hold the doors rigid and in perfect alignment. Each door shall be provided at the top with a silent guide operating in steel track. No mullions, divisions, or floor tracks shall be used.

Hardware Finish—All interior operating hardware shall be furnished in dead black baked enamel (or bronze, or as specified). Exposed hardware, such as bow handles, latches, etc., shall be solid bronze. Connecting shaft shall be finished enamel.

Latches—***(Optional)***—Each pupils' wardrobe door shall be provided with a heavy duty latch which shall prevent vibration or deflection when the doors are closed.

Multiple Locks—***(Optional)***—The complete wardrobe shall include a multiple lock which shall provide simultaneous locking and unlocking of all doors in the recess, and which shall be controlled by handle and key from the left-hand door.

Doors—The doors shall be 2-panel, 1⅜ in. thick (or 3-ply, flush, 1¾ in. thick) veneered with ..... (state kind of wood).

Jambs—Head and side jambs shall be of wood (or steel) as detailed. Exterior casings to be furnished by others.

Interiors—Interior equipment shall include standard hat and coat racks with shelves and hook strips as detailed, complete with double prong hooks and shelf brackets. (Box type racks with coat hangers may be substituted if so specified.)

Blackboards—***(Optional)***—The installation shall include full width natural slate blackboards ¼ in. thick with felt backing, complete with metal chalk troughs and Z-bar supports.

Umbrella Racks and Pans—***(Optional)***—Include one umbrella rack and pan for each 2-door pupils' unit and each teacher's wardrobe. Finish to be .....

Teacher's Wardrobe—***(Optional)***—The recess shall be provided with a single door teacher's wardrobe complete with wood division, hinges and lock.

Bookcase or Supply Cabinet—***(Optional)***—The installation shall include a bookcase complete with lock, wood division, and five shelves as detailed.

Guarantee—Upon completion of installation, the RICHARDS-WILCOX MANUFACTURING CO. shall furnish its written guarantee covering satisfactory workmanship, materials, and installation.

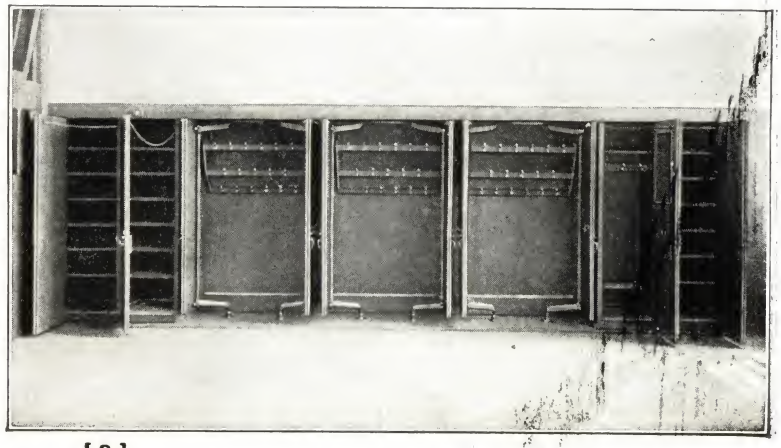
Work by Others—All plastering, grounds, rough bucks, baseboards, vent grilles, and filling, staining, and painting shall be by others in accordance with R-W standard details approved by the architect.

Steel Wardrobes

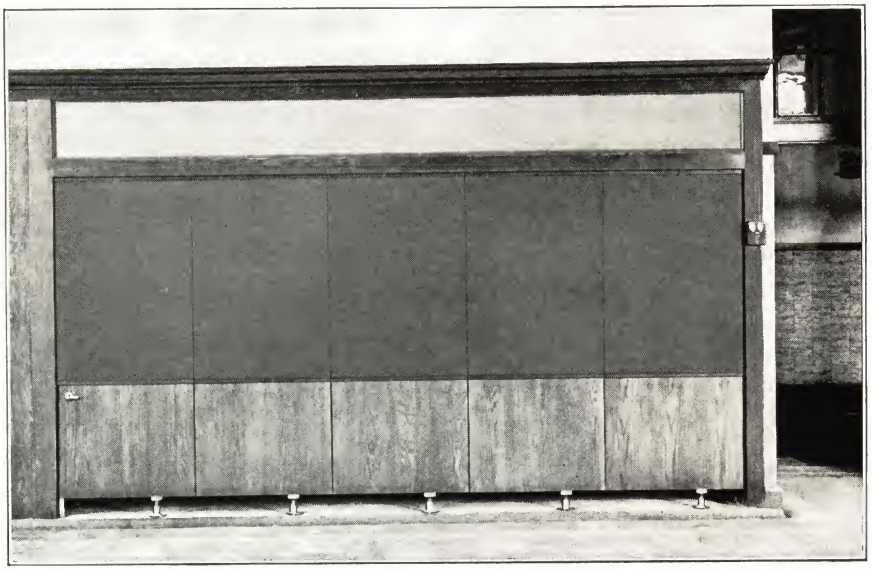
All the above specifications for Wood Wardrobes apply also to Steel Wardrobes with exception of the two paragraphs entitled "Doors" and "Jambs" which should be replaced by the following:

Steel Doors—Shall be flush, 1⅜ in. thick reinforced and insulated, to be absolutely rigid and noiseless; furnished with two coats of baked enamel.

Steel Jambs—Head and side jambs with cross bracing shall be of steel as detailed and specified on R-W standard drawings. Exterior wood casings to be furnished by others.



MULTIPLE OPERATION WARDROBES



As the master door in multiple operation wardrobes is opened or closed, all other doors in the recess open or close simultaneously. When the doors are closed and latched, they are securely and rigidly held in perfect alignment.

Full sized details furnished upon request

SPECIFICATIONS

Wood Wardrobes

Type—The pupils' wardrobes shall be R-W Multiple Operation type as manufactured, installed, and guaranteed by RICHARDS-WILCOX MANUFACTURING CO.

Operating Hardware—Each pupils' wardrobe shall be equipped with the R-W multiple operating mechanism and solid bronze master door control latch. As the master door is opened or closed, all other doors in the recess shall open or close simultaneously. When the doors are closed and latched, they shall be securely and rigidly held in perfect alignment. Operating hardware shall include necessary top pivots and adjustable floor pivots.

Locks—*(Optional)*—All pupils' wardrobes shall be locked in their closed position by a single lock located on the master door.

Doors—The doors shall be 2-panel, 1⅜ in. thick (or 3-ply, flush, 1¾ in. thick) veneered with ..... (state kind of wood).

Jambs—Head and side jambs shall be of wood (or steel) as detailed. Exterior casings to be furnished by others.

Interiors—Interior equipment shall include standard hat and coat racks with shelves and hook strips as detailed, complete with double prong hooks and shelf brackets.

Blackboards—*(Optional)*—The installation shall include full width natural slate blackboards ¼ in. thick with felt backing, complete with metal chalk troughs and Z-bar supports.

Umbrella Racks and Pans—*(Optional)*—Include one umbrella rack and pan for each pupils' wardrobe door and each teacher's wardrobe. Finish to be .....

Teacher's Wardrobe—*(Optional)*—The recess shall be provided with a single door teacher's wardrobe complete with wood division, hinges, and lock.

Bookcase and Supply Cabinet—*(Optional)*—The installation shall include a bookcase complete with lock, wood division, and five shelves as detailed.

Guarantee—Upon completion of installation, the RICHARDS-WILCOX MANUFACTURING CO. shall furnish its written guarantee covering satisfactory workmanship, materials, and installation.

Work by Others—All plastering, grounds, rough bucks, baseboards, vent grilles, and filling, staining, and painting shall be by others in accordance with R-W standard details approved by the architect.



Steel Wardrobe

All the above specifications for Wood Wardrobes apply also to Steel Wardrobes with exception of the two paragraphs entitled "Doors" and "Jambs" which should be replaced by the following:

Steel Doors—Shall be flush, 1⅜ in. thick reinforced and insulated, to be absolutely rigid and noiseless; furnished with two coats of baked enamel.

Steel Jambs—Head and side jambs with cross bracing shall be of steel as detailed and specified on R-W standard drawings. Exterior wood casings to be furnished by others.

ESTABLISHED 1856

SWEDISH VENETIAN BLIND CORPORATION

Manufacturers of Rolling Wood Partitions

TELEPHONE
PAlisades 6-6244

949 Dell Avenue
NORTH BERGEN, N. J.

For Our Page on Swedish Venetian Blinds, see File Index

HORIZONTAL AND VERTICAL ROLLING WOOD PARTITIONS

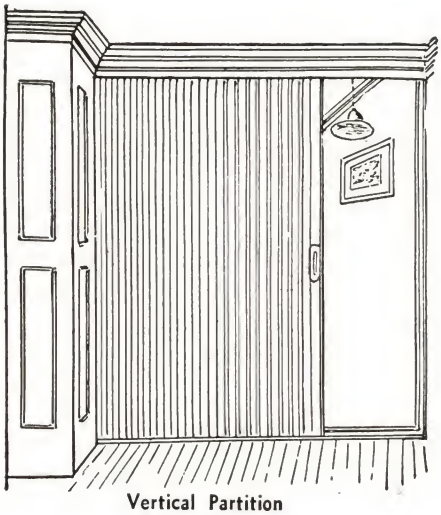
For All Purposes Where Room Division Is Necessary
Schools, Churches, Clubrooms, Factories, Residences, etc.



Horizontal Wood Partition Installed in an Assembly Room



Section Through Slats



Vertical Partition

For all purposes where room division is necessary; schools, churches, clubrooms, factories, residences, etc. By their use, convenient, economical floor arrangement can be obtained. They dispense with folding and accordion doors.

Made of the best wood obtainable. Slats are 1¾x½ in. and have non-friction joints connected by metal straps.

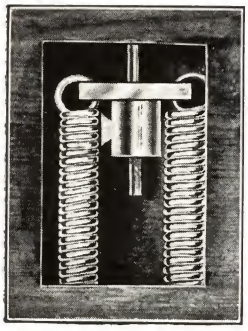
Improved ball bearing coiling device insures ease of operation and noiselessness. Furnished in any finish desired.

Openings of any width can be closed with one or more partitions. Single partitions should not be over 12 ft. wide.

Detail drawings furnished on request.

DIMENSIONS OF ROLLING WOOD PARTITIONS

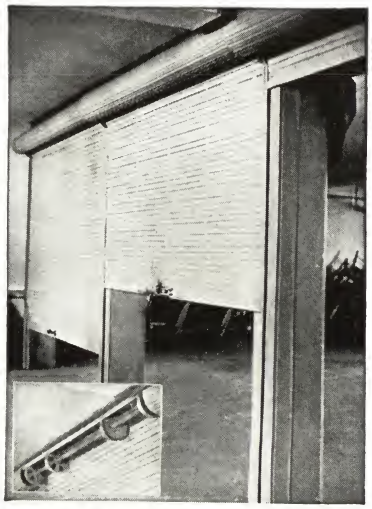
Height, including coil, ft.	Inside of coil box, in. square	Height, including coil, ft.	Inside of coil box, in. square
6	12½	14	14½
8	12	16	15
10	13	18	15½
12	14	20	16



Spring in Bottom Bar



Rolling Wood Partitions on Two Floors in a Gymnasium



Several Sections of Rolling Wood Partitions

For openings wider than 12 ft., guides used between partitions may be removed after partition is coiled away. Inset shows spring roller which operates partitions

SECTION 20

CONTINUED ⟶

MEMORANDA

MIDDLETON METAL PRODUCTS CO.

HOSPITAL DIVISION

101 Park Avenue, NEW YORK, N. Y.

BOSTON OFFICE: The Construction Supply Co., 6 Park Street PITTSBURGH OFFICE: William G. Dubin, 1302 Clark Building
NEW ORLEANS OFFICE: Nachary Builders Supply Co., Inc., 318 Carondelet Street

MIDDLETON CURTAIN CUBICLES

A modern development in bedside screening designed for privacy, economy, maximum efficiency and convenience. Leading architects and hospital consultants specify and use Middleton Curtain Cubicle Screening Equipment in wards, private rooms, semi-private rooms, dental and surgical units, shower and bathtub enclosures and for many other purposes.

Suspended from ceiling by means of tubular hanger rods, the equipment is so constructed as to allow the curtain to pass freely all points of support along tubular track, resulting in immediate and complete privacy without gaps or other visibilities. This modern method allows maximum light and ventilation, and when not in use, curtains can be folded against walls, leaving rooms free and clear of curtain obstruction.

One of the improved features of the Middleton Curtain Cubicle Screening Equipment is the *threaded connection* of the tubular tracks; designed to eliminate drilling and tapping in field and thereby afford easy and rapid installation without the use of special tools or specially trained labor. Any carpenter or handy man can install Middleton Curtain Cubicles and can just as easily dismantle them for installation in new locations with little or no alterations.

SERVICE TO ARCHITECTS

Middleton's experienced staff of engineers and draftsmen are always at your service, to co-operate with, and assist you in solving your screening problems, without any charge or obligation to you. Usually a rough sketch of the room or rooms, showing wall lines, windows, doors and layout of beds is all that is needed.

When we are required to install this material, it is done systematically, with a maximum of speed, diligence and care, and a minimum of disturbance and inconvenience to premises, patients and personnel; thereby permitting the usual activities in the occupied rooms to proceed in normal manner. When installation is to be done by others, we furnish simple instructions together with labeled layout drawings. All material is marked to correspond with these drawings.

SUGGESTED SPECIFICATIONS

Scope—Work contemplated under this specification shall include all material, labor, equipment and services necessary for, and reasonably incidental to, the installation of Middleton Curtain Cubicles as manufactured by the Middleton Metal Products Co., 101 Park Avenue, New York, as shown on drawings and/or herein specified.

Curtain Track—Tubing shall be of seamless new drawn brass, 1-in. outside diameter by 14 B&S gauge, chromium plated over polished nickel. Track is to be installed 7 ft. 3 in. above the finished floor line unless otherwise called for in the plans and specifications, or as required by the physical conditions of the building.

Bends—All bends in curtain tracks are to be machine made to insure uniformity and are to be fabricated and shipped as separate and distinct members. Bends shall have a 5-in. radius with the tubing extending 4 in. beyond the spring line at either end. Both ends of bends are to be threaded inside and are to have solid brass threaded nipples inserted therein for connection to tracks, which shall have corresponding inner threads—*producing a hairline joint with no visible connections, such as screws, rivets, etc.*

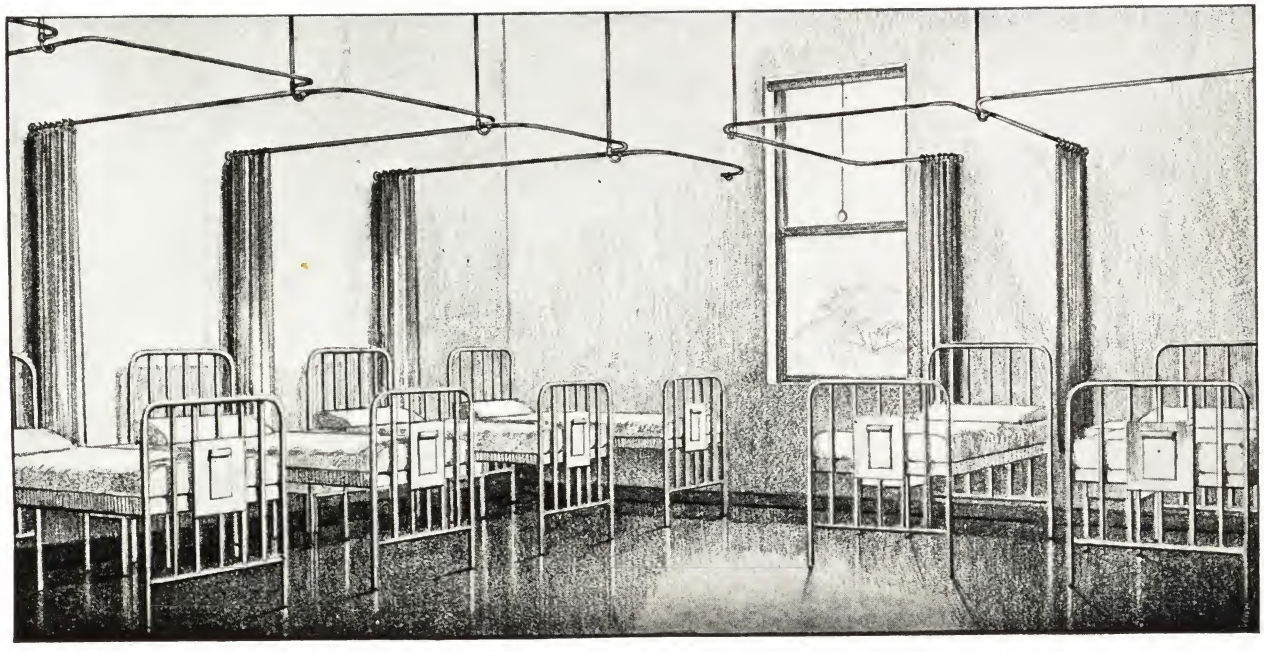
Hanger Rods—Hanger rods shall be of the same material and finish as specified for curtain tracks. Length of rods shall be governed by the distance between track and finished ceiling line.

Hardware—All fittings shall be of heavy cast brass, tooled out accurately on a lathe, to take exactly the outside diameter of the 1-in. tubing. All fittings shall be smoothly buffed and finely chromium plated over polished nickel. All screws and bolts forming a part of the equipment shall be oval headed with corresponding holes neatly countersunk. Wall and ceiling sockets shall be firmly attached to such walls and ceilings by means of toggle or expansion bolts or other suitable means.

Fibre Wheel Roller Bearing Curtain Hooks—Hooks shall be chromium plated brass, with compressed fibre wheels treated in a paraffin wax solution, *rendering them moisture repellent, to prevent swelling or flattening, thereby keeping their shape and noiseless qualities under any atmospheric conditions.*

Curtains—Curtains shall be of shadow-proof (Jean Cloth), (Twill Cloth), (Duck) in colors as selected and approved. All curtains shall be pre-shrunk equivalent to method prescribed in U. S. Navy Specifications. Cloth shall be Indanthrene dyed, and guaranteed sunproof and tubfast. Curtains shall have wide hems with specially constructed white metal grommets with rolled edges machined into the top hem 6 in. on centers. Grommets shall be so fabricated and machined as to prevent stain or pull out of the curtain. All curtains shall be at least 10% wider than the length of the tracks upon which they are used *so that there will be ample fullness to insure enclosure without gaps.*

Special Note: It is recommended that curtains be ordered in quantities one-third greater than is actually required, for replacement while laundering.



ACORN WIRE AND IRON WORKS

5906 Lowe Avenue, CHICAGO, ILL.

Products

Manufacturers of Acorn Wire Mesh Enclosure Panels; Cages for Banks and Offices; Wire Mesh Window Guards; Collapsible Folding Gates; Sani-robe Coat and Hat Racks.

Also manufacturers of Skylight Guards, Machinery Guards; Elevator Enclosures; Wire Signs; and Miscellaneous Wire Mesh Work. Complete catalogue sent on request.

NO. 130 ACORN WIRE MESH ENCLOSURE PANELS

Description

There is a difference between Acorn Standardized Enclosure Panels and just wire mesh partition.

No. 130 Acorn Enclosure Panels are built in standardized units. Each section or door is a complete unit and is interchangeable with every other unit. Additional units to match may be ordered at any time. The installation may be rearranged at any time by unskilled labor.

Architects who definitely specify the type and quality of partitions desired will relieve their clients of the burden of purchasing them later, which, for want of knowledge is usually done in a promiscuous manner.

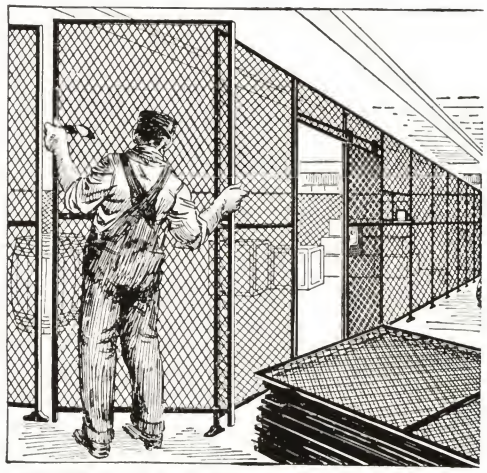
Construction and Specification Data—Architects may specify Acorn Standard Enclosure Panels by number, indicating type of doors and service windows desired.

Height—7, 8, 9 and 10 ft. carried in stock; other heights to order.

Width of Panels—Standard panels are 5 ft. wide. Special widths furnished.

Door Sections—Standard door sections are 3 ft., 3 ft. 6 in., and 4 ft. wide, and of height to match partition. Special widths when necessary. Doors are 6 ft. 6 in. high with transom panel overhead. Sliding doors up to 4 ft. wide. Self-closing without extra cost.

Wire and Mesh—No. 10 (⅛ in.) steel wire, 1½-in. diamond mesh. Entire web in one piece with wires passing through center stiffening bar; no unnecessary joints.



No. 130 Acorn Unit Wire Mesh Enclosure Panels

Framing and Stiffening Bar—Framing, 1-in. steel channel. Center stiffening bar, 1x⅜-in. steel channel securely riveted to frame.

Capping or Top Stiffening Bar—2x½-in. steel channel fastened to panels with U bolts, greatly simplifies installation.

Corner Posts—1x1-in. steel angle with floor socket. This permits the making of corner at any intersection.

Cut-outs and Special Panels—Cut-outs, or special size or shape panels furnished to meet special conditions.

Bracing—While capping or top stiffening bars will carry a reasonably long run of partition, simple methods of bracing can be arranged.

General Hardware—All hardware that is subject to strain is made of malleable iron or wrought steel to prevent breaking. The balance of soft gray iron.

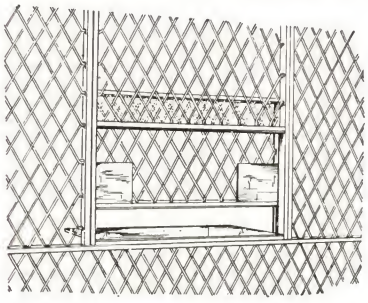
Locks—Heavy bronze locks, operated with cylinder from outside and recessed knob from inside. Master-keyed locks at slight additional cost. Doors equipped with a hasp for padlock may be had at a lower cost.

Hangers—All sliding doors equipped with ball bearing hangers.

Floor Sockets—2½-in. high to allow for uneven floor adjustment.

Paint—Standard factory green. Special colors may be had at slight additional cost.

Installation—Many original and exclusive features make Acorn Partitions extremely easy to erect. No experience or special skill is necessary. Diagram and complete setting instructions sent with each order.



No. 136
Acorn Lift-up Service Window, with or Without Shelf

Standard size 24x15 in. Very practical and popular type of service window. Locked with spring catches in closed and open positions. Standard shelf 24x12 in. Unless shelf is specified window will be furnished without shelf

Acorn Heavy Duty Wire Mesh Enclosure Panels

Where a super-strength Enclosure is desired we recommend the following specification:

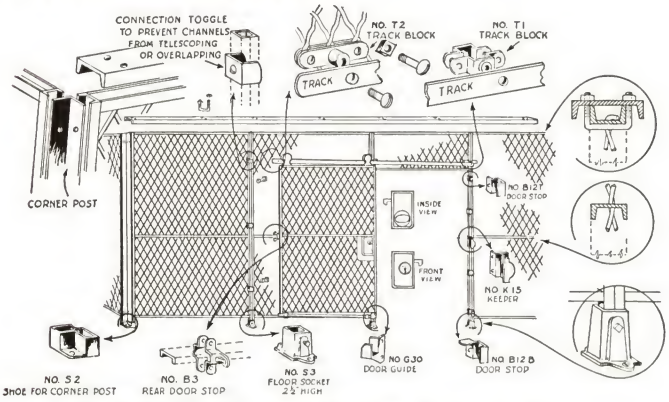
No. 6 W. & M. Ga. (.192) steel wire, 2-in. diamond mesh. Entire web in one piece with wires passing through center bar. Frame and center bar of 1½-in. x ¾-in. steel channel.

Capping Bar of 3-in. x 1⅜-in. steel channel.

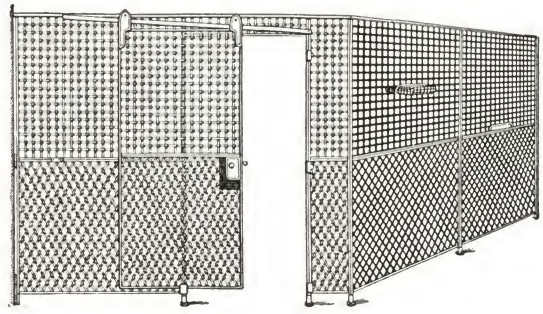
Intermediate Posts of 2½-in. x ⅜-in. flat at all panel intersections.

Corner Posts 1½-in. angle.

General Hardware and Accessories similar to that of No. 130 Partition.



Details of No. 130 Acorn Enclosure Panels and Doors



Design No. 142 Bank and Office Cages

Upper portion usually made of flat or square wire, square mesh. Lower portion of round wire, diamond mesh.

Send for complete catalog showing Bank and Office Cages

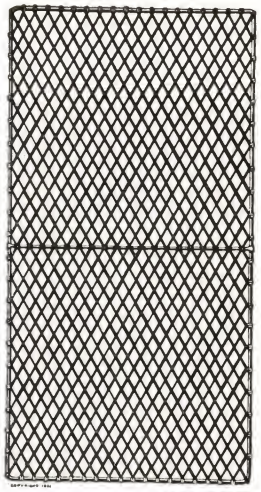
WINDOW GUARDS

Acorn Wire Mesh Window Guards

They protect glass against breakage and prevent entrance by stealth. They also prevent dishonest employees from passing valuable tools, etc., through the windows to confederates outside. They permit the windows to be opened for ventilation with safety. Send for catalogue.

Material Specifications—Made of three principal specifications: 1¼-in. mesh, No. 12 wire; 1½-in. mesh, No. 10 wire, and 2-in. mesh, No. 8 wire. No. 10 wire, 1½-in. mesh is most used, being the meeting point between burglary and glass protection. Guards can be furnished in any wire desired.

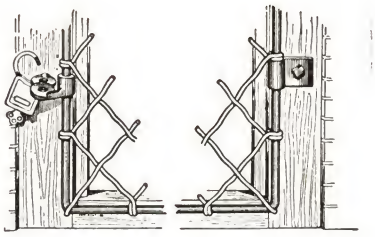
H-5 hinges and H-6 hasps, of malleable iron, are recommended. They afford an excellent means of fastening and are adaptable to any style window frame by reversing same where necessary. Hinges are fastened to window by lag screws making it difficult to remove from outside. Hasps are locked to a heavy screw-eye which can not be removed when padlock is in place.

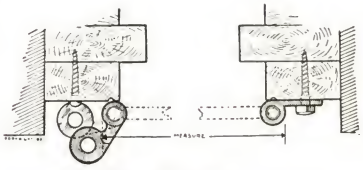


No. 121 Window Guard

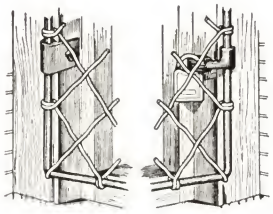
Methods of Installing—Where guards are used principally for burglar protection, hinged Type "A" is recommended. The hinges are fastened to window frame by means of lag screws, making it difficult to remove from outside.

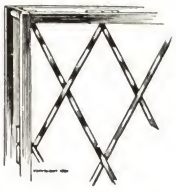
When burglar protection is not an important factor, and when it is desirable to attach the guards from outside, hinged Type "B" is recommended. In this case the lag screws are exposed to the outside.





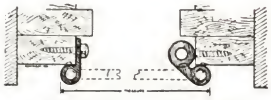
Hinged Type B





No. 122 Window Guard

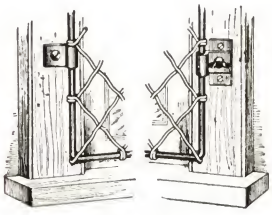
Channel frame varying from ¾ to 1 in. wide. These are satisfactory when designed to fit into opening, but are not recommended when outer grooved edge is exposed to view

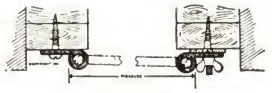


H5 Hinge H6 Hasp

No. 121 Window Guard Hinged, Type A

Round steel frame of $\frac{5}{16}$ or ⅜-in. diameter according to size of guard. Also made in stationary type





Type K

A popular type for protecting Gymnasium Windows or other windows where inside protection is desired.

Type "K" Hinged Guards are fastened on one side with H5 Hinges, and other side is held in place with thumb nuts.

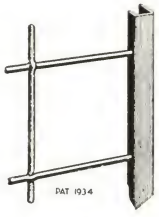
ACORN
welded weave

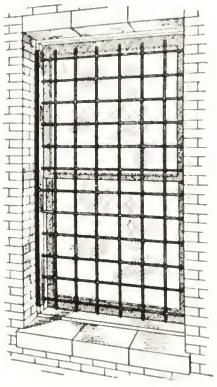
A new and better, yet inexpensive type window grille, designed for homes, public buildings, commercial buildings, etc.

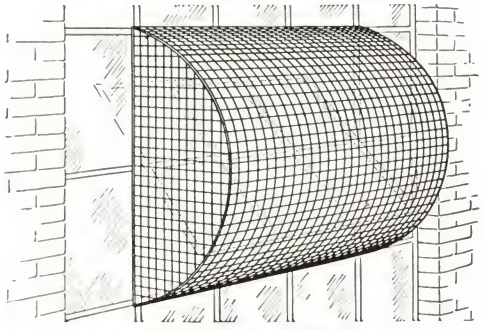
Welded-Weave is made from ⅜-in. round cold drawn steel, interwoven and electrically welded into a solid unit.

These grilles are a combination of beauty and strength, interposing a strong network of steel against any attempted forced entrance.

Welded-Weave is generally made in 4, 5, 6, and 7-in. spacings, but may be had in other spacings, either square or oblong openings, to suit architects' requirements.







No. 120 Window Guard



Fig. 3

Acorn Pivot Sash Window Guards

Allow ventilation with protection against burglary or passing valuable articles out of windows. They also protect glass against breakage.

We are prepared to furnish guards to suit all conditions.

No. 120 Guard is used where glass protection is not essential.

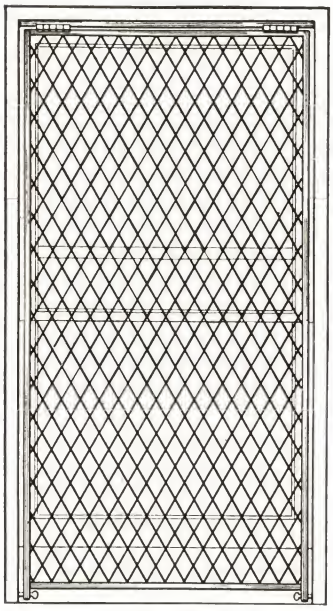
Larger Guards, like those shown in Fig. 3, should be framed with 1-in. channel, while smaller Guards, as shown in Fig. 4, may be framed with ⅜-in. round rod steel. (The round rod framing is less costly.)

For material specifications and suggestions see top left hand corner this page.

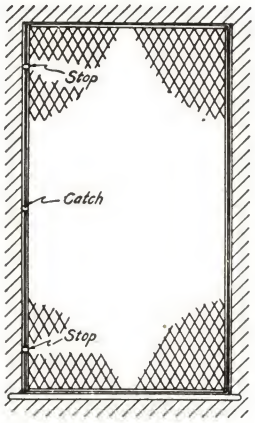


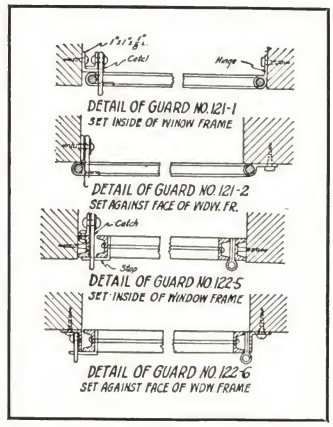
Fig. 4

ACORN GYMNASIUM WINDOW GUARDS



No. 128

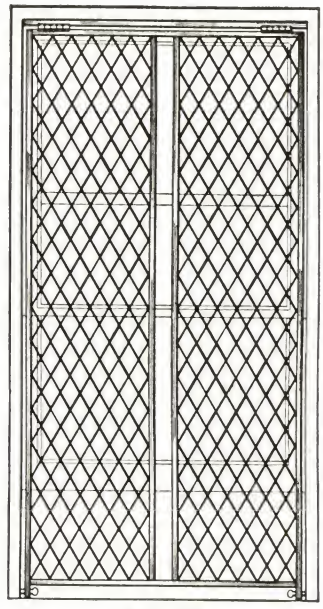




No. 121-1 and 2 and 122-5 and 6 Gymnasium Window Guards Can be applied to practically every type window frame. Lock catches can be operated with a window pole.

No. 128 Gymnasium Window Guard—Hinged at top. Because of its ease of operation the window pole slot is not definitely required. Available for single or multiple windows.

No. 127 Gymnasium Window Guard—Same as No. 128 except it has a window pole slot. Recommended where small additional cost is not objectionable.
Available for single or multiple wnidows.



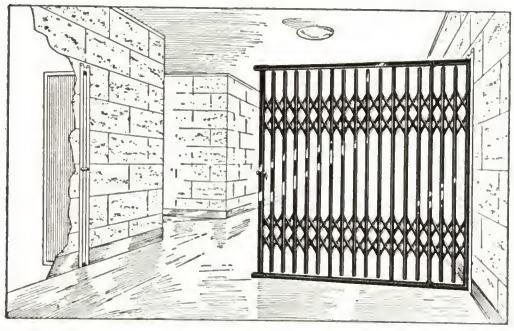
No. 127

ACORN ROLLER BEARING COLLAPSIBLE FOLDING GATES

Methods of Hanging Gates—Gates may be hung from walls, deep or shallow steel pockets, or from wood cabinets. (See page 4 for complete units.)

Acorn hinged top and bottom tracks are of the enclosed type and form an integral part of the Gate. This prevents gates and tracks from becoming disconnected.

Cabinet doors cannot be closed while Gate is extended. For that reason the Gate itself may be used as the door when in collapsed position.



Typical View of Acorn Folding Gate Across Corridor of School Building

Material Specifications—Body of Gate ¾x⅜x⅛-in. steel channels, spaced approximately 6 in. on centers. End bars (and tracks), to be of enclosed type, formed of one piece to receive rollers.

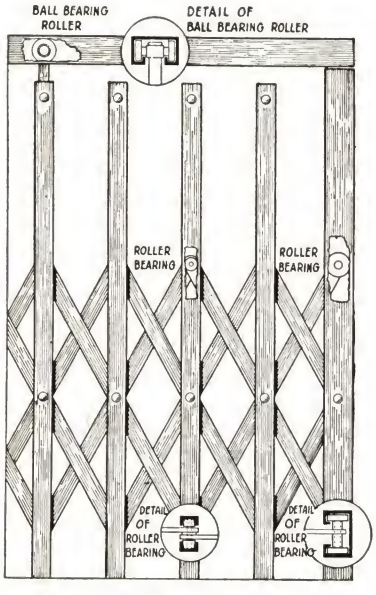
Lattice Bars (for No. 157 and No. 157A Gates) ⅝x$\frac{3}{16}$-in. steel. All travelling parts, including lattice bars, to be fitted with rollers. Brass separators at all rivetted parts.

Built-in Cylinder Locks.

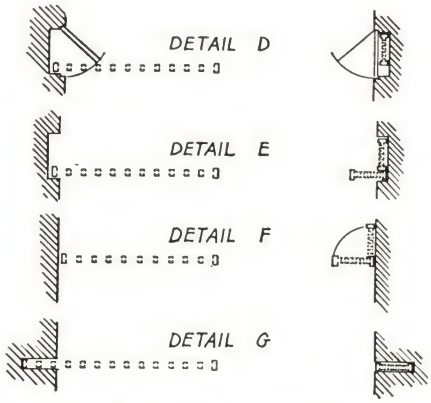
All Locks to be keyed alike.

Note 1—Keying to building system requires special fitting and is not recommended.

Note 2—No. 157 Gates have plain tops. No. 157A Gates have ornamental picket tops.



Sectional Detail



Methods of Hanging Acorn Folding Gates

Acorn Roller Bearing Folding Gates combine ease of operation, durability, and finished appearance—modern construction in every detail.



Indestructo Cylinder Lock
(Patented 1933)

The Acorn Indestructo Folding Gate Lock is an added safety feature which can now be obtained with Acorn Collapsible Folding Gates. It does away with the necessity of a padlock, eliminating the last undesirable feature. This lock is secure, practical, and economical. It is accessible by key from either side



Acorn Ornamental Picket Top for No. 157A Gates

These Pickets are cast of malleable iron to guard against breakage.

No. 157 Gates have plain tops.

No. 157A Gates have ornamental picket tops

ACORN *in-a-wall* FOLDING GATE UNITS

No. 157A—Fig. 61

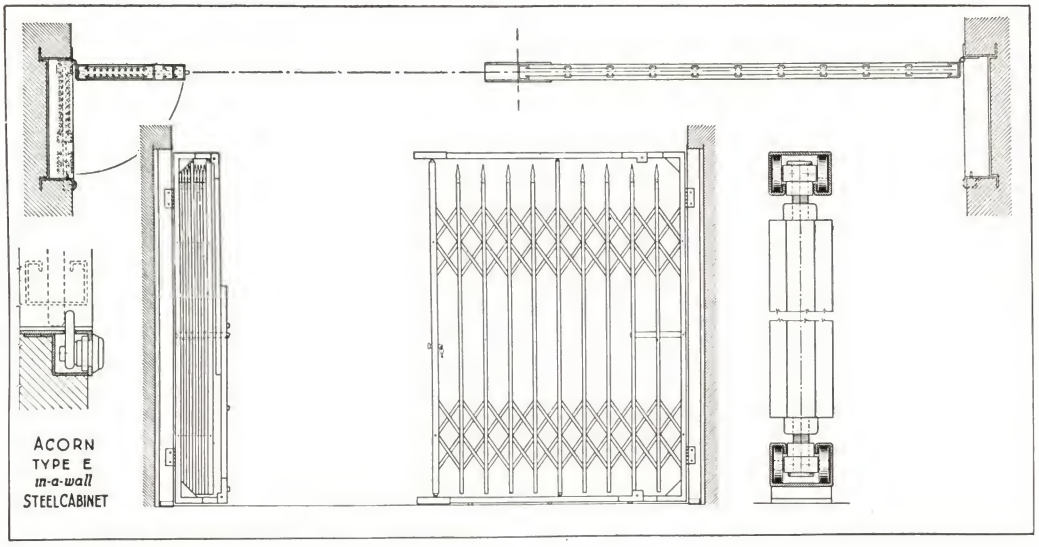
Acorn In-A-Wall Folding Gate Unit with Type E Steel Pocket—By arranging for these to be built in, wall projections are easily negotiated.

Top and bottom tracks add to the rigidity and ease of operation.

Cabinet doors cannot be closed while Gate is extended. For that reason the Gate itself may be used as the door when in collapsed position.

Complete setting diagram and instructions furnished with each unit.

See Page 3 for material specifications.



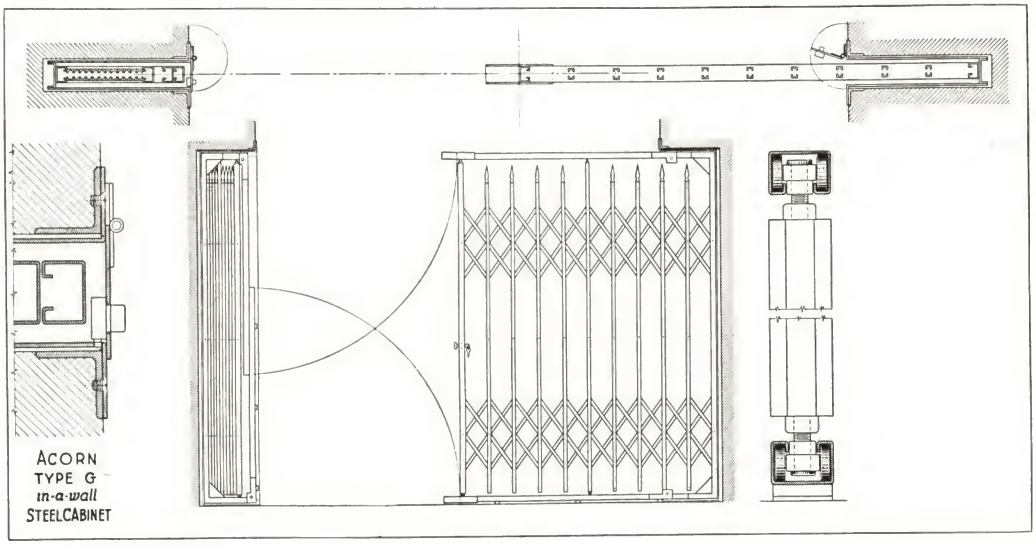
No. 157A—Fig. 62

Acorn In-A-Wall Folding Gate Unit with Type G Deep Cabinet and Top and Bottom Tracks—By arranging for these to be built in, wall projections are easily negotiated.

Type G Units are so arranged that they may be removed for painting.

Complete setting diagram and instructions furnished with each unit.

See Page 3 for material specifications.



No. 157A—Fig. 63

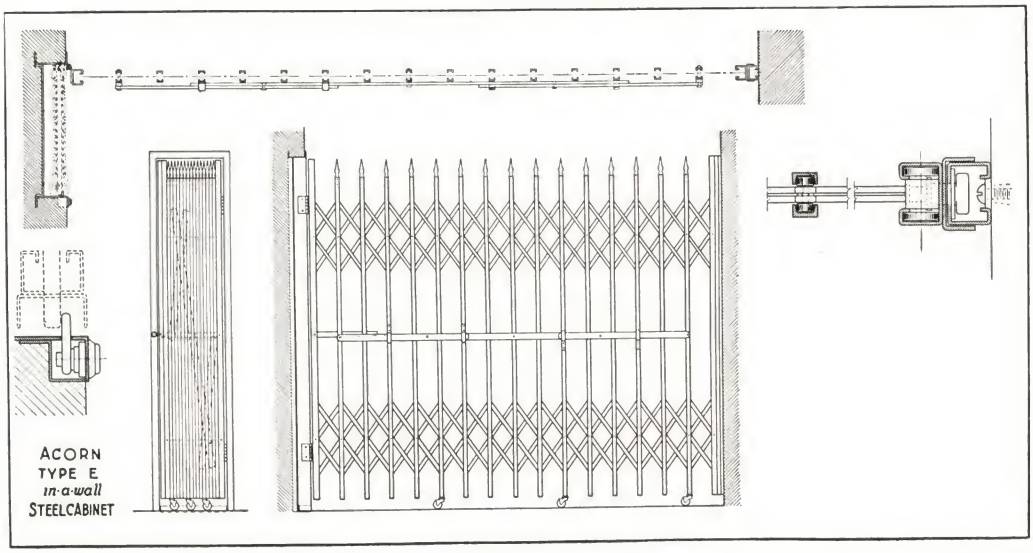
Acorn In-A-Wall Folding Gate Unit with Type E Steel Pocket and Jackknife Brace—This is an excellent arrangement where single gate is desired.

By arranging for these to be built in, wall projections are easily negotiated.

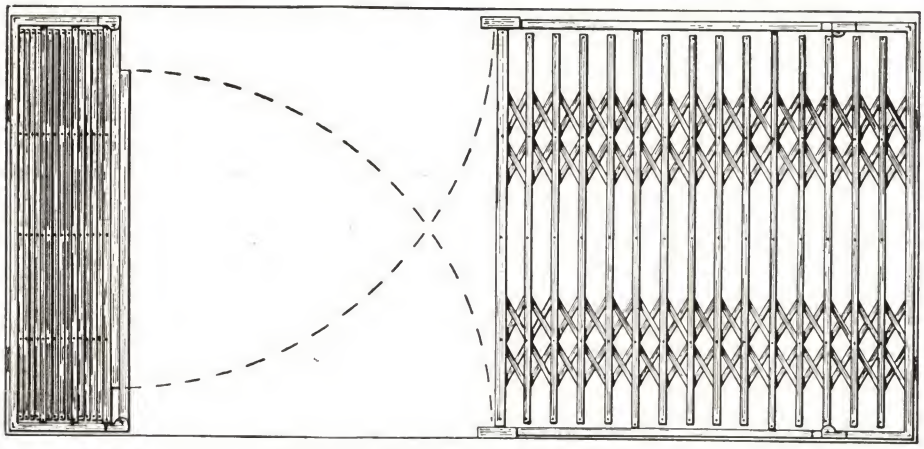
Cabinet doors cannot be closed while Gate is extended. For that reason the Gate itself may be used as the door when in collapsed position.

Complete setting diagram and instructions furnished with each unit.

See Page 3 for material specifications.

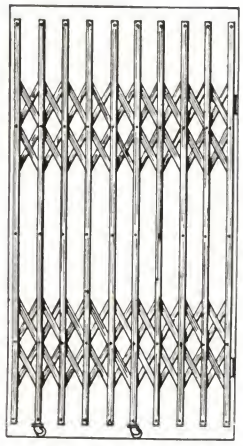


ACORN ROLLER BEARING COLLAPSIBLE FOLDING GATES



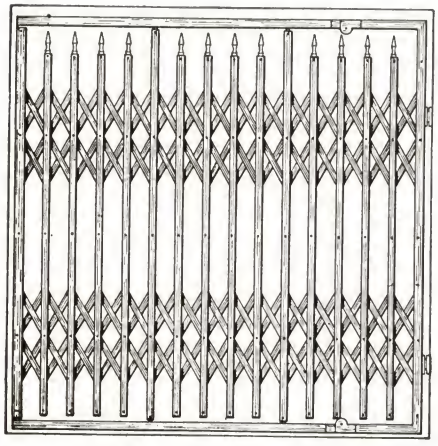
157 Folding Gate, Fig. 43—Double Type

Plain tops with hinged top and bottom stiffening tracks. Swings back when in collapsed position. State whether Indestructo Cylinder Lock or hasp for padlock is desired



157 Folding Gate Fig. 56—Single Type

State whether Indestructo Cylinder Lock or hasp for padlock is desired

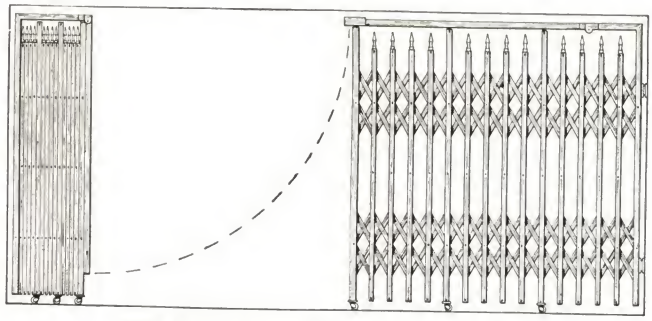


157A Gate, Fig. 44—Single Type

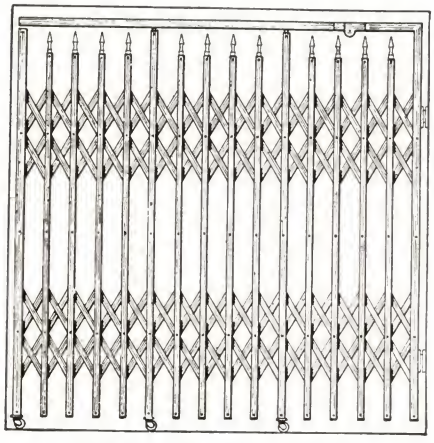
Ornamental picket tops with hinged top and bottom stiffening tracks. Swings back when in collapsed position. Gates must be of sufficient height to allow tracks to fold into position. State whether Indestructo Cylinder Lock or hasp for padlock is desired

157A—Fig. 53

Ornamental picket tops with hinged top stiffening track and rollers at bottom. Swings back when in collapsed position. State whether Indestructo Cylinder Lock or hasp for padlock is desired



157A Folding Gate, Fig. 53—Double Type

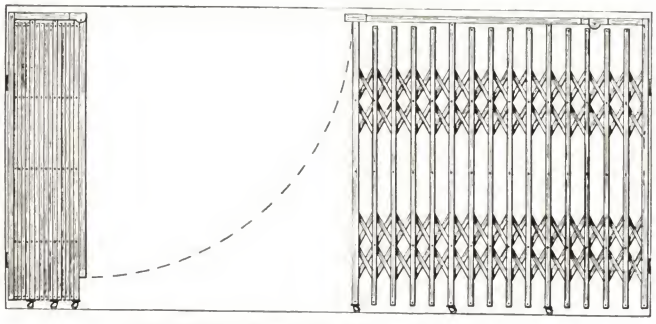


157A Gate, Fig. 45—Single Type

Ornamental picket tops with hinged top stiffening track and rollers at bottom. Swings back when in collapsed position. Gate must be of sufficient height to allow track to fold into position. State whether Indestructo Cylinder Lock or hasp for padlock is desired

157—Fig. 42

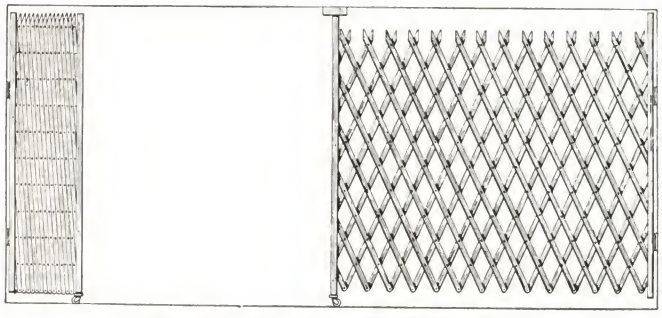
Plain tops with hinged top stiffening track and rollers at bottom. Swings back when in collapsed position. State whether Indestructo Cylinder Lock or hasp for padlock is desired



157 Folding Gate, Fig. 42—Double Type

156A—Fig. 41

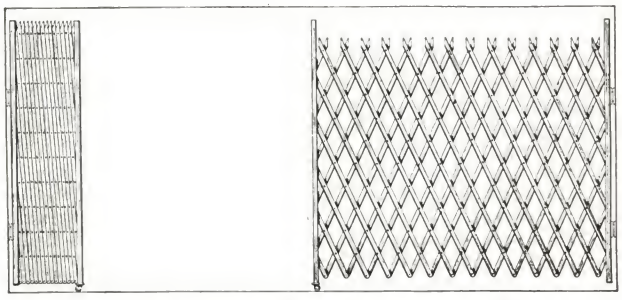
End bar extends to ceiling. *See Note A.* Swings back when in collapsed position. State whether Indestructo Cylinder Lock or hasp for padlock is desired



156A Folding Gate, Fig. 41—Double Type

Note A—Gate No. 156A drops approximately 1½ in. to each foot in height, when extended across opening. No. 156A denotes pointed tops. No. 156 should be specified if plain tops are desired.

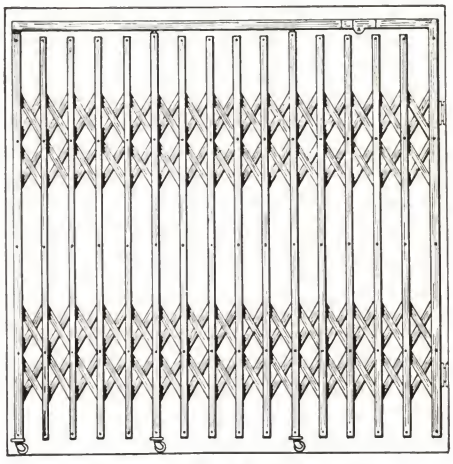
ACORN ROLLER BEARING COLLAPSIBLE FOLDING GATES



156A Folding Gate, Fig. 52—Double Type

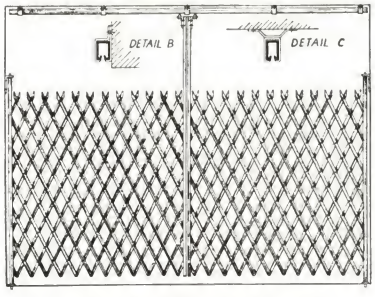
156A—Fig. 52

Swings back when in collapsed position. *See Note A, page 5.* State whether Indestructo Cylinder Lock or hasp for padlock is desired



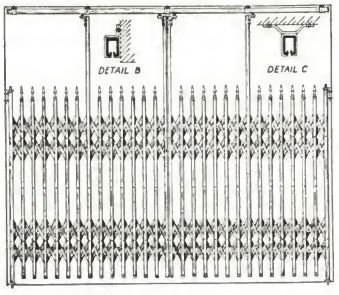
157 Gate, Fig. 47—Single Type

Plain tops with upper stiffening track and rollers at bottom. Swings back when in collapsed position. Gate must be of sufficient height to allow track to fold into position. State whether Indestructo Cylinder Lock or hasp for padlock is desired



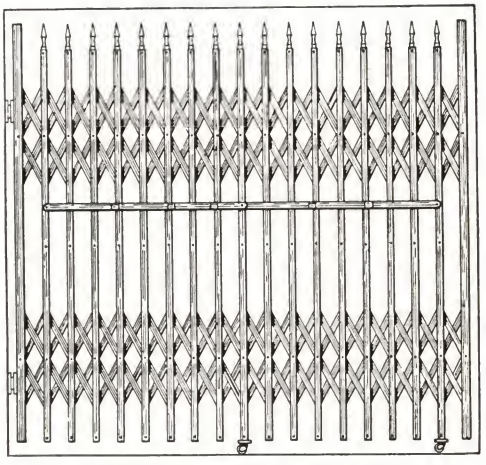
156A, Fig. 49—Double Type

Permanent overhead track. *See Note A, page 5.* Cannot swing back when in collapsed position. State whether Indestructo Cylinder Lock or hasp for padlock is desired



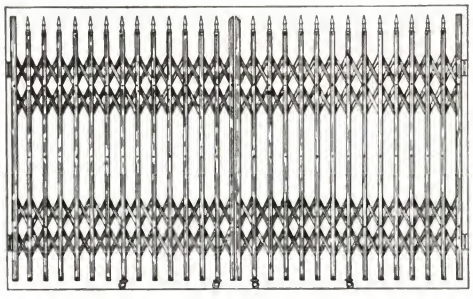
157A, Fig. 48—Double Type

Ornamental picket tops and permanent overhead track. Cannot swing back when in collapsed position. State whether Indestructo Cylinder Lock or hasp for padlock is desired



157A Gate, Fig. 50—Single Type

Ornamental picket tops and jackknife brace or stiffening bar. Swings back when in collapsed position. State whether Indestructo Cylinder Lock or hasp for padlock is desired

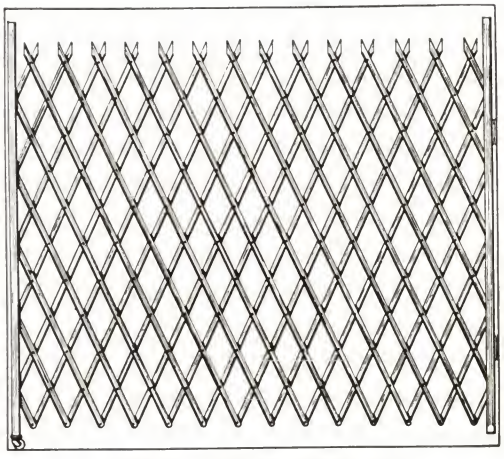


157A Gate, Fig. 55—Double Type

Ornamental picket tops with rollers at bottom. These gates will require some form of bracing at center. Swings back when in collapsed position. State whether Indestructo Cylinder Lock or hasp for padlock is desired

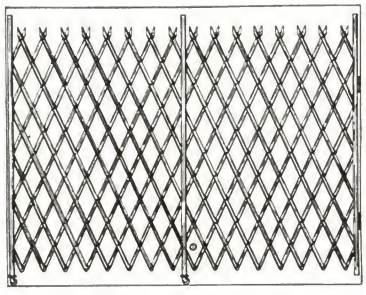
Service to Architects

Architects are invited to send for special blue prints or other detailed information regarding their Folding Gate problems. State conditions as fully as possible so that the most practical assistance may be rendered.



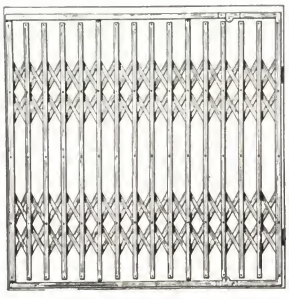
156A Gate, Fig. 54—Single Type

Swings back when in collapsed position. *See Note A, page 5.* State whether Indestructo Cylinder Lock or hasp for padlock is desired



156A, Fig. 51—Single Type

Vertical stiffening bar included. *See Note A, page 5.* Swings back when in collapsed position. State whether Indestructo Cylinder Lock or hasp for padlock is desired



157, Fig. 46—Single Type

Plain tops with top and bottom stiffening tracks. Swings back when in collapsed position. Gate must be of sufficient height to allow tracks to fold into position. State whether Indestructo Cylinder Lock or hasp for padlock is desired

THE CONSOLIDATED EXPANDED METAL COMPANIES

Steelcrete Expanded Metal for Partitions, Window Guards and Enclosures

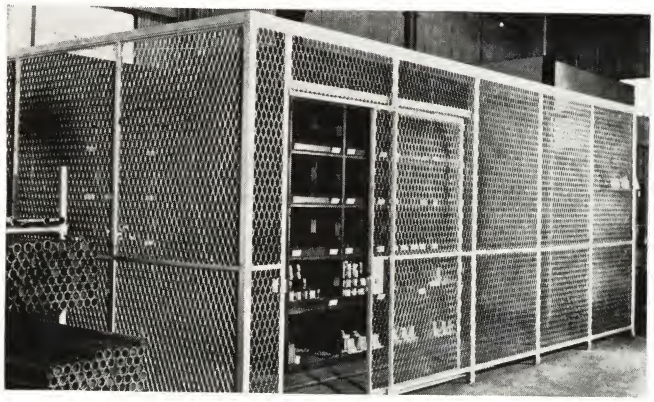
WHEELING, W. VA.

SALES OFFICES AND WAREHOUSES

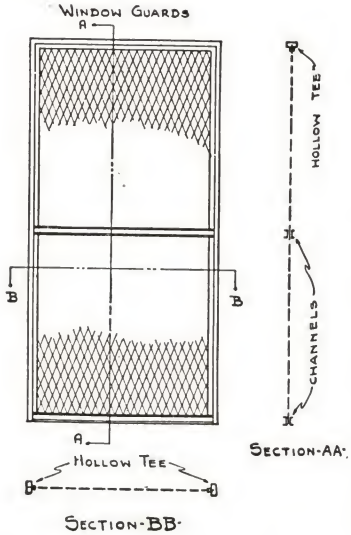
ATLANTA, GA. BOSTON, MASS. BUFFALO, N. Y. CHICAGO, ILL. CLEVELAND, OHIO DETROIT, MICH. HOUSTON, TEX. NEW YORK, N. Y. PHILADELPHIA, PA. PITTSBURGH, PA.

For Other Steelcrete Pages, see File Index

STEELCRETE PARTITIONS



Expanded metal partitions are one application of a material universal in its appeal from the standpoints of appearance, strength, security, cost and salvage value. With the complete line of accessories which we carry in stock, it is readily fabricated into panels, guards, trays, shelves and an infinite number of special applications.



Steelcrete

WINDOW GUARDS

Note full drainage through bottom member. Side members are open at bottom, and there is no possibility of trapping moisture at any point to cause corrosion. These guards are superior in appearance and the flat face of the hollow tee frame is ideal for the attachment of any type hinges or fastenings. The mesh is expanded from one solid piece of steel and cannot ravel or be pried apart at intersections.

Manufactured in hinged, lift-off and fixed types.

Ornamental Window Guards—Effective guards are made from our 3x8 in. expanded metal. This mesh is available in weights from ¼ lb. to over 3½ lbs. per sq. ft.

Note: This mesh is also ideal for reinforcing concrete and similar applications.

EXPANDED METAL FENCE



Expanded metal fence, furnished in a No. 6 and No. 9 special galvanized mesh, is the newest thing of its kind. Its points of superiority are so many we request that if at all interested in a fence that you send for our catalog.

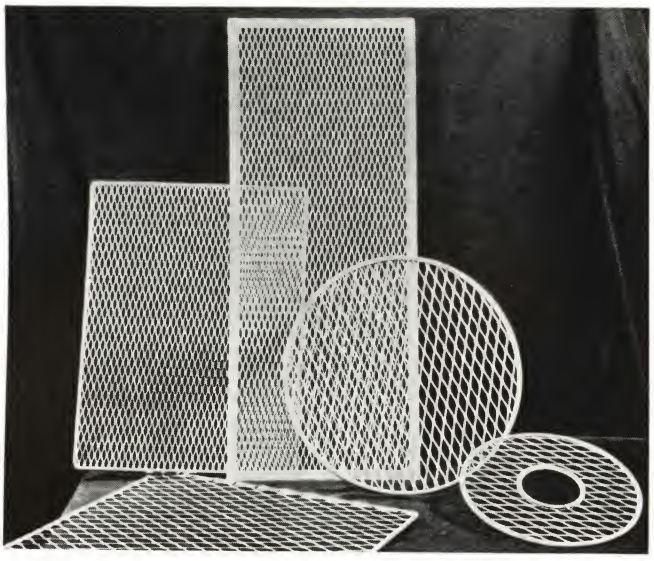
WALKWAY MESH



Walkway mesh—a new and improved walkway mesh is now available. It is superior in appearance and light in weight. The openings are now only 1 in. wide which makes it tool safe. The cost per square foot for either painted or galvanized is very low.

Linen Shelves—And similar items are made with our rolled edge construction using flattened mesh. The open mesh avoids dead air space and much less dust is precipitated from the atmosphere. These shelves are available in all styles of flattened mesh and are made to special sizes without extra cost. They are furnished painted, galvanized or tinned.

FLATTENED EXPANDED METAL



Flattened expanded metal is our latest improvement on our Safe-T Mesh, the strands being perfectly flat. This adaptation has opened an entirely new field. Here are a few ideal places for its use—

Machine guards	Trays for store equipment
Drying trays	Dipping baskets
Racks	Lawn guards
Conveyor trays	Grilles
Skids	Filters
Stair treads	Window displays
Store shelves	Refrigerator shelves
Linen shelves	Radiator guards
Animal cages	Porch and lawn furniture

STANDARD SAFETY MESHES

Normal width of opening	Actual dimension center to center, in.		Weight per sq. ft., lb.	Stock Sizes Width of sheet is short way of diamond
	Width	Length		
½"—No. 18	.46	1.2	.74	4'0" or 6'0" x 8'8"
½"—No. 16	.46	1.2	.81	4'0" x 8'0"
½"—No. 13	.46	1.2	1.46	6'6" x 8'0"
¾"—No. 16	.92	2.0	.50	6'6" x 8'0"
¾"—No. 13	.92	2.0	.80	4'0" or 6'0" x 8'0" also 6'0" x 10'0" or 12'0"
¾"—No. 10	.92	2.0	1.19	4'0" x 8'0"
¾"—No. 9	.92	2.0	1.80	4'0" x 8'0"
1½"—No. 18	1.34	3.0	.20	4'0" x 8'0"
1½"—No. 16	1.34	3.0	.40	4'0" x 8'0"
1½"—No. 13	1.34	3.0	.60	4'0" or 6'0" x 8'0"
1½"—No. 10	1.34	3.0	.79	4'0" or 6'0" x 8'0" or 12'0", also 6'0" x 10'0"
1½"—No. 9	1.34	3.0	1.19	4'0" or 6'0" x 8'0"
2" —No. 13	1.85	4.0	.47	4'0" x 8'0"
2" —No. 10	1.85	4.0	.67	4'0" x 8'0"
2" —No. 9	1.85	4.0	.90	4'0" x 8'0"
2½"—No. 9	2.4	6.0	.69	5'0" x 6'0", 8'0", 10'0" or 12'0"
2½"—No. 7	2.4	6.0	1.18	5'0" x 6'0", 8'0", 10'0" or 12'0"
Special	3.0	8.0	All weights	

FLATTENED EXPANDED METAL

Numbers shown thus, No. 18-20 indicate approximate gages before and after flattening.

All flattened meshes furnished in sheets 3'-0" x 8'-0" and 4'-0" x 8'-0".

Style	Weight per sq. ft., lb.
½"—18-20	.70
½"—16-18	1.00
½"—13-15	1.37
¾"—16-18	.61
¾"—14-16	.81
¾"— 9-11	1.69
1½"—16-18	.37
1½"—14-16	.48
1½"— 9-11	1.13

FRAMING MATERIAL

By use of the following specially designed framing materials the fabrication of partitions and window guards is simplified:

⅝" Round Flanged Frame Bar 10'-0" long

1¼" Hollow Tee 16 gage Partition Bar, 18'-0" long

1¼" Hollow Tee 14 gage Partition Bar, 20'-0" long

2" Hollow Tee 14 gage Jumbo Partition Bar, 20'-0" long

Complete catalog of accessories upon request.

KENTUCKY METAL PRODUCTS CO., INC.

Preston Street and Audubon Park, LOUISVILLE, KY.

PRODUCTS

Manufacturers of "Kentucky" Wire Partitions and Enclosures for industrial stockrooms, toolrooms, machine shops, shop divisions, etc. Cages for banks and offices; Bank Grilles, Bullet-proof Wire Work, Wire Panels, and Doors, Window Guards, Radiator Guards, Skylight Guards, Screen Door Grilles, Folding Gates and other Open Mesh Work. Furnished in any metal, finish or mesh. Write for Blue Book of Kentucky Open Mesh Products.

Complete Facilities for Bonderizing

KENTUCKY SECTIONAL WIRE MESH PARTITIONS

Kentucky Products are designed to meet the demands of the most artistic office or bank as well as the rough shop or factory, and are constructed to meet the approval of the leading architects of today. Wire work is very artistic as well as practical. Executives and architects are appreciating its value as an aid to increased efficiency as it makes interiors visible at all times. Open mesh partitions are a great aid to ventilation and heating.

Any Metal—Kentucky Wire Products can be made in steel, copper, brass, bronze, aluminum, stainless steel, etc.

Any Finish—Can be furnished in painted, enameled, lacquered, galvanized, or electro-plated.

Any Mesh—Square, diamond, rectangular or hexagonal.

Specification Data

Wire and Mesh—1½-in. diamond mesh, 10-gauge wire of best open hearth steel. Web of each panel in one piece with double channel stiffening bar at center.

Frame—1 x ½-in. standard channel.

Top Reinforcing Bar—1½ x ½-in. channel.

Floor Sockets—Cast iron, made to give adjustment for uneven floors.

Locks—Yale, Corbin, Sargent, etc.

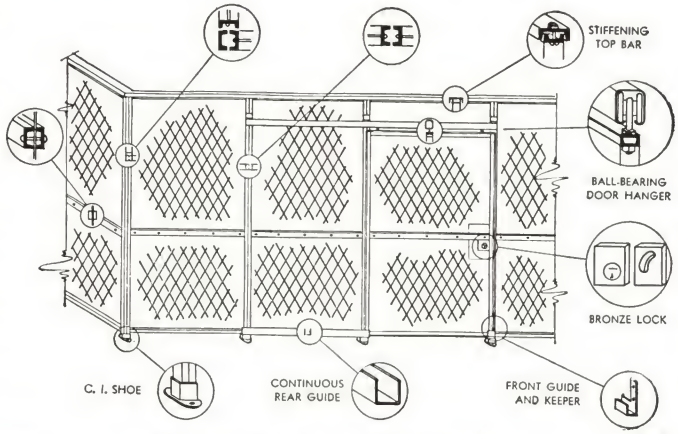
Windows—Sliding or hinged as required.

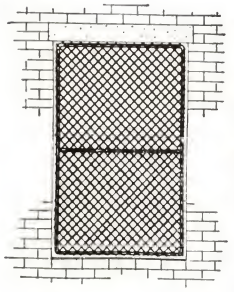
Hinged Doors—Size as required.

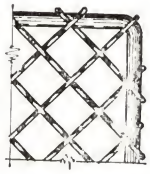
Sliding Doors—Made 2 ft. 6 in., 3 ft., 3 ft. 6 in., and 4 ft. wide. Ball bearing hangers.

Heights—7, 8, 9 and 10 ft., or as required.

Width—Of standard panels, 5 ft.





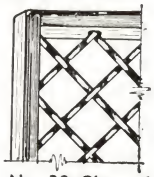


No. 20 Standard Round Frame Guard

Size of frame as specified

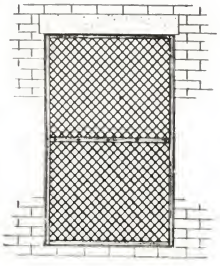
KENTUCKY WIRE GUARDS

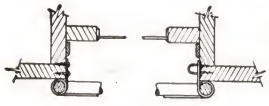
"Kentucky" Wire Guards are constructed for use over steel sash, wood sash or any type of window; glass openings of doors, skylights, etc. Also as safety guards for dangerous machinery. "Kentucky" guards are attractive and unusually durable, giving protection against theft, glass breakage, etc. Made in any mesh and wire size—either stationary or hinged type.



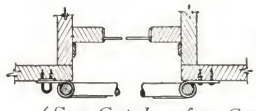
No. 30 Channel Frame Guard

Channel frame size as required. Cover bar provided on hinged panel when specified

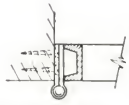




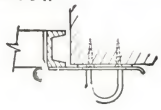
FITTING NO. 1



FITTING NO. 2



FITTING "B"

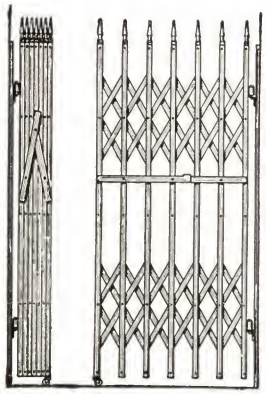


FITTING "C"

(See Catalog for Complete List of Fittings)

STANDARD FOLDING GATES

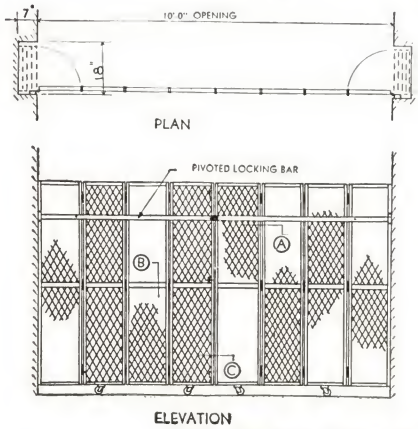
Manufactured from highest grade materials—steel, bronze or aluminum and finished to specification
(See Catalog for Other Illustrations)

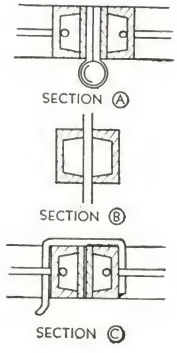


No. 175-A Steel Folding Gate

Made either single or double. Ornamental picket tops. Jack-knife bar brace near center. Swings back when in folded position.

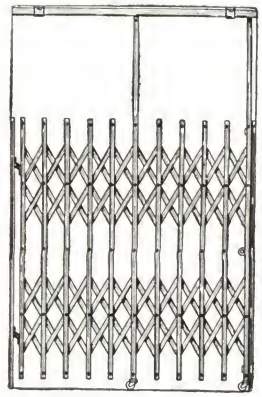
No. 175 without pickets





No. 160 Wire Folding Gate

Used for closing corridors or entrances to buildings. May be folded against walls or into wall pockets. Pivoted locking bar reinforces gates when closed



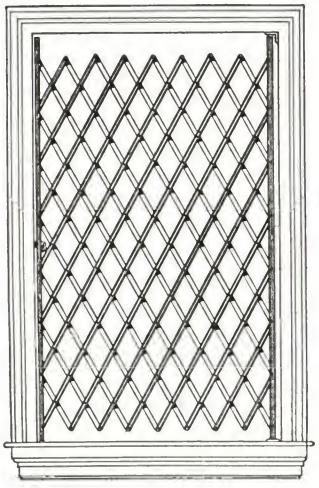
No. 177 Double Steel Gate

Permanent overhead track. Furnished with or without pickets. Equipped with cylinder lock or hasp for padlock

WILLIAM R. PITT COMPOSITE IRON WORKS

TELEPHONE
CHickering 4-6560

548 West 27th Street
NEW YORK, N. Y.





No. 1316. "Pitt" Lazy Tong Guard for Windows
No tracks

Products

Manufacturers of "Pitt-Bostwick" and "Pitt" Lazy Tong Folding Gates and Guards for every purpose.

Where Used

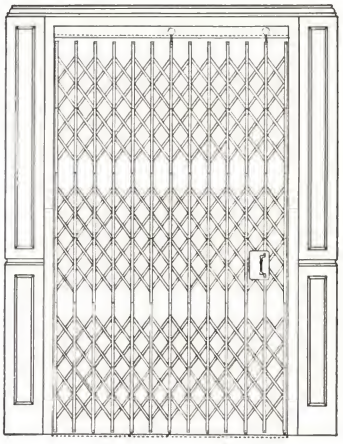
These folding gates are designed for use in banks, churches and theatres; school corridors, entrances and stairs; private residences and apartments; elevator cabs, steamships, trucks and delivery cars.

Quality of Work

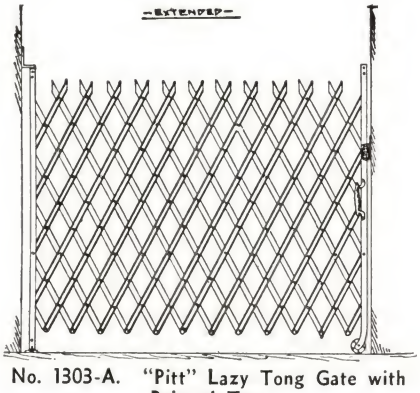
Every Pitt product is of the highest grade workmanship and material. They are strong, durable and operate easily. Folding gates and guards are a specialty. This company is the original manufacturer of the "Bostwick" gate and the originator of most of the standard folding gates. By training, experience and facilities we are prepared to meet the demands of architects, builders and the iron trade.

Folding Gate Estimates

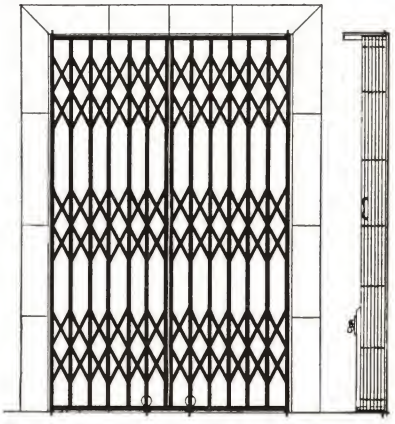
State purpose for which gate is intended. Send plans and specifications, or sketch, showing width and height, and where gate is to set.



No. 1282. "Pitt-Bostwick" Elevator Gate with Tubular Top Track

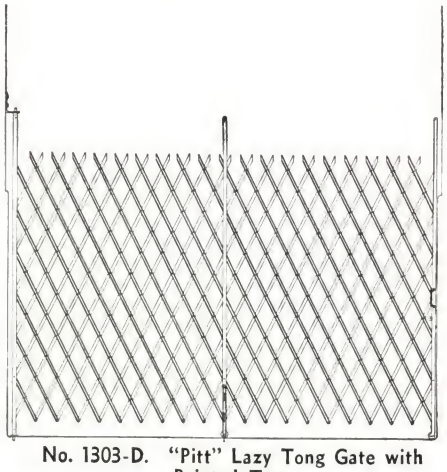


No. 1303-A. "Pitt" Lazy Tong Gate with Pointed Tops
Also made with rounded tops

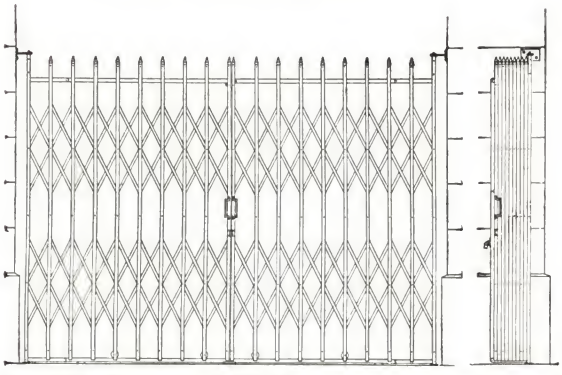




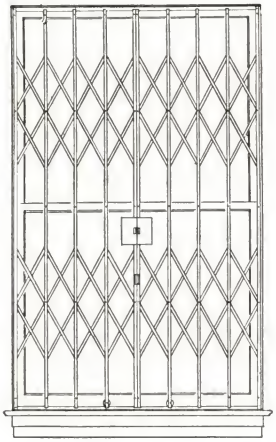
No. 1284. "Pitt-Bostwick" Vestibule or Window Gate with Stationary Top and Hinged Lifting Bottom Tracks



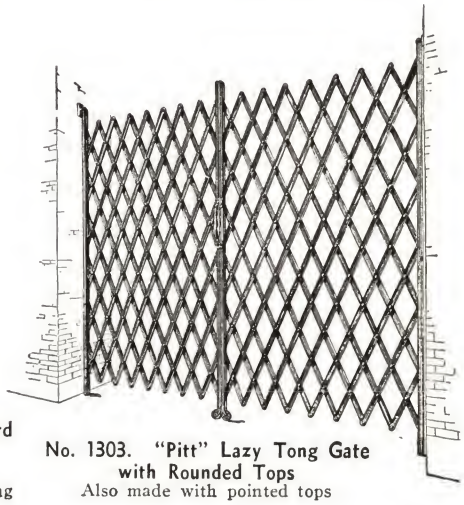
No. 1303-D. "Pitt" Lazy Tong Gate with Pointed Tops
Also made with rounded tops



No. 1262. "Pitt-Bostwick" Gate with Cast Pickets, Hinged Stiffening Bars and Hinged Lifting Bottom Tracks



No. 1267. "Pitt-Bostwick" Guard for Window, with Stationary Top and Bottom Tracks
Can be arranged to fold and swing



No. 1303. "Pitt" Lazy Tong Gate with Rounded Tops
Also made with pointed tops

WESTERN WIRE & IRON WORKS, INC.

TELEPHONE
CANal 6442

1820-1830 South Sangamon Street
CHICAGO, ILL.

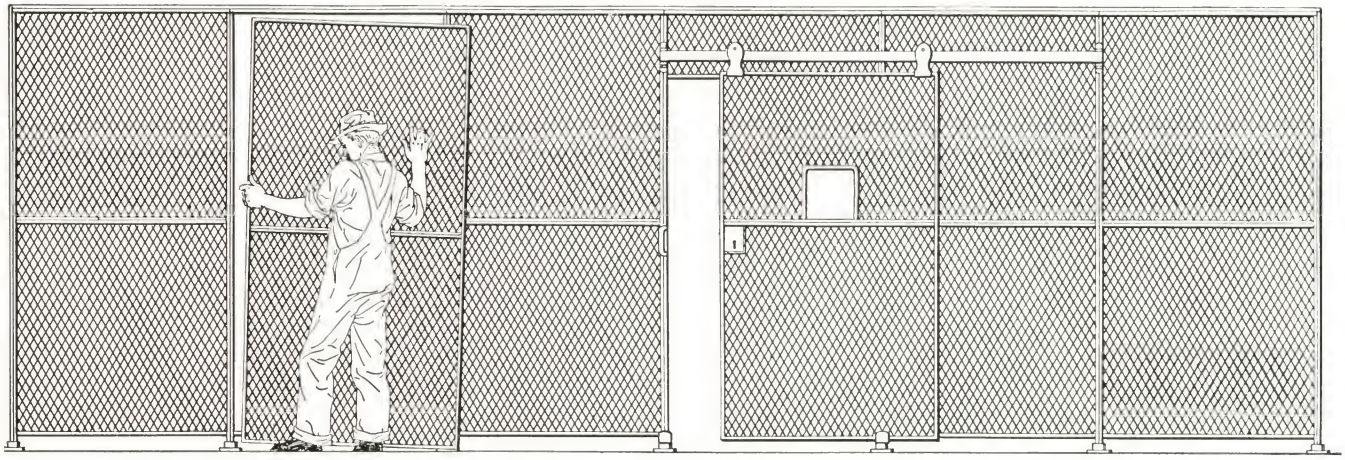
ESTABLISHED
1914

PRODUCTS

"Industro" Woven Wire Partitions, Woven Wire Window Guards, Locks & Hangers for Wire Doors, "Improved" and "Marko" Folding Gates for School Corridors, Ornamental Woven Wire Grilles for Radiators, Cashiers Cages for Banks and Offices, Brass and Bronze "French" Grilles for bookcases, etc.

Also manufacturers of Woven Wire Guards for Skylights, Machinery, Radiators, Switch Boards; Area and Walkway Gratings; Wire Signs and Heavy Wire Cloth; Iron Fences and Window Grilles; Ornamental Iron Railings for Porches, Balconies; Boiler Room "Kol" Trucks, etc.

"INDUSTRO" No. 210 WOVEN WIRE PARTITIONS



"Industro" No. 210 Woven Wire Partitions for Storeroom and Stockroom Enclosures are announced as an economy dividing partition giving protection with maximum lighting and circulation of air at a cost comparable to wood or tile partitions, with the added advantage of 100% salvage value when changes in layout are required.

The No. 210 Partition is similar to that used on Government postoffice work with the exception that the wire we use is one gauge heavier, i.e., No. 10 Washburn & Moen gauge.

All parts are interchangeable, and work can be installed with ordinary tools and labor.

An exclusive feature of "Industro" No. 210 Partition is the triple-crimped wire (three crimps between intersections of wires) which, being machine woven and with shallower crimps than can be used on hand woven work, makes an absolutely tight mesh due to the fact that the beaters on the weaving machine force the wires tightly into their proper crimp, whereas hand woven mesh must of necessity be more loosely woven.

While the standard panel sizes of 5 ft. 0 in. wide by 7 ft. 0 in. high with filler panels, and doors and wickets of sizes as designated in the adjoining specifications are the most economical to use, partitions can be built to accommodate any ceiling height or condition, and our estimating department will be glad to offer suggestions and plans upon request for the most substantial and economical job.

Specifications

Woven Wire Partitions shall be "Industro" Style No. 210 Stock Panels 5 ft. 0 in. wide by 7 ft. 0 in. high, with filler panels at ends, as manufactured by Western Wire & Iron Works, Inc., or equal.

Panels to be constructed of No. 10 W&M gauge wire, triple crimped and tight machine woven into 2-in. diagonal mesh, and clinched into 1 x ½ x ⅛-in. hot rolled channel frames tenoned and riveted at corners. Panels to have 3-in. legs, and to be reinforced horizontally at 3 ft. 6 in. from the floor with two 1 x ⅜ x ⅛-in. hot rolled channels riveted together through mesh every 14 in. and at ends.

Panels to be bolted together continuously and set into 1-in. square malleable iron shoes at floor, and held rigidly at top with continuous 2½ x ⅝ x $\frac{3}{16}$-in. top channel hook bolted to tops of panels, and anchored to walls and columns at ends of panels. Angle or channel verticals of same size as panel frames to be placed at ends, corners and intersections to form post.

Flat Bar Vertical Stiffeners 2½ x $\frac{5}{16}$ in. extending from floor to ceiling construction to be placed not over 15 ft. 0 in. on centers in long runs. Allow 1½-in. space at walls and columns to clear baseboards, chair rails and mouldings.

Sliding Doors to be of the gravity self-closing type equipped with No. 110M and No. 111M Spee-D Ball Bearing Hangers running on a 2 x ¼-in. flat track, and No. 106B Bankers Approved Sliding Door Cylinder Lock with all bronze working parts. Door frames to be fitted with necessary guides, stops, keepers, etc., which are interchangeable for locating doors at any desired position.

Swing Doors to be equipped with three 3½-in. tight pin butts, and No. 100B Cylinder Lock to match sliding door locks.

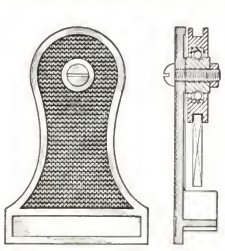
All doors and pass windows to have exposed backs of channel frames covered with ⅛-in. thick banding riveted 8 in. on centers on all sides. Standard door size is 3 ft. 0 in. wide by 6 ft. 6 in. high with 6-in. transom panel above.

Vertical Sliding Pass Windows to be 24 in. wide by 18 in. high and self-balancing, equipped with car window type fasts and keepers at each side near bottom. Windows have No. 16 gauge steel shelves 24 x 12 in. with rounded corners.

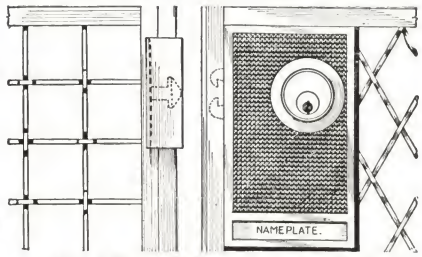
Hinged Pass Windows to be 24 x 36 in. and equipped with two 2½-in. tight pin steel butts and secret latch.

Pass Windows with hinged drop shelves and equipped with spring bolt, for closing opening, to be 24 x 12 in.

All work painted shop coat of black enamel paint before leaving factory.

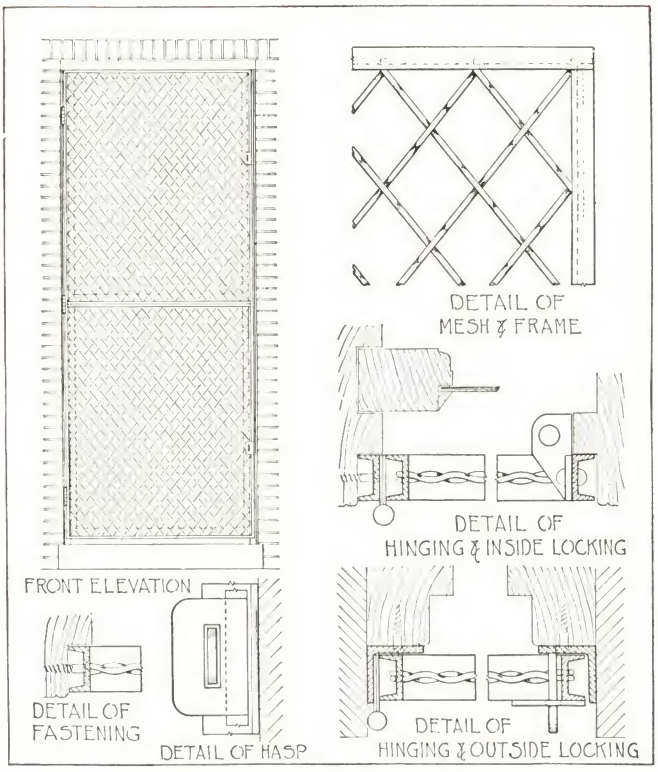


No. 110-M Spee-D Ball-Bearing Hanger
Uses ¼ x 2-in. flat track



No. 106-M Bankers Approved Cylinder Sliding Door Lock
U. S. patent No. 1,667,600 April 24, 1928

No. 40 WOVEN WIRE WINDOW GUARD

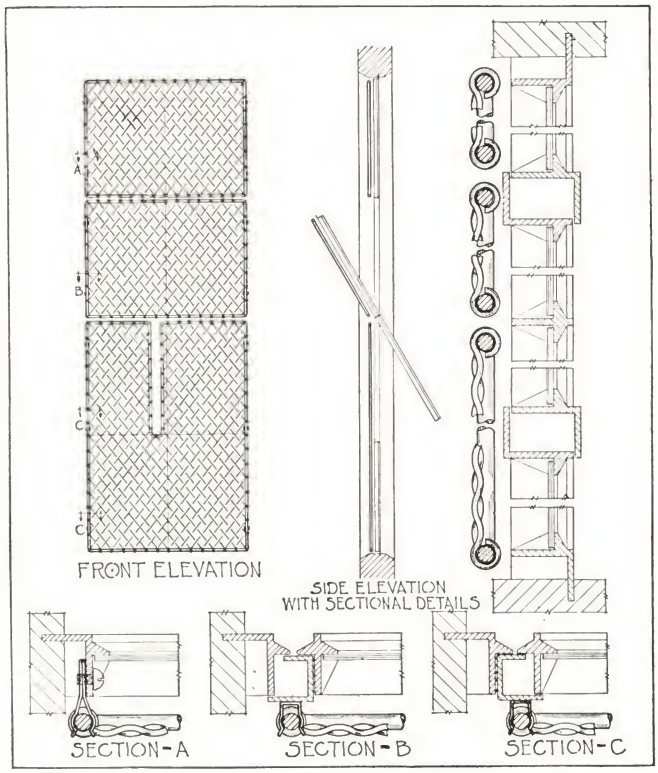


Channel Frame Guards—As applied to wood frames, are especially recommended for *use in gymnasia, etc.,* and for exterior and interior of all double hung windows. Can be supplied with *slots for window poles* when so specified.

Standard Construction—1½-in. diagonal mesh, No. 10 W&M gauge double crimped wire, set into 1 x ½ x ⅛-in. channel frames. Use double ¾-in. channel horizontal stiffener for guards over 5 ft. 0 in. high.

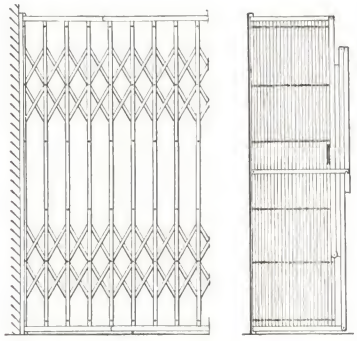
Specify whether guards are to be stationary or hinged with locking arrangement.

No. 50 WOVEN WIRE WINDOW GUARD



Removable Round Rod Frame Guards—As applied to inside of steel sash windows with pivoted ventilators, by means of spring clips attached to sash. Specify 1½-in. diagonal mesh, No. 10 W&M gauge double crimped wire, clinched onto ⅜-in. round rod frames, Style No. 50.

For Exterior Use—Guards can be fastened to lugs welded to sash, or to brick with expansive anchors. Specify galvanized wire and frames for exterior use.



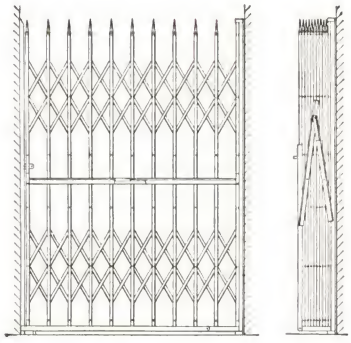
Style No. 1 Folding Top and Bottom Tracks

Improved Type of Vertical Bar Folding Gate for School and Public Corridors—Rigidly constructed with folding top and bottom tracks which leave a clear and unobstructed opening when gates are not in use. Suitable for heights not exceeding 7 ft. 0 in., and openings up to 10 ft. 0 in. wide when made in one piece. Use center parting gates for openings wider than 10 ft. 0 in.

"Marko" Disappearing Gates

When *Disappearing Gates* are required specify *Style A-1 Disappearing Folding Gate* complete with *"Marko"* fully automatic top track, fold-up bottom track and *built-in steel cabinets* equipped with top and bottom adjusting screws, which also permit removal of gate from cabinet for servicing, painting and repairs.

Full size detail upon request.



Style No. 2 Picket Tops and Fold-Up Bottom Track

Vertical Bar Type Folding Gate—Vertical members are double ¾ x ⅜ x ⅛-in. channels spaced 5 in. on centers and riveted over two-diamond lattices top and bottom made of ⅛ x ⅝-in. flat stock.

Tops of channels are fitted with cast bronze pickets. Standard height is 7 ft. 0 in.

Gates can be furnished with fold-up bottom tracks as shown, or with ball-bearing roller.

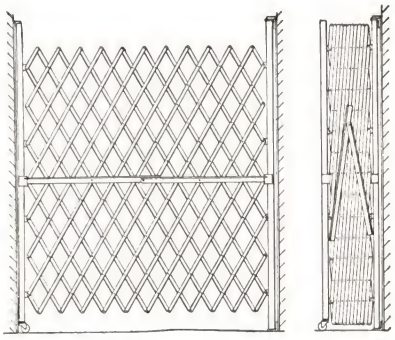
Large Size Openings

For Large Openings enclosed top tracks (built into ceiling if desired) with ball-bearing hangers, can be furnished.

Full Size Details will be furnished upon request.

Available in Various Metals

In specifying, state whether gates are to be made of steel, aluminum, stainless steel, monel or bronze.



Style No. 3 with Jack-Knife Stiffener and Ball-Bearing Roller

Diamond Lattice Type Folding Gate—*Standard Lattice* is ¾ x ⅜ x ⅛-in. channel riveted back to back 6 in. on centers. Ends of channels are rounded. Vertical members are No. 14 gauge C. R. tubing 1¼ x 1¼-in. slotted at one side to engage lattices, with pivot fittings on one side and ball-bearing roller and arrangement for padlock on opposite side. Gate swings against wall or into recessed space when collapsed. Jack-knife stiffener as shown is made of 1½ x 1½ x $\frac{3}{16}$-in. angles and is furnished when specified.

Double Gates with interlocking stiffeners can be furnished for wide openings, or center verticals extending to ceiling can be furnished with top and bottom slide bolts.

Specify height of gate when open, allowing 1½ in. per foot of height additional for collapsing.

Special Lattices made of channels from ½ x ¼ in. to 1½ x ½ in. and rivet spacings from 3 in. to 8 in. respectively can be furnished when requirements demand.

UNITED STATES GYPSUM COMPANY

300 West Adams Street, CHICAGO, ILL.

For Sales Offices, see File Index for USG Catalog on Roof, Floor and Partition Products

RED TOP EXPANDED METAL

(ECONO MESH)

Introductory

Red Top Expanded Metal (Econo Mesh) is a fabricated diamond mesh steel material of high elasticity manufactured by The United States Gypsum Company at its Warren, Ohio, Steel Products Plant. Its diamond shaped meshes range from 3x8 in. down to ¼x1 in. Engineer and contractor alike find definite advantages in using expanded metal as a reinforcement for the many forms of concrete slab work of moderate span and load, since the correct amount of reinforcing can be predetermined.

The smaller meshes present an ideal open mesh material for the construction of open partitions, window and door guards, elevator enclosures, machine guards, etc., and similar items that require a rigid open mesh material.

For Concrete Work

Red Top Expanded Metal offers marked advantages over reinforcing systems composed of tied or interlaced units. Some of its many advantages are: (1) Ease and rapidity with which it can be properly placed by unskilled workmen and with less supervision. (2) Lightens the designer's responsibility, because the correct amount of steel is determined at the time of manufacture, and cannot be altered by careless or ignorant workmen. (3) Provides a perfect bond, minimizing shocks, concentrated loading, etc., as stresses are evenly distributed over entire area. (4) Large, convenient size sheets, which lie flat without stretching.

The more popular reinforcing uses are for floor and roof slabs of moderate span and load, retaining walls, loading platforms, porch floors, culverts, sea walls, reservoirs, small bridges, tanks, foundations, columns, vaults, fireproofing, beam wrapping, etc.

For Open Partitions, Industrial Uses, etc.

Because it permits good visibility and has great rigidity, Red Top Expanded Metal is used extensively in many industries. It is particularly adaptable for the making of Open Partitions, Window and Door Guards, Machine Guards, etc. Its moderate cost, efficiency, durability and the ease with which it can be formed and framed commend it for this wide range of service. Red Top Expanded Metal can be framed with angle iron, U-edging, Red Top Frame Bar, or Red Top Partition Bar. These and other accessories are also furnished.

Some of its present uses in industries are: Skylight guards, conveyor enclosures, elevator shaft and cage enclosures, fire door guards, mill trucks, trays and baskets, open shelving, ventilating fan enclosures, refuse burners, live stock pens, filter screens, truck body enclosures, stairway enclosures, brake shoe binder.

The United States Gypsum Company does not manufacture partitions, guards, etc. Its interest is confined to the distribution of the necessary materials for their construction, together with any advisory service that can be rendered. Names of reliable fabricators will also be furnished to those who prefer to have their safety and industrial devices built for them. Interesting descriptive literature on the many industrial uses for Red Top Expanded Metal is also available.

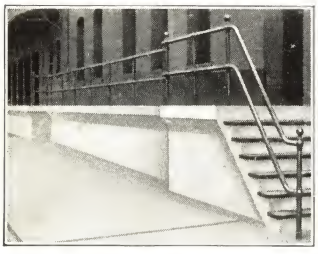
STOCK SIZES AND WEIGHTS OF EXPANDED METAL

Style Numbers	Size of mesh, in.	U. S. std. gauge number	Sq. inch sect. area per foot of width	Approx. Weight lbs. per sq. ft.	Width short way of mesh	Length long way of mesh feet
Meshes for Reinforcing Concrete						
3-13-075	3 x8	13	.075	.25	6′ 4″	8, 10, 12
3-13- 10	3 x8	13	.10	.34	7′ 0″	8, 10, 12
3-13-125	3 x8	13	.125	.42	5′ 8″	8, 10, 12
3- 9- 15	3 x8	9	.15	.51	7′ 0″	8, 10, 12
3- 9-175	3 x8	9	.175	.60	6′ 0″	8, 10, 12
3- 9- 20	3 x8	9	.20	.68	5′ 3″	8, 10, 12
3- 9- 25	3 x8	9	.25	.85	4′ 2½″	8, 10, 12
3- 9- 30	3 x8	9	.30	1.02	7′ 0″	8, 10, 12
3- 9- 35	3 x8	9	.35	1.19	6′ 0″	8, 10, 12
3- 4- 40	3 x8	4	.40	1.36	4′ 7″	8, 12
3- 4- 45	3 x8	4	.45	1.53	4′ 1″	8, 12
3- 4- 50	3 x8	4	.50	1.70	7′ 4″	8, 12
3- 4- 55	3 x8	4	.55	1.87	6′ 8″	8, 12
3- 4- 60	3 x8	4	.60	2.04	6′ 1½″	8, 12
2¼-13-10	2¼x6	13	.10	.34	7′ 0″	8, 10, 12
2¼-13-15	2¼x6	13	.15	.51	4′ 8″	8
Special Meshes for Open Partitions, Industrial Uses, etc.						
1½″ No 16	1⅜x3⅛	16		.41	4′ 0″	8
1½″ No. 13	1⅜x3⅛	13		.65	4′0″ and 6′0″	8
1½″-.68 lb.	1⅜x3⅛	12		.68	4′0″ and 6′0″	8
1½″ No. 10	1⅜x3⅛	13		.79	4′0″ and 6′0″	8
1½″ No. 9	1⅜x3⅛	10		1.19	6′0″	8, 10, 12
1″ No. 16	1x2⅜	16		.47	4′0″ and 6′0″	8
¾″ No. 16	¾x2⅛	16		.57	6′6″	8
¾″ No. 13	¾x2⅛	13		.87	4′0″ and 6′0″	8, 10, 12
¾″ No. 10	¾x2⅛	13		1.19	4′0″	8
¾″ No. 9	¾x2⅛	10		1.80	4′0″	8, 10, 12
½″ No. 18	½x1 13/16	18		.70	4′0″ and 6′0″	8
½″ No. 16	½x1 13/16	16		.87	4′0″ and 6′0″	8
¼″ No. 18	¼x1	18		1.14	4′0″	8

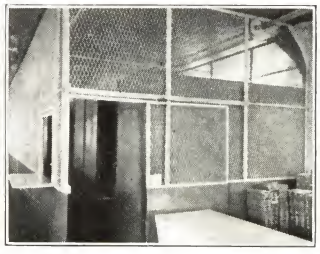
Shelf-X, Flattened Expanded Metal

Except for the fact that it has the advantage of a flat surface, Shelf-X has the strength, rigidity, workability, and economy features of Red Top Expanded Metal. It is widely used for shelving purposes and many other uses requiring a rigid open mesh material. Some Shelf-X uses are: refrigerator shelves, cabinet shelves, stove grilles, ventilating grilles, drying trays, display panels. Can be had in ¼, ½, ¾, 1 and 1½ inch meshes cut from 13, 16, and 18 gauge steel.

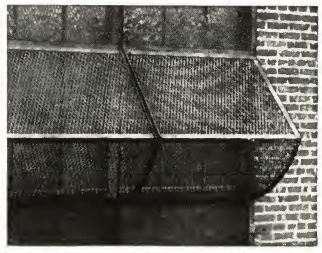
EXPANDED METAL USES



Loading Platforms



Open Partitions



Window Guards

STOCK SIZES AND WEIGHTS OF SHELF-X

Style No.	Approx. Wt. per sq. ft.	Size Sheets Width	Size Sheets Length
1 ½″ No. 16	.31	3′ or 4′	8′
1½″ No. 13	.65	3′ or 4′	8′
1½″ No. 9	1.19	3′ or 4′	8′
1″ No. 16	.17	3′ or 4′	8′
¾″ No. 16	.57	3′ or 4′	8′
¾″ No. 13	.87	3′ or 4′	8′
¾″ No. 9	1.80	3′ or 4′	8′
½″ No. 18	.70	3′ or 4′	8′
½″ No. 16	.87	3′ or 4′	8′
¼″ No. 18	1.14	4′	8′

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ALL-STEEL-EQUIP CO., INC.

GENERAL OFFICES AND FACTORY

171 Griffith Avenue, AURORA, ILL.

CHICAGO, ILL., All-Steel-Equip Co., 326 So. Jefferson Street
NEW YORK, N. Y., All-Steel-Equip Co., 56 W. 22nd Street
DETROIT, MICH., All-Steel-Equip Co., 604 Donovan Building
PHILADELPHIA, PA., All-Steel-Equip Co., 4308 No. Broad Street
WASHINGTON, D. C., All-Steel-Equip Co., 1254 24th Street, N. W.
BIRMINGHAM, ALA., Alex Patterson, Chamber of Commerce Building

BRANCH AND SALES OFFICES IN ALL PRINCIPAL CITIES

PRODUCTS

Steel Lockers (all types), Steel Storage, Wardrobe, Combination Cabinets (57 models), Steel Filing Cabinets (all grades). Steel Book Shelving. Steel Equipment for public and commercial buildings.

ENGINEERING HELP

A-S-E Engineers are men of long experience in the designing and fabricating of steel equipment. Their services are available, without cost or obligation, to architects and officials of schools and institutions, faced with the problem of selecting and laying out the equipment best suited to their needs. A-S-E branch and sales office men are trained steel equipment men and will be glad to be called in consultation.

SPECIFICATIONS—A-S-E STEEL WALL-ROBES

Frame—⅞x⅞x⅛ in. hard steel angle uprights with ⅞x⅞x⅛ in. hard steel tee angle upright in center. Cross members are 16-gauge (.0598 in.) channels, formed at corners and center to make flush joints with uprights. Assembly is with two countersunk (flush) rivets at each corner and in the center. Rivets ground and polished smooth on face of frame. No notches cut in angles for hinges.

Doors—One piece 16-gauge (.0598 in.) stretcher level steel, with 1-in. flange on all edges, and with additional ⅜-in. return flange (channel formation) on hinge side. Additional ¾-in. and ⅜-in. return flanges (box formation) on latch side. Latch bar partially enclosed with box formation.

Hinges—Flush hinges, completely concealed pin type, embossed in metal of door, making the hinge an integral part of door. Hinge pin held by a full-looped hinge leaf of No. 16-gauge steel, riveted to frame by two countersunk (flush) rivets, ground and polished smooth on face of frame. Pin held in the emboss in the door by a heavy embossed hinge clip, non-sagging and tamper-proof. Three hinges on each door.

Latch—(*Pre-locking*)—Secure and silent. Latch bar is raised to permit opening the locker, and immediately drops to "locked" position. Locker may be locked while in open position and, in closing, an independent plunger engages the door jamb at each locking point. Simple and dependable.

Group Control—Group control device is designed to control the locking of an entire row of units (up to and including 10 units wide), by inserting the key in the lock, and pulling out the plunger, which immediately unlocks all the doors. To lock the entire group, all that is necessary is to press in the lock cylinder. The group control device can easily be disengaged, and individual locks or padlocks can be installed on any or all Wall-Robes at any later time, as doors are punched for standard locks, equipped with padlock attachment.

Rubber Silencers—Live-rubber silencing equipment furnished at points of contact on top and bottom of latch bar and on door jambs. Rubber bumpers are replaceable.

Handle—White brass, die-cast in distinctive design, shaped for easiest natural grip and greatest safety. Nickel-plated in Butler finish. Padlock attachment and padlock guard are integral parts of handle. Padlock eye completely enclosed. Handle is attached to latch bar with two slotless-head machine screws and lock washer.

Ventilation—When Wall-Robes are used with a ventilating system, eight louver perforations are placed at the bottom of each door, round hole perforations are also placed at the top of the back, and removable perforated or louvered base plate is supplied. When Wall-Robes are used without ventilating system, eight louver perforations are placed at the top and bottom of each door, no perforations in back or base plate.

Number Plate—Brass, chromium plated, with large black-filled numbers. Numbering as specified.

Backs—24-gauge (.0239 in.) steel. Offset at front and back to fit around sides of Wall-Robes. Bolted to sides on 12-in. centers.

Sides—24-gauge (.0239 in.) steel. Offset at front and back to fit inside of frame angle and back flange. Top edges flanged to fit over edges of Wall-Robe top. Assembled to back and frame with bolts.

Intermediate Partition—24-gauge (.0239 in.) steel. Offset at front to fit under "T" angle and flanged on all other sides for bolting to top, bottom, and back.

Tops—24-gauge (.0239 in.) steel. Flanged on all four sides, and attached with bolts to sides and back. Front of top formed to fit inside of and rest on top cross channel of frame. Top flush with top of frame.

Bottoms—24-gauge (.0239 in.) steel. Flanged on all four sides. Attached with bolts to sides and backs. Fronts formed to fit inside of bottom frame member. Bottoms flush with top of frame member.

Shelves—20-gauge (.0359 in.) steel. Flanged on sides and back with front edge rolled for greater strength and smoothness. Attached with bolt to each side.

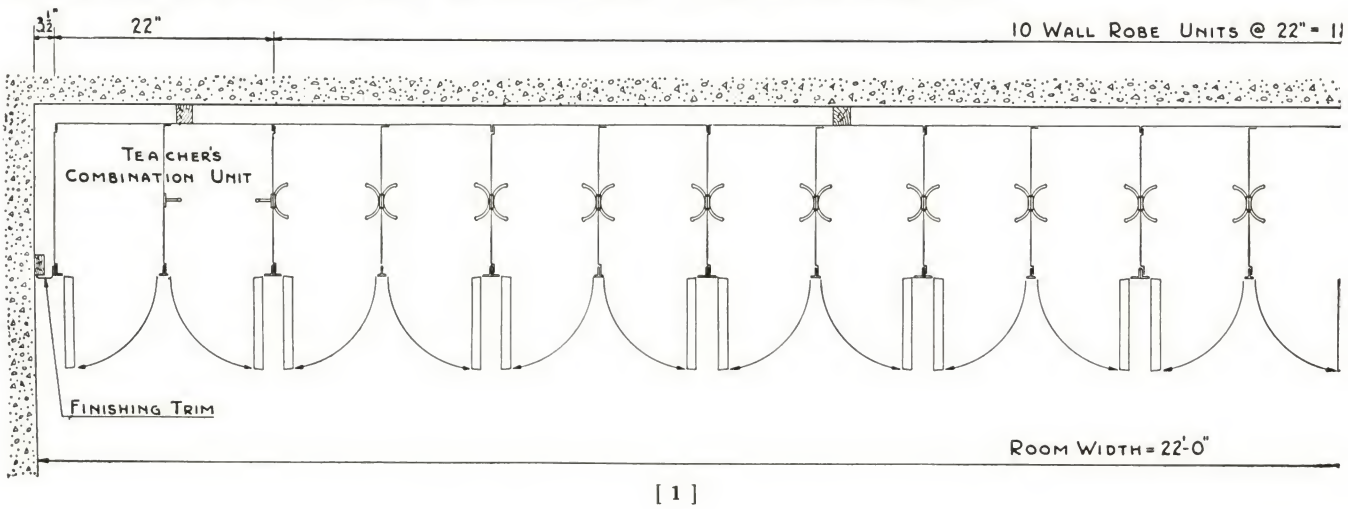
Bolts—All bolts used in A-S-E Wall-Robes are 8/32 slotless binding head machine screws, black Parkerized. Nuts used are square, also black Parkerized.

Hooks—Double prong, ball point, cadmium-plated against rusting. All hooks attached with two bolts.

Finishing Trim—For recessed installations, cold rolled steel trim of 3-in. standard width, built to length of rows and height of Wall-Robes, with neat overlapping slip joint for adjustment to length. No bolt or rivet heads showing.

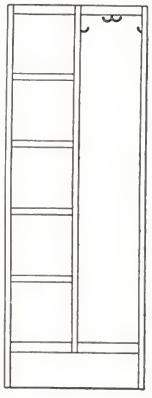
Lock—(*Group*)—Grooved-key, pin-tumbler lock with spring bolt, chromium plated.

Finish—A-S-E Olive Green or School Furniture Brown, standard colors. French Grey and other colors on order at nominal extra. All parts thoroughly cleaned, then enameled and baked at high temperature. All Wall-Robe fronts further finished in hand sprayed lacquer. Highest quality enamels and lacquers used.

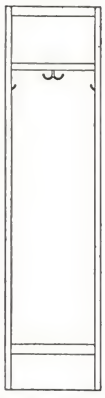


ALL-STEEL-EQUIP CO., INC.

NEW 54″ HIGH A-S-E STEEL WALL-ROBES FOR ELEMENTARY SCHOOLS

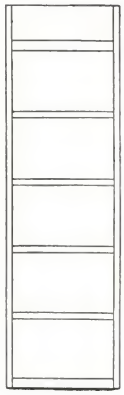


No. 9311. 22-30″ wide, 15″ deep, 60-66″ high. Full length coat compartment, 4 half shelves. 1 ceiling, 2 double side hooks. Double doors.



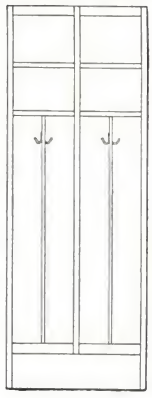
Teachers' Units

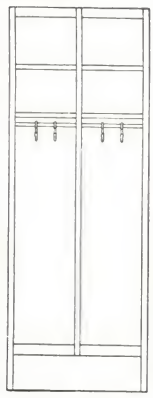
No. 9312. 9-12- 15-18″ wide, 15″ deep, 60-66″ high. Full length coat compartment, full width shelf. 1 ceiling, 2 double side hooks. Single door.



No. 9313. 9-12-15-18″ wide, 16″ deep, 60-66″ high. Book case. 4 adjustable shelves. Single door.









Pupils' Units

No. 9112, for 4 to 6 pupils. 22-30″ wide, 15″ deep, 60-66″ high. 2 coat compartments. 4 11x7″ book compartments. 4 double prong side hooks. Double doors.

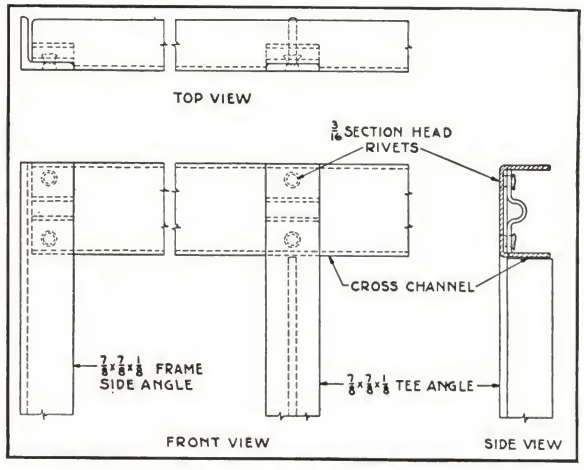
No. 9211. 22-30″ wide, 15″ deep, 60-66″ high. For 2 to 6 pupils. 2 22x7″ or 30x7″ compartments. 2 large coat compartments, sliding hooks. Double doors.

No. 9111, for 4 pupils. 22″ wide, 15″ deep, 60-66″ high. 4 coat compartments. 4 11x7″ compartments. 4 double prong side hooks. Double doors.

Only A-S-E offers a group wardrobe properly designed for the accommodation of small grade school children. The 60-in. over-all height of the new A-S-E Wall-Robe makes it the only wardrobe providing top shelf accessibility to six-year-olds.

For upper grade rooms 66-in. Wall-Robes are provided.

A-S-E Wall-Robes are available in three pupils' and three teachers' models as shown. Each pupils' unit accommodates 2 to 6 children and installations are in groups up to 10 units, including teacher's unit.



Frame Construction

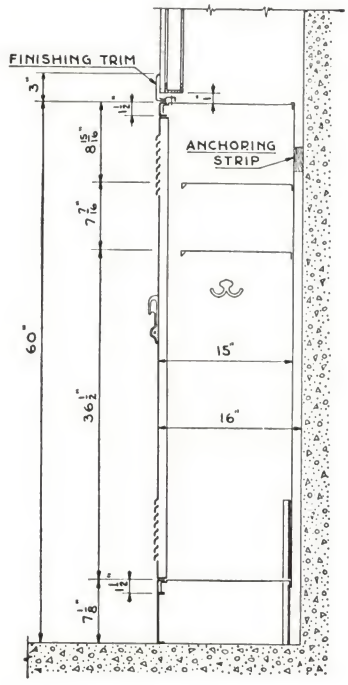
All A-S-E Wall-Robes are safeguarded against door misalignment by the solid frame construction, shown in this detail of frame corner and center support.

Individual Door Operation

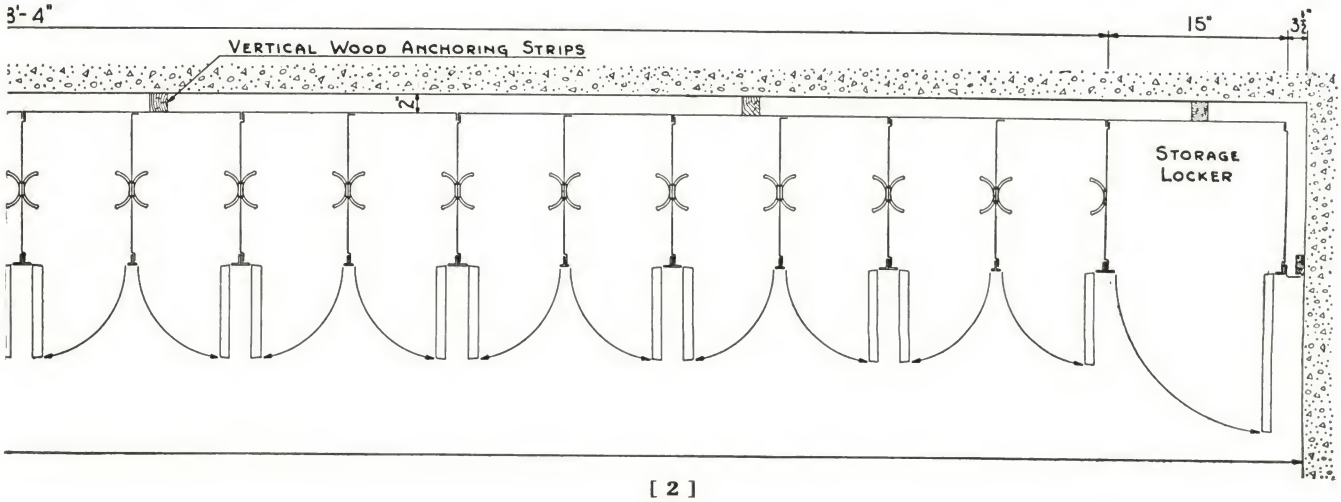
One lock in teacher's unit controls all doors. When teacher's unit is unlocked, doors may be opened or closed at will; when teacher's unit is locked, the doors may be closed at any time, locking automatically.

Ventilation

Wall-Robes may have solid, grilled, or louvered bases. See specifications.



Right:
Recess Details of 54⅜-In. High Wall-Robe on Steel Base



STEEL LOCKERS—ALL STANDARD TYPES



Single Tier Lockers at Plant of Campana Sales Corporation, Batavia, Ill.



Double Tier Lockers Installed in Corridor of Thomas A. Edison High School, Gary, Ind.

SPECIFICATIONS

General—A-S-E Lockers are made from hot-rolled annealed, stretcher-leveled steel, free from buckle or scale. They are built on the unit principle, with all parts interchangeable.

Frame—⅞ x ⅞ x ⅛ in. hard steel angle uprights; cross members 16-gauge (.0598 in.) cold rolled steel channel, inset at ends to be flush with face of angle uprights. Each corner riveted with two countersunk (flush rivets, then ground and polished smooth on face of frames. *No notches cut in angles for hinges.*

Doors—One-piece 16-gauge (.0598 in.) hot rolled annealed steel, with 1-in. flange on all edges, and with additional ⅜-in. return flange (channel formation) on hinge side. Additional ¾ and ⅜-in. return flanges (box formation) on latch side. Latch bar partially enclosed within box formation. Doors 18 in. or more in width reinforced by steel panels between sets of louvers.

Hinges—Flush hinges, completely concealed pin type, embossed in metal of door, making the door an integral part of the hinge. Hinge pin is held by a full looped hinge leaf of 16-gauge steel, riveted to frame by two countersunk (flush) rivets, ground and polished smooth on face of frame. Pin is held in the emboss in door by a heavy embossed hinge clip. Non-sagging and tamperproof. Two hinges on all sizes up to 42 in. high. Three hinges on 60 in. high, and 4 hinges on all lockers 72 in. in height.

Latch (Standard—Not Pre-locking)—Automatic lift type, of channel formation, one piece moving vertically, partially concealed within flange of door. Remains in raised position when door is open, and latches automatically as it is closed. Engages into 13-gauge (.0897 in.) steel jambs, serving both as door-strikes and latch-keepers, at three points on single tier and two points on double tier lockers.

Latch (Pre-locking)—Furnished when specified.

Rubber Silencers—Live rubber silencing equipment furnished on all single and double tier lockers, at points of contact on top and bottom of latch bar and on door jambs. Rubber bumpers are replaceable.

Handle—White brass, die-cast, in distinctive design, shaped for easiest natural grip and greatest safety. Chromium plated in high-lighted satin finish, or nickel-plated, Butler finish. Padlock attachment and padlock guard (to prevent padlock from striking against door and marring finish) are integral parts of handle. Padlock eye completely enclosed within handle. Handle is attached to latch bar with two special slotless head machine screws and lock washers.

Ventilation—Standard ventilation feature consists of louver perforations of harmonious modern design. Single tier lockers have sets of eight louvers at top and at bottom of door. Double tier type have sets of four at top and bottom. Louver perforations full height of door, or ½ in. round hole perforations on 1½-in. centers, on order.

Number Plate—Brass, chromium plated and highly polished, with large black filled numbers, attached with two solid rivets. Numbering as specified.

Backs—24-gauge (.0239 in.) hot rolled annealed steel. Flanged on upright edges to fit around sides of lockers. Bolted to sides on 12 in. centers.

Sides—24-gauge (.0239 in.) hot rolled annealed steel. Offset at front and back to fit inside of frame angle and back flange. Top edges flanged to fit over edges of locker top. Assembled to back and locker frame with bolts on 12 in. centers.

Tops—24-gauge (.0239 in.) hot rolled annealed steel. Flanged on all four sides, and attached with bolts to sides and back of locker. Front of top formed to fit inside of and rest on top cross channel of frame. Top flush with top of frame.

Bottoms—24-gauge (.0239 in.) hot rolled annealed steel. Flanged on all four sides. Attached with bolts to locker sides and backs. Fronts formed to fit inside of and rest on bottom frame member. Bottom flush with frame.

Shelves—24-gauge (.0239 in.) hot rolled annealed steel. Flanged on sides and back, with rolled edge at front for greater strength and smoothness. Attached with bolts in each side, at a point approximately 9 in. from top in single tier lockers. Not furnished in double tier unless specially ordered.

Bolts—All bolts used in A-S-E Lockers are 8/32 slotless binding head machine screws, black Parkerized. Nuts used are square, also black Parkerized.

Hooks—Ball-point, cadmium plated against rusting. Single prong side hooks and double prong ceiling hook in single tier lockers, and in other styles on special order. All hooks attached with two bolts.

Standard Equipment—Number plate, padlock attachment, three coat hooks (more in larger sizes), hat shelf, and double prong ceiling hook in single tier locker. Double tier lockers have same equipment, but no hat shelf or ceiling hook unless specially ordered. All lockers 18 in. or more in depth have coat hanger rod instead of ceiling hook. 6 in. legs are standard equipment and adjustable feet are furnished when requested, without extra charge. No-leg lockers (for recessed or concrete base installation) furnished at same prices as standard lockers. Closed base, sloping top, and other special features supplied at nominal extra cost.

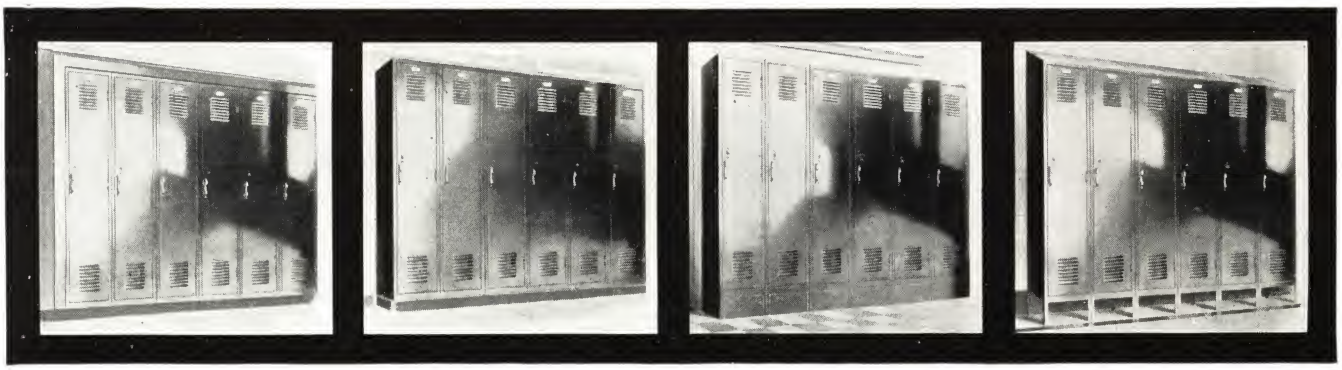
Finishing Trim—For recessed installations. 18-gauge (.0478 in.) cold rolled steel. 3 in. standard width. Built to length of locker rows and height of lockers, with neat overlapping slip joint for adjustment to length. No bolt or rivet heads showing.

Locks—Any desired type of locker lock or padlock can be furnished on order.

Finish—A-S-E olive green or school furniture brown, standard colors. French gray and other colors on order. All parts thoroughly cleaned, then enameled and baked at high temperature. All locker fronts further finished in hand sprayed lacquer. Highest quality enamels and lacquers used.

Shipment—Shipped completely assembled or knocked down.

A-S-E LOCKERS ARE ADAPTABLE TO ANY INSTALLATION PLAN



Recessed with Trim

Free-Standing, Terrazzo Base

Free-Standing, Closed Base

Free-Standing, 6-In. Legs, Sloping Tops

INSTALLATION DETAILS—RECESSED LOCKERS



A Finger Operates the New A-S-E Streamlined Handle



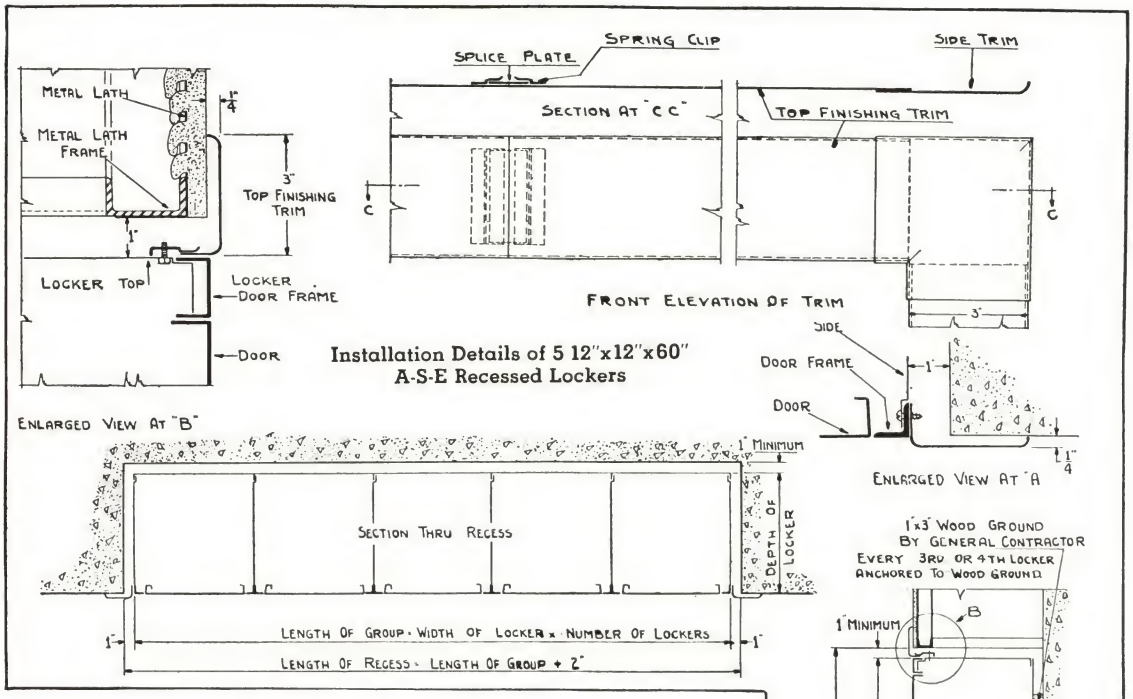
Outside of Hinge
Showing how door emboss covers and conceals hinge pins



Type 9006 Two-person Locker
Each occupant has one small and one coat compartment



Group Lockers
One point locking and unlocking but individual door operation



Installation Details of 5 12"x12"x60" A-S-E Recessed Lockers

NO. 9000 SINGLE TIER LOCKERS

Width, in.	Depth, in.	*Height, in.	Width, in.	Depth, in.	*Height, in.	Width, in.	Depth, in.	*Height, in.
12	12	60	18	18	60	15	15	72
12	15	60	18	21	60	15	18	72
12	18	60	12	12	72	18	18	72
15	15	60	12	15	72	18	21	72
15	18	60	12	18	72			

*Heights given do not include 6-in. legs, use of which is optional. Double row lockers not made for depth greater than 18 in. Also built in other acceptable widths and depths in multiples of 3 in.

NO. 9001 DOUBLE TIER LOCKERS

Wide, in.	Deep, in.	High, in.
12	12	30
12	12	36
12	15	36
15	15	36
12	12	42
12	15	42

NO. 9002 MULTIPLE TIER LOCKERS

Wide, in.	Deep, in.	High, in.	Tiers
12	12	12	5 or 6
12	15	12	5 or 6
15	15	15	4

NO. 9006 TWO-PERSON LOCKERS

Compartments	Wide, in.	Deep, in.	*High, in.
2 large.....	7½	15	53
2 small.....	15	15	9
Over-all.....	15	15	72
2 large.....	7½	18	53
2 small.....	15	18	9
Over-all.....	15	18	72
2 large.....	7½	21	53
2 small.....	15	21	9
Over-all.....	15	21	72

*Heights shown do not include 6-in. legs, use of which is optional.

TYPE NO. 9003 COMPARTMENT LOCKERS

Compartments	Wide, in.	Deep, in.	High, in.
Seven-Person			
1 large.....	18	21	60
1 small.....	18	21	12
6 small.....	18	21	12
Over-all.....	36	21	78
Eight-Person			
2 large.....	18	21	60
8 small.....	18	21	12
Over-all.....	54	21	78

Ask for A-S-E Catalog C-31



Type 9003 Seven-person Locker
Seven small compartments, one large one

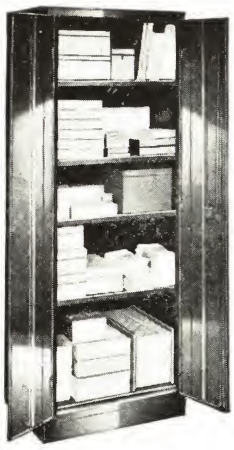


Left:
Box Lockers Installed in Elementary School, Franklin, Ky.

Type 9002 Box Lockers
Storage space for small articles



OTHER STEEL EQUIPMENT FOR STORAGE SERVICE



Steel Storage, Wardrobe, Combination Cabinets

Two lines, "Master" and "Popular". Both made of first grade heavy furniture steel on stout steel frames. Provided with solid, chrome-plated hardware and grooved key disc tumbler locks. Finished in olive green baked-on enamel as standard with Walnut or Mahogany wood grain finishes available upon specification. Also white, French gray or other flat colors. Shelves in all Storage and Combination Cabinets adjustable on 1½-in. centers without use of tools. Ask for A-S-E Catalog 176.



Steel Filing Cabinets

Well-made heavy duty filing cabinets in four grades, De Luxe, Drawer Suspension Grade, Non-suspension Grade, Junior Non-suspension Grade. Units for every filing purpose. Ask for Catalog C-10.



"MASTER" LINE SIZES AND MODELS

	Width, in.	Depth, in.	Height, in.
*No. 3687 storage cabinet	36	18	78
*No. 3689 wardrobe cabinet	36	18	78
*No. 3688 combination cabinet	36	18	78
*No. 4287 storage cabinet	42	18	78
No. 2887 storage cabinet	18	18	78
No. 2889 wardrobe cabinet	18	18	78
No. 1804 desk high cabinet	18	20	30½
*No. 3684 counter high cabinet	36	18	42

*Furnished in 24-in. depth also.

"POPULAR" LINE SIZES AND MODELS

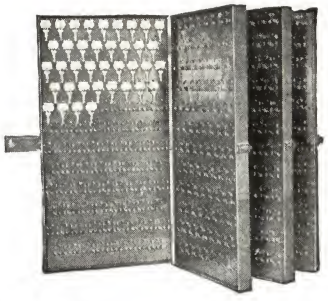
	Width, in.	Depth, in.	Height, in.
*No. 3487 storage cabinet	36	18	78
No. 3456 storage cabinet	36	18	66
*No. 3485 combination cabinet	36	18	78
*No. 3489 wardrobe cabinet	36	18	78
No. 2486 storage cabinet	24	18	66
No. 2456 storage cabinet	24	15	66
No. 1886 storage cabinet	18	18	66

*Furnished in 24-in. depth also.

Steel Unit-Robes—Low Cost Storage

The A-S-E Single Row Unit-Robe provides 16 persons with a private locked compartment each, plus hanging space for long garments, in less than ½ sq. ft. of floor space per person. Each unit 12 in. wide, 18 in. deep, 12 in. high. Door provided with padlock eye. Over-all size of Single Row Unit-Robe, 69 in. wide, 18 in. deep, 77⅛ in. high, including 6-in. legs. Coats hang from ½-in. galvanized iron pipe coat rod. Double Row Unit-Robes will accommodate 32 persons and are assembled back to back, with common back, the same as double row lockers. Ask for Unit-Robe Catalog UR-2.

Ask for A-S-E Catalogs



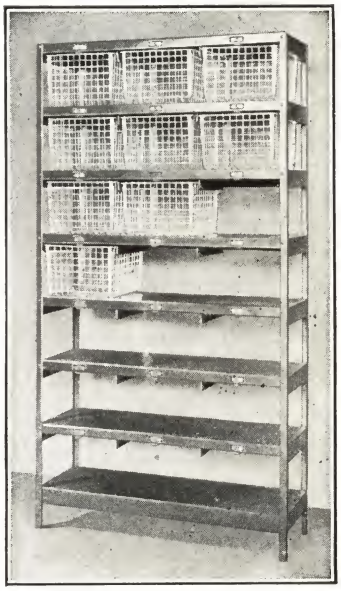
Steel Key Cabinet

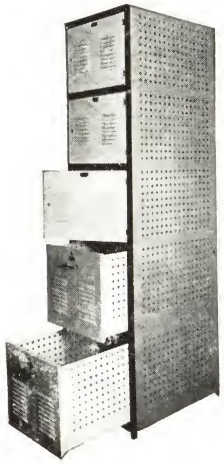
Opens like a book. May be locked shut. One to six leaves with 102 to 612 hooks, each accommodating 1 to 4 keys.



Gym Baskets and Racks

Complete ventilation in clothing storage for gym or swimming pool. Baskets are 9x13x8 or 12x13x8 in.





Froz-N-Food Lockers

Architects who are called in on planning the increasingly popular food storage locker plants will find useful information in the A-S-E Froz-N-Locker Catalog. Available upon request.

Thirty-three different models are listed in heights of from four to six openings, offering a height or arrangement to fit any size refrigerated locker room.

A FEW POPULAR BASKET RACKS
(Many other sizes and arrangements)

Number and size, in.	Width, in.	Depth, in.	Height, in.
30 baskets (5 wide x 6 high)	48 13/16	13½	64 7/8
35 baskets (5 wide x 7 high)	48 13/16	13½	74 5/16
40 baskets (5 wide x 8 high)	48 13/16	13½	84
36 baskets (6 wide x 6 high)	58 3/16	13½	64 7/8
42 baskets (6 wide x 7 high)	58 3/16	13½	74 5/16
48 baskets (6 wide x 8 high)	58 3/16	13½	84

Table covers baskets 9x13x8 in. Over-all heights include 5-in. legs on racks.

BERGER MANUFACTURING DIVISION

REPUBLIC STEEL CORPORATION

Library Equipment, Lockers, Shelving, Storage Cabinets and Steel Office Furniture

CANTON, OHIO

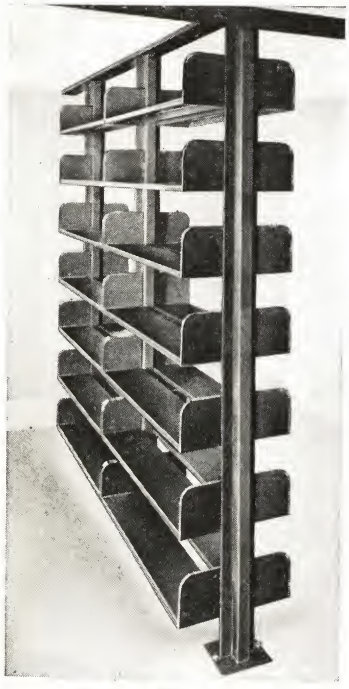
BRANCHES AND DISTRICT OFFICES

BIRMINGHAM, ALA.
BOSTON, MASS.
BUFFALO, N. Y.
CHICAGO, ILL.
CINCINNATI, OHIO
CLEVELAND, OHIO
COLUMBUS, OHIO
DALLAS, TEX.
DETROIT, MICH.
INDIANAPOLIS, IND.
KANSAS CITY, MO.
LOS ANGELES, CALIF.
MINNEAPOLIS, MINN.
NEW YORK, N. Y.
PHILADELPHIA, PA.
PITTSBURGH, PA.
ST. LOUIS, MO.
SAN FRANCISCO, CALIF.
TOLEDO, OHIO

For other Berger pages, see File Index

BERLOY STEEL LIBRARY EQUIPMENT

Steel Library Equipment and the planning of its efficient arrangement has been given specialized importance by this famous metal fabrication organization. Available to architects is a dependable service department with able men to assist in library projects. Their long experience, with many outstanding installations and constant study of library needs, qualifies them for consultation work from the earliest stage through to the final working plans. Complete information of the library and its intended operation in all departments is needed for satisfactory and proper stack allocation. This cooperation is offered without obligation. Consult any Berloy representative or write to the main office.

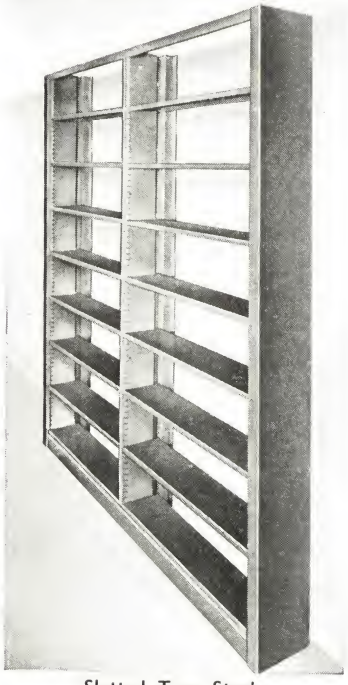


Bracket Type Stack

An economical method yet strong and sturdy. Made of Berloy die-formed sheet steel. Furnished for free standing or multi-tier installations. All shelves adjustable. Full width end panels available for attractive appearance.

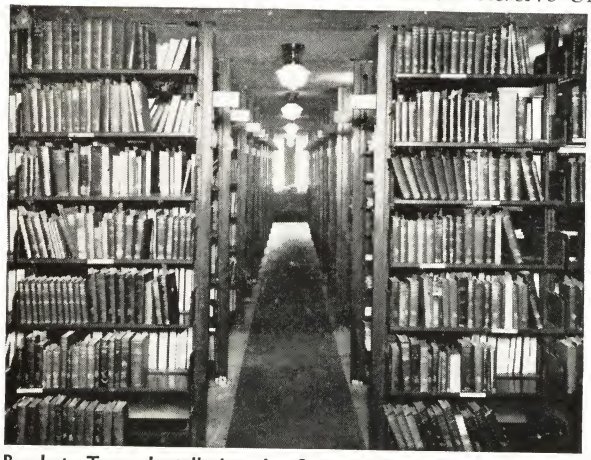
A FEW OUTSTANDING BERLOY INSTALLATIONS

Brown University, Providence, Rhode Island
Connecticut State College, Storrs, Conn.
Crozier Theological Seminary, Chester, Pa.
Government Printing Office, Washington, D. C.
Hamline University, St. Paul, Minn.
Harvard University, Cambridge, Mass.
Kent State Normal, Kent, Ohio
Little Rock Public Library, Little Rock, Ark.
New Mexico State College Library, State College, N. Mex.
State Teachers' College, Chico, Calif.
State Teachers' College, Fresno, Calif.
State Teachers' College, Moorhead, Minn.
University of Louisville, Louisville, Ky.
U. S. Archives Building, Washington, D. C.
U. S. Post Office Law Library, San Francisco, Calif.
Warner Public Library, Tarrytown, N. Y.
Western Reserve University, Cleveland, Ohio

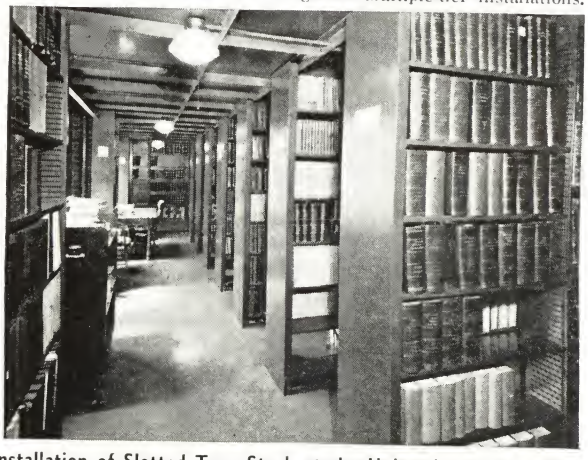


Slotted Type Stack

View shows first tier of Multi-tier installation. The slotted type stack is made of one-piece uprights that have four point shelf supports. The adjustable shelf is also made in one-piece and designed to prevent accidental removal. This type stack makes a more attractive installation as all end panels are finished. For single or multiple-tier installations.



Bracket Type Installation in Second Story Stack Room of Hamline University, St. Paul, Minn.



Installation of Slotted Type Stack at the University of Louisville, Louisville, Ky.

BERLOY STEEL LOCKERS FOR EVERY REQUIREMENT

BERLOY (Reg. U. S. Pat. Off.)

More than 50 years of experience in the fabricating of steel are embodied in the construction of Berloy Steel Lockers. Several types and sizes meet any locker need that may arise. As the different types are made to unit dimensions they may be combined in the same installation.

Berloy Steel Lockers may be installed on legs, as in the illustrations shown on the next page, or the legs may be omitted and the lockers installed on a concrete base or recessed in the walls.

Advisory Service

There are many factors to be considered in the selection of locker equipment that will most efficiently satisfy your particular needs. Amount of space to be allotted to lockers must be taken into consideration, together with number of people to be accommodated and amount of clothing to be placed in the lockers.

Berger Engineers will welcome an opportunity to co-operate with you in planning the most convenient and economical locker arrangement to meet any service requirement.

GENERAL SPECIFICATIONS FOR STEEL LOCKERS

Material—Doors and door frames shall be made of pickled cold rolled and patent leveled sheet steel. Other parts shall be made from a good grade mild annealed cold rolled and patent leveled steel. All steel to be free from buckle, scale and other imperfections and capable of taking a high grade enamel finish.

Doors—Shall be of 16-gauge steel (.0625 in. thick), adequately flanged. Formations shall consist of two right angles at lock side of door; two right angles at hinge side and one right angle formation at top and bottom. All flanges shall be welded together at corners.

Door Frames—Shall be not less than 16-gauge steel capable of taking same high grade finish as balance of locker. All parts to be of channel formation securely welded together. Side frames shall form a continuous door strike.

Locking Device—Shall be a positive automatic type locking device of the pre-locking type whereby locker may be locked while door is open, then closed without unlocking and without damaging locking mechanism. Rubber silencers shall be provided at each latching lug and at top and bottom of latching bar. Latching bar shall be of channel formation and tamper-proof. Handle shall be of the straight lift type enameled or plated and designed to provide a strike for padlock. Handles shall have padlock attachment so that handle or latching device cannot be operated when padlock is affixed (unless hereinafter specified locks are not included in these specifications). There shall be three latching points on single-tier lockers and two latching points on double-tier lockers.

Locks—All lockers shall be furnished with built-in master keyed flat key (grooved key or combination locks may be specified if desired) locks of standard manufacture with two keys for each lock. (Padlocks, either of flat key or combination type may be specified.)

Hinges—Shall be at least 2 in. wide of the five-loop, tight pin style, to be securely welded to frame and bolted to door with two bolts to each hinge. Locker doors 42 in. high and less shall have two hinges. Doors over 42 in. high shall have three hinges.

Body—Body of locker shall be of 24-gauge steel with necessary formations to make rigid locker and to insure tight joints between bolts.

Finish—All steel parts shall be thoroughly cleaned and finished with a heavy coat of neutral green enamel (school furniture brown enamel may be specified). Enamel shall be baked on at 250 degrees. Where bolt heads are visible on outside of locker, they shall be finished to match balance of locker. Bolts and nuts to be rustproofed before finishing.

Number Plates—Each locker shall have a polished aluminum number plate with black background and etched aluminum numerals not less than ½ in. high. Plates to be attached with split rivets.

Equipment—Single-tier lockers shall have one hat shelf, with beaded front approximately 9 in. below top of locker; double-tier lockers no hat shelf. All lockers shall have one double-prong ceiling hook and at least one single-prong wall hook on each side and back. All hooks shall have ball points and be cadmium plated. All hooks shall be attached with two bolts.

Ventilation—Door shall have standard louver perforations, not less than six louvers near top and bottom of both single-tier and double-tier lockers.

For Lockers Recessed in Walls

Metal Top and End Strips—Lockers are to be placed in recesses provided for them and the locker contractor is to furnish steel recessing strips 3 in. wide to cover the gap at the ends and across the top of each locker section. Recessing strips to be not less than 18-gauge finished to match lockers and with joint clips where top strips join, and caps where top and end strips join.

DIMENSIONS OF STANDARD BERLOY STEEL LOCKERS

Locker No.	Width, in.	Depth, in.	Height, in.		Locker No.	Width, in.	Depth, in.	Height, in.	
			Locker	Over all				Locker	Over all
Single Tier Lockers, Types S.S. and F.S.									
126	9	12	60	†61	156	9	12	72	†73
136	9	15	60	†61	166	9	15	72	†73
146	9	18	60	†61	176	9	18	72	†73
226	*12	12	60	†61	227	*12	12	72	†73
256	*12	15	60	†61	257	*12	15	72	†73
286	*12	18	60	†61	287	*12	18	72	†73
556	*15	15	60	†61	557	*15	15	72	†73
586	*15	18	60	†61	587	*15	18	72	†73
815	18	18	60	†61	887	*18	18	72	†73
816	*18	21	60	†61	847	*18	21	72	†73
					857	18	24	72	†73
Double Tier Lockers, Types S.D. and F.D.									
113	9	12	30	61	117	9	15	36	73
213	*12	12	30	61	253	*12	15	36	73
115	9	12	36	73	553	*15	15	36	73
223	*12	12	36	73	254	*12	15	42	85
					554	*15	15	42	85

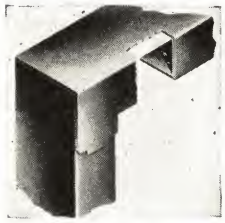
Locker No.	Compartment dimensions, in.			Height over all, in.†	Number of compartments high
	Width	Depth	Height		
Box Lockers, Type S					
222	12	12	12	73	6
252	12	15	12	73	6
221	12	12	12	61	5
251	12	15	12	61	5
555	12	15	14 2/5	73	5
551	12	15	15	61	4
521	12	21	14 2/5	73	5
920	9	12	20	61	3
924	9	12	24	73	3

*Recommended as standard by Department of Commerce.

†Without legs.

Combination Locker Type G—Made in two sizes: 5 or 6 small compartments 15 in. wide, 21 in. deep and 15 in. high; one small compartment 18 or 21 in. wide, 21 in. deep and 15 in. high; one large compartment 18 or 21 in. wide, 21 in. deep, 58 or 61 in. high. Over all without legs 33 or 36x21x73 in.

A Group of Construction Features



Frames Are Electrically Welded at Corners



Sturdy Latching Lugs with Rubber Silencers



Hinges Are Electrically Welded to the Frame



Padlock Strike Prevents Marring Door Finish



Sturdy Alloy Constructed Handles Chromium Plated

Type S. S.—Single Tier



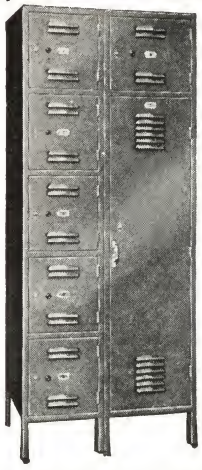
The single tier standard louver is the most popular general purpose locker.

Type F. S.—Full Louver—Single Tier



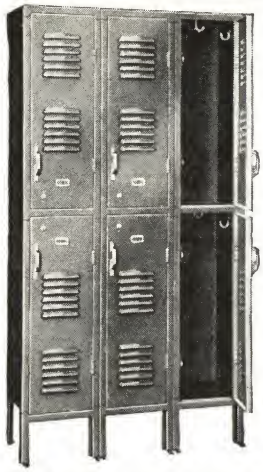
Similar to the Type S. S. but with full louvered door.

Type G—Combination



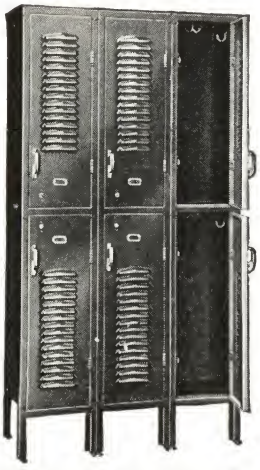
For use where individual full length lockers require too much floor space.

Type S. D.—Double Tier



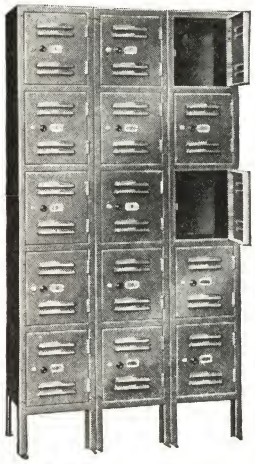
A double tier standard louver locker.

Type F. D.—Full Louver Double Door



Similar to the Type S. D. but with full louvered doors.

Type S—Compartment



Used wherever it is desirable to provide storage facilities for personal belongings other than overcoats.

Type G. L.—Gym Locker



The gymnasium locker is a combination of one single tier locker and 3-6-9 or 12 triple tier locker openings.

Golf Locker—Double Door



A spacious locker especially constructed to provide room for long coats, sweaters, etc., in addition to golf bags.

Two-Person Locker



Provides private compartments for two people in the floor area of one large single tier locker.

LOCKERS RECESSED IN CORRIDOR WALLS

In many new school buildings, locker equipment is being placed in the walls of corridors of the school than 15 lockers wide. If space requires more lockers are visible.

These details are given to show the size opening required for the recessing of locker equipment.

The height of the opening for recessed lockers should be at least 1 in. greater than the over-all height of the locker without legs.

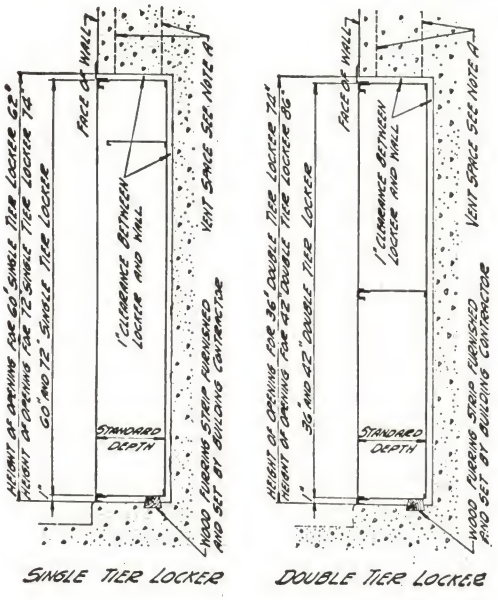
See page 1 for total height of lockers.

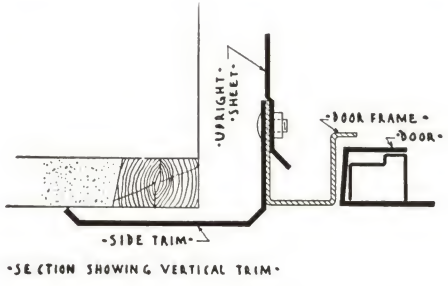
Depth of recess to be 1 in. greater than depth of locker. Width of recesses should be 2 in. greater than the over-all width of the total number of lockers in the group. Example, five lockers 12 in. wide, 12 in. deep by 60 in. high without legs, recessed in one group, the opening should be 5 ft. 2 in. wide, 13 in. deep, 62 in. high.

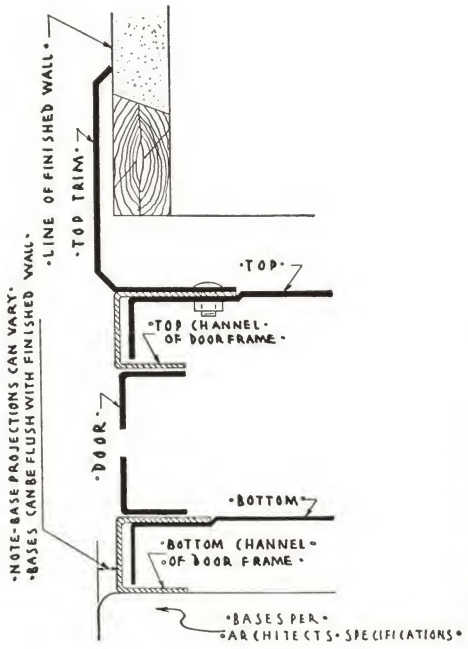
Lockers cannot be set in recesses in groups of more than 15 lockers wide. If space requires more lockers they should be assembled in two or more groups and bolted together after placing in recess.

Details for Recessed Lockers

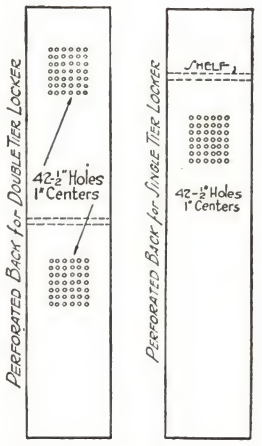
Lockers Recessed in Corridor Walls



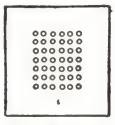




Note: Diagrams above and at left show top and side sections of lockers recessed in walls, including steel recessing strips.



Standard group perforation furnished in back, top, bottom or shelf when specified. Consists of 42 holes ½-in. diameter on 1-in. centers giving a clear perforated area of 8⅝ sq. in. Same number of holes regardless of size of locker.



TOP-BOTTOM or SHELF PERFORATION

BERLOY BASKET RACKS AND WIRE BASKETS

For gymnasium use in schools, Y. M. C. A.'s, clubs, etc., the Berloy Basket System provides a convenient and economical method of storing gym clothing.

A small basket just large enough for gym suit and shoes is provided for each individual. A large locker is used for street clothing only when the user is in the gymnasium.

The racks are made of 14-gauge angle uprights, 18-gauge shelves, 20-gauge angle dividers (between baskets) and 14-gauge cross braces. Backs of shelves are formed to provide a stop for baskets. Padlock loops and number plates are included. Racks are usually 8 openings high and 4, 5 or 6 openings wide. Spaces are for baskets 9 in. wide, 13 in. deep, 8 in. high; or 12 in. wide, 13 in. deep, 8 in. high.



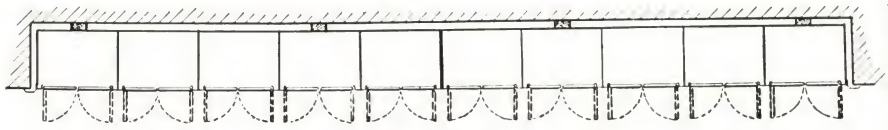
Berloy Basket Trucks are made of two standard sections of basket racks bolted back to back and equipped with casters to expedite handling of wire baskets.

Standard baskets to fit Berloy Racks are made of 16-gauge wire 1-in. square mesh with wires welded at all intersections. Baskets are provided with number plates and padlock loops. Furnished in two sizes: 9x13x8 in. and 12x13x8 in.

BERLOY CLASSROOM WARDROBES

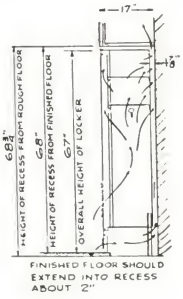


Berloy classroom wardrobes provide the essential requirements for handling pupils' clothing in elementary schools. Ample space for clothing, free circulation of air about the garments,



teacher control of doors yet with independent door operation—all at a cost surprisingly low.

A wardrobe installation consists of a series of steel units as illustrated above. Each unit is 22 in. wide by 15 in. deep by 67 in. high. Any number of units may be erected in one assembly and controlled with one lock. The usual assembly consists of ten units, to accommodate a total of 40 pupils, plus a teachers' closet, supply closet or book case when desired. Interior equipment may be as illustrated above which provides four individual compartments for coats as well as four private hat shelf compartments. Various types of interior arrangements are shown below. Ventilation of Berloy wardrobes is accomplished by louvers in the doors. When a forced system of ventilation is employed, the wardrobe doors are louvered near the bottom only and shelves and backs are perforated; also, removable louvered bases are provided, as shown above, to aid in ventilating the classroom.

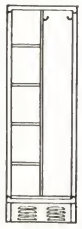


When teachers' wardrobes, supply closets or bookcases are wanted they are furnished as shown below. These units are the same dimensions as each wardrobe unit.

INSTALLATION DETAILS

Number of wardrobe units	Over-all dimensions of each unit	Over-all dimensions of each assembly	Over-all clear of recessed opening
8	22″ W. x 15″ D. x 67″ H.	14′ 8″ W. x 15″ D. x 67″ H.	14′ 10″ W. x 17″ D. x 68½″ H.
9	22″ W. x 15″ D. x 67″ H.	16′ 6″ W. x 15″ D. x 67″ H.	16′ 8″ W. x 17″ D. x 68½″ H.
10	22″ W. x 15″ D. x 67″ H.	18′ 4″ W. x 15″ D. x 67″ H.	18′ 6″ W. x 17″ D. x 68½″ H.
11	22″ W. x 15″ D. x 67″ H.	20′ 2″ W. x 15″ D. x 67″ H.	20′ 4″ W. x 17″ D. x 68½″ H.
12	22″ W. x 15″ D. x 67″ H.	22′ 0″ W. x 15″ D. x 67″ H.	22′ 2″ W. x 17″ D. x 68½″ H.

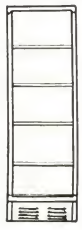
Add for teachers' closet—1′ 10″ to over-all clear of recessed opening given above.
Add for supply closet—1′ 10″ to over-all clear of recessed opening given above.
Add for book case . . . —1′ 10″ to over-all clear of recessed opening given above.



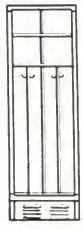
Combination Teacher's Cabinet



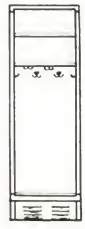
Teacher's Wardrobe



Book Cases



Type "A" Wardrobe Unit



Type "B" Wardrobe Unit



Type "C" Wardrobe Unit

SPECIFICATIONS FOR BERLOY CLASSROOM WARDROBES

Furnish and install steel classroom wardrobes as shown on drawings and of the following specifications. Each pupil's wardrobe, teacher's closet, bookcase, etc., shall be approximately 22 in. wide, 15 in. deep and 67 in. high over all, with interior equipment consisting of ..... (Here describe interior arrangement desired). Construction of wardrobes shall be on the unit principle, with all parts interchangeable.

Doors—Shall be of 16-gauge steel adequately flanged, formations consisting of two right angles at sides of door and one right angle at top and bottom. All flanges shall be welded together at corners.

Door Frames—Shall be 16-gauge channels securely welded together.

Locking Device—The opening and closing of wardrobe doors shall be individually accomplished. The control of the opening of the doors shall be in the hands of the teacher by means of a group locking device, operated by a control handle on the vertical frame member at the extreme end of the wardrobe assembly. Control handle shall be designed with padlock strike and equipped with padlock attachment (if desired, control mechanism can be equipped with built-in grooved key lock with two keys for each lock). Wardrobe doors shall have three latching points with latching mechanism of pre-locking type so that group locking device can be set with doors open, and doors closed without injury to latching mechanism; doors being automatically locked when closed. Rubber silencers shall be placed at each latching point and at top and bottom of latch bars.

Hinges—Shall be at least 2 in. wide of the full loop, type pin style, to be securely welded to frame and bolted to doors. Each door shall have three hinges.

Body—Of wardrobes shall be 24-gauge steel with necessary formations for rigidity and tight joints between bolts.

Finish—All parts shall be thoroughly cleaned and finished with a heavy coat of school furniture brown enamel baked on at 250°.

Number Plates—Each wardrobe shall have a polished aluminum number plate with aluminum background and etched black numerals. Plates to be attached with split rivets.

Ventilation—Of the wardrobes shall be accomplished by not less than six louvers at the top and bottom of each door. (If forced ventilation is to be used, specify louvers and perforations required.)

DURABILT STEEL LOCKER CO.

503 Arnold Avenue, AURORA, ILL.
SALES OFFICES IN ALL PRINCIPAL CITIES

Products

STEEL LOCKERS for all purposes.
STEEL STORAGE and WARDROBE CABINETS.
STEEL GYMNASIUM RACKS and TRUCKS.
TABLE TENNIS TABLES and Equipment.

There Is a Durabilt Locker to Meet Every Requirement



High School
Single tier lockers recessed in corridor walls



Country Club
Single tier lockers set on cement bases, double row (back to back)



Factory
Single tier lockers, free standing, double row (back to back)



Office
Single tier lockers, free standing, set against wall

For Schools and Gymnasiums—For clothing storage, the Durabilt Lockers best suited to schools and gymnasiums are the specially equipped full length or Single Tier lockers either recessed in the walls, on concrete bases, or free standing on legs. Where Single Tier lockers are not desired, we recommend the use of Double Tier Lockers. Multiple Tier Lockers, or "Box" Lockers are ideally adapted to storage of gym suits, books, sewing materials, etc. Combinations of any of these types are, of course, available. Durabilt Basket Racks and Trucks for gymnasiums, pools, etc., furnish well ventilated and secure storage facilities.

For Clubs, Lodges, Hotels, etc.—As in the case of schools, the specially fitted or equipped interiors of full length or Single Tier Lockers either recessed in the walls, mounted on concrete bases, or free standing on legs, are best suited to clubs, lodges, hotels, etc. Double Tier and Multiple Tier Box Lockers are also widely used in these instances.

For Factories, Plants, Mills, etc.—For industrial establishments having large numbers of employees and where floor space is limited, there is available, in place of the full length lockers, a combination of (Box) Lockers and Single Tier Lockers, commonly known as Compartment Lockers. The Multiple Tier Box Lockers are especially useful in storing small tools, aprons, shoes, gloves and such work-day articles.

For Offices, Stores, Banks, etc.—For the employees of such commercial establishments, the adaptation of Durabilt Steel Lockers is, of course, dependent upon the number of employees, floor space, interior decoration, etc. Any of the above mentioned lockers either singly or in the innumerable combinations possible, are certain to meet ordinary or special requirements.

Standard Locker Specifications

Doors—Stretcher levelled 16-gauge special enameling steel with square tubular reinforcement housing the latching device, with a channel formation at the vertical edge on the hinge side, and with a flange on top and bottom. This is semi-flexible construction.

Frames—Uprights, 1x1x⅛ in., smooth, hard steel angles; cross members, 1½x¾ in. 14-gauge formed steel channels, joined by two $\frac{3}{16}$-in. countersunk rivets at each corner.

Body—The remaining parts of locker are made of 24-gauge steel.

Lock Fingers—Extra heavy, reinforced fingers made to engage directly with door and so designed that door in closed position is always locked. Fingers, pick and tamper proof, and to release only by operating unlocking device. Three fingers riveted on single tier and two on double tier lockers. All fingers have rubber bumpers for silent operation.

Unlocking Device with Pre-locking Features—Lockers equipped with unlocking device so that doors in closed position are always locked unless manually unlocked. This device so constructed that raising of handle silently disengages lock fingers allowing locker door to open. Designed to operate with all standard locks, to permit pre-locking, and to prevent accidental locking of door in open position.

Handle—Stamped steel (not cast) straight lift handle with curled grip providing ample space for comfortable hand-hold and attached directly to unlocking bar. Cadmium finish (chromium optional).

Padlocking Attachment—This attachment complete with rubber silencers furnished on standard single and double tier lockers at no extra cost.

Locks—Masterkeyed locks with two keys each. Combination locks or padlocks can be furnished when specified.



Single Tier Lockers

Hinges—Full-looped, 5-knuckle "strap" hinge with concealed hinge pin.

Legs—Front legs integral with frame. Adjustable feet furnished. Rear legs also adjustable.

Tops—All lockers have flat tops unless sloping tops are specified.

Ventilation—Louvre perforations of modernistic design in doors, "safety type" 4½ in. wide, $\frac{3}{16}$ in. deep.

Equipment—Single tier, one hat shelf 9 in. from top; double tier, no shelf, 12-in. wide lockers, one double prong ceiling and three single prong side hooks. Lockers more than 12 in. wide, one double prong ceiling and four single prong side hooks. All hooks arranged for attaching with two bolts. Coat rod furnished in all lockers 18 in. and deeper when specified.

Coat rods, mirrors, comb trays, towel rods, umbrella racks, drip pans, golf ball trays, golf bag chains, drawers and other special equipment to order.

Finish—Standard No. 350 Dark Green Baked Enamel and No. 466 Brown Baked Enamel. Other colors at reasonable extra cost. Coat hooks, bolts and nuts, Cadmium or Parkerized finish. All outside bolt heads are slotless type.

Number Plates—Modernistic design, solid brass, Butler nickel finish, $\frac{7}{16}$-in. black filled numerals.

Sizes—Widths: 9, 12, 15, 18 and 24 in.; depths: 12, 15, 18, 21 and 24 in.; heights: 60 and 72 in. single tier; 30, 36 and 42 in. double tier.



Multiple Tier (Box) Lockers

Multiple Tier (Box) Lockers

Multiple Tier (Box) Lockers conform in general with specifications of standard lockers with following exceptions:

Doors—Flanged on all edges.

Frames—Same as standard lockers with 20 gauge intermediate channel cross members between door openings.

Combination Handle and Padlock Attachment—All Multiple Tier (Box) Lockers are furnished with neatly formed stamped steel (not cast) straight-pull curl handle combined with padlock attachment. When doors are closed, spring clips keep them shut.

Equipment—No hooks or shelves.

Sizes—Widths: 9, 12, 15 and 18 in.; depths: 12, 15, 18, 21, and 24 in.; heights: 12, 15, 18, 20, 21, and 24 in. Usually furnished in tiers four to six high. Also combinations of Lockers and Multiple Tier (Box) Lockers in all sizes.

Unit Controlled Group Lockers



Entire group of lockers can be locked or unlocked by operating control lever mechanism in master locker (first locker at left of group). This master locker can be locked with any type standard locker lock or padlock, either key or combination.

Group control mechanism can be made inoperative, so that lockers may be locked individually, if desired.

Ideal for corridor, classroom, or locker room installation. Gives teacher or monitor absolute control of every locker. Write for complete information, detailed drawings, specifications, etc.

W. L. EVANS CO.

Main, South and Mill Streets

WASHINGTON, IND.

EVANS VANISHING DOOR WARDROBES

EVANS VANISHING DOOR is Patented in United States, Canada, and Foreign Countries

Adaptability and Advantages

Evans Vanishing Door Wardrobes are designed for use in Schools, Hotels, Hospitals, Offices, Apartments, and Homes and offer the following advantages:

(1) Saving of space, as the doors in opening swing back into the wardrobe entirely out of the way.

(2) Ease of operation, as doors swing as easily as on common butt hinges.

(3) Quietness, with no tracks or guides to rattle and squeak.

(4) Low cost, due to the simplicity of the operating hardware.

(5) Ease of installing, due to the accuracy in cutting the wardrobe parts and the simplicity of the hardware.

(6) Perfection of ventilation, both of the wardrobes and as a medium for ventilating the rooms in which they are installed.

Ventilation

Ventilation is ordinarily provided by setting the doors up off the floor so that the air from the room (the used air always settles to the floor) is drawn into the wardrobes under the doors, passes upward through the wardrobes (drying wet or damp clothing that may be in the wardrobes) and through the wire mesh ceiling into the space above the wardrobes which is connected to the vent stacks. If the ceiling is plastered, small vents may be provided instead of a wire mesh ceiling over the entire top, or, if desired, openings may be made at the ends or backs of the wardrobes with connections to the vent stacks.

Simplicity

Simplicity was the predominant idea in designing the hinges, hence a hinge consisting of double pivoted arms, with no tracks, guides, rollers, or other intricate mechanism that might cause the doors to stick or bind, or to require repairs or adjustments from time to time. There is no adjustment provided for the hinges, as once they are properly installed (which is easily accomplished) there is no way for them to get out of adjustment. Each door is opened independently of the others and with such quietness and ease that simultaneous operation of all doors from a master door, through the use of complicated rods and levers, is unnecessary.



Wardrobe Style "X"

STANDARD WARDROBES

STYLE OF WARDROBES with doors (and ends, backs and partitions when used) made PANELED		FLUSH		Ends and backs	Partitions	Ceiling	Mullions
4′-0″ units	5′-0″ units	4′-0″ units	5′-0″ units				
I	I-5	C	C-5	Wood	Wood	Wire mesh	Yes
X	X-5	P	P-5	Plaster	None	Plaster	Yes
A	A-5	B	B-5	Plaster	None	Plaster	No

Units can be made up separately or any number of units (including 2 ft. 0 in. and 2 ft. 6 in. single-door units, as well as the 4 ft. 0 in. and 5 ft. 0 in. double-door units) can be arranged together in a single wardrobe.

Standard height of door opening is 6 ft. 0 in. and minimum depth with garment hanger interior is 2 ft. 0 in. Either "Floor" type or "Jamb" type hinges can be used on any of the wardrobes.

Interior of "racks and garment hangers" or "shelves and hooks" can be furnished at the same price, and a solid metal top in place of a wire mesh can be furnished at no extra cost.

A five-shelf bookcase can be furnished for either double or single-door units in place of pupils' interior at no extra charge.

Continuous blackboards can be furnished for wardrobes without mullions and individual blackboards on all other wardrobes.

Umbrella Racks and Overshoe Receptacles are extras.

Standard wardrobes are made to set in a recess flush with the wall; however, exposed ends and tops can be furnished for any of the wardrobes, as an extra, so they can be set against the wall if desired.

While we prefer furnishing the wardrobes complete, we will furnish the doors with hinges only, or the hinges only, if desired.

Trade Mark
"VANISHING DOOR"
Reg. U. S. A. and Canada

Specifications

All wardrobes shown or indicated on the plans shall be the Evans Vanishing Door Wardrobes as made in the white knock-down by W. L. EVANS Co., Washington, Indiana, to be installed in the white and finished by the contractor. Wardrobes shall be as follows:

Style.....made to set {*in a recess flush with the wall* / *against the wall with an exposed top*}

in.....lengths, of.....
(length of wardrobes) *(kind of wood)*

with {*panel* / *flush*} doors, {*wood* / *plaster*} ends and backs, {*plaster* / *wire mesh*} ceiling, {*with* / *without*} partitions, using {*Floor* / *Jamb*} type hinges, with interior arrangement of {*racks and garment hangers* / *shelves and coat hooks*} and {*with* / *without*} mullions between the pairs of doors.

Recess Dimensions

The recess length, from finished plaster to finished plaster, should be the total length of the units plus 1 in.; that is, 10 ft. 1 in., 12 ft. 1 in., 16 ft. 1 in., etc. The standard depth (which may be varied), is 2 ft. 2 in. from finished plaster to finished plaster, and the height is 6 ft. 4¼ in. from the floor to the finished plaster (or rough opening, if wire mesh or metal top is used) above.

Note: For continuous-door wardrobes, without mullions, the recess length is the total length of the units with nothing added.

Catalog

All wardrobes are described, with illustrations and details, in our catalog which will be sent promptly on request.

JOHN T. FAIRHURST

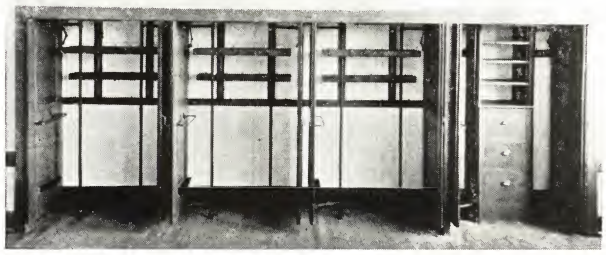
Inventor of the "Unitfold" Folding Walls

EASTERN MANUFACTURER AND DISTRIBUTOR
A. R. NELSON CO., INC.
101 Park Avenue, NEW YORK, N. Y.
AGENTS IN PRINCIPAL EASTERN CITIES

WESTERN MANUFACTURER AND DISTRIBUTOR
PRICE BUILDING SPECIALTIES CO.
35 Gilbert Street, SAN FRANCISCO, CALIF.
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For our page on Folding Partitions, see File Index

FAIRHURST (PATENTED) SCHOOL WARDROBES: SINGLE AND DUAL OPERATING DOORS



Interior of Wardrobe with Teacher's Section



Fairhurst Disappearing Wardrobes with Continuous Slate Blackboards

For the past several years, there has been a constantly increasing demand for an efficient practical wardrobe for schools, etc.

The Fairhurst School Wardrobe was specifically designed to meet this need. The operating mechanism is entirely different from any ever designed, and is the last word in simplicity and efficiency.

Important Features

Forty-five pupils can be accommodated in a space 2 ft. deep by 12 ft. wide, thereby reducing the cubage of buildings.

The depth of wardrobe is unchanged, whether doors are open or closed.

The doors pivot, there being no rollers or wheels used, making for quiet and smooth operation.

There is no track on the floor.

The left-hand door of each pair, automatically operates in conjunction with right-hand door, in the dual type.

Operating hardware is easy to adjust in case of building settlement.

Blackboards—Slate

Wardrobes, where desired, are equipped with a continuous slate blackboard with close fitting joints, giving a smooth, even writing surface, when doors are closed. A spring latch keeps them rigid. Such wardrobes are equipped with chalk rails.

For High School wardrobes, a lock is furnished which enables one to lock the entire wardrobe with one key.

Specifications

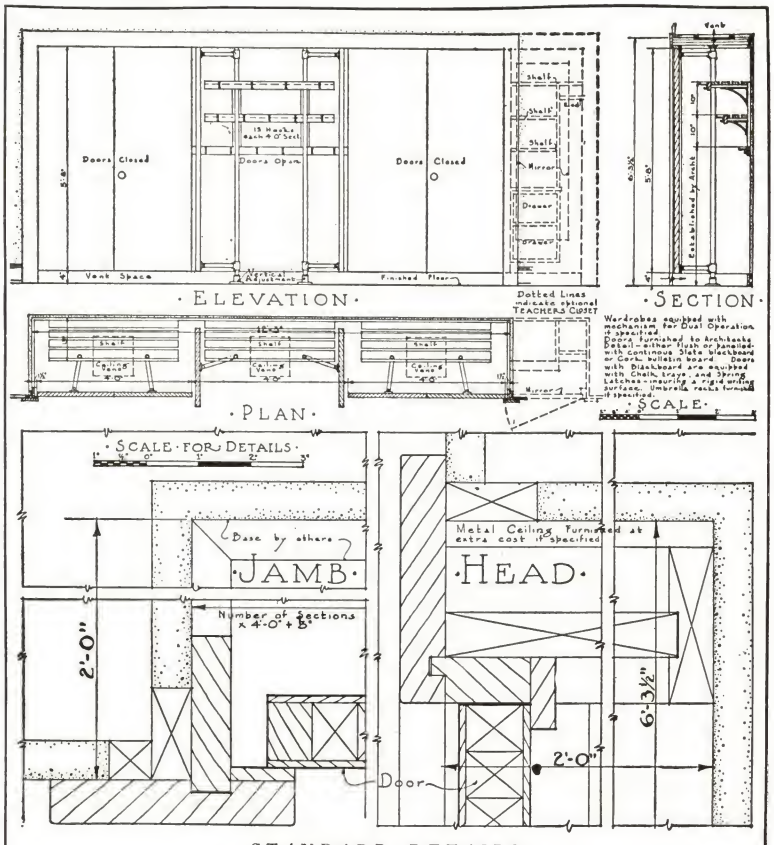
Where indicated on plans, furnish and install Fairhurst [single] [dual] operating type disappearing door wardrobes.

Operating hardware to be adjustable.

Wardrobes to be furnished complete with all hooks, shelves, etc. No track to be used on floor.

Doors to be standard [flush] [panel] design 1⅜ in. thick, veneered on built-up cores and equipped with continuous slate blackboard and chalk rails.

All hardware to be standard black finish, except hooks, latches or pulls, which are to be polished bronze.



STANDARD DETAILS

FAIRHURST PATENT
DISAPPEARING DOOR WARDROBE

A Few Typical Installations

Name	Location	Architect	Name	Location	Architect
Bronx Industrial H. S. for Girls	Bronx, N. Y.	Walter C. Martin	Orange School	Orange, N. J.	Sibley & Licht
St. Joseph's School	Maplewood, N. J.	McKenna & Irving	Oxford School	Oxford, N. Y.	Palmer Rogers
Public School	Highland Falls, N. Y.	Tooker & Marsh	School	New Milford, Pa.	L. M. Davis
Public School	Hewlett, N. Y.	L. J. Lincoln	Kensington School	Great Neck, L. I.	Guilbert & Betelle
Madison School	Madison, N. J.	Guilbert & Betelle	Folsom School	Folsom, Pa.	Charles T. Schneider
Montowese School	New Haven, Conn.	Brown & Von Beren	School	Talleyville, Del.	Massena & Du Pont
School	Woodcliff Lake, N. J.	Hacker & Hacker	Grimke School	Washington, D. C.	Nathan C. Wyeth
St. Benedict's School	Bronx, N. Y.	Gustave Steinback	Teachers College, Speyer School	New York, N. Y.	Columbia University

MEMORANDA

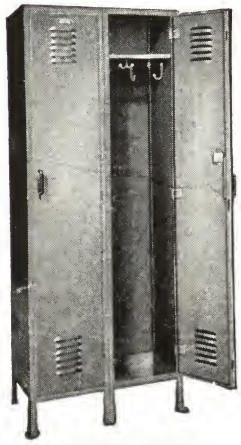
LYON METAL PRODUCTS, INCORPORATED

935 Montgomery Street, AURORA, ILLINOIS

FACTORIES: Aurora and Chicago Heights, Ill. PLANTS: Los Angeles, Calif., Jersey City, N. J.

SALES OFFICES IN ALL PRINCIPAL CITIES—CONSULT YOUR CLASSIFIED TELEPHONE DIRECTORY

A LYON LOCKER FOR EVERY REQUIREMENT



SINGLE TIER LOCKERS



DOUBLE TIER LOCKERS



BOX LOCKERS



GYMNASIUM LOCKERS



2-PERSON LOCKERS



7-PERSON LOCKERS

Basket Racks, Storage Shelving, Work Benches, Shop Equipment, Bar Racks, Enclosure Panels

Below and on the following pages is illustrated and described the complete line of Lyon Steel Lockers—lockers which are advanced in design, in construction, and in appearance. In Lyon Lockers are embodied outstanding and exclusive features, including a non-slip full loop hinge, an unusually quiet latching device, and projection welding at all vital points.

Backing up this complete line of quality steel lockers, is an organization of nearly 40 years' of experience, with offices in all principal cities ready to give immediate co-operation when plans and specifications are being prepared. Lyon Service is made complete by a trained erection force; extensive manufacturing plants at Aurora and Chicago Heights; and plants at Los Angeles and Jersey City.

For complete details on lockers illustrated on this page ask for catalog No. 233.

Single Tier Lockers

For all general clothes storage purposes.

Widths—9 in., 12 in., 15 in., 18 in.

Depths—12 in., 15 in., 18 in., 21 in., 24 in.

Heights—60 in., 72 in., plus 6 in. legs.

Box Lockers

For use wherever a small locked compartment is required for personal equipment and belongings.

Widths—12 in., 15 in., 18 in.

Depths—12 in., 15 in., 18 in.

Heights—12 in., 14⅝ in., 15 in., 18 in.

Overall Heights—66 in., 78 in.

Two-Person Lockers

Private compartments for two persons in a floor area ordinarily occupied by a single locker.

Widths—15 in.

Depths—15 in., 18 in., 21 in.

Heights—72 in. plus 6 in. legs.

Double Tier Lockers

For gymnasiums and where long garments are not worn.

Widths—9 in., 12 in., 15 in., 18 in.

Depths—12 in., 15 in., 18 in.

Heights—30 in., 36 in., 42 in. (without legs).

Overall Heights—60 in., 72 in., 84 in., plus 6 in. legs.

Gymnasium Lockers

Special combination units with small compartments for gym clothes and large locker for street apparel. A space saver.

Recommended size—Full height section: 9 in. width, 12 in. depth, 60 in. height, plus 6 in. legs.

Triple Tier Section—9 in. width, 12 in. depth, 20 in. height, plus 6 in. legs.

Seven-Person Lockers

Designed to accommodate seven persons in a minimum floor area. Also available in eight-person locker.

Width—36 in. overall.

Depth—20 in.

Height—72 in., plus 6 in. legs.

(A) ARCHITECT'S SPECIFICATIONS FOR STEEL LOCKERS

(A1) MATERIAL — Doors: Cold rolled, patent leveled steel. **Body:** Hot rolled, patent leveled, free from buckle, loose scale or other surface imperfections. Surface to be specially treated to provide most suitable base for application of enamel. **Frames:** Steel rolled or formed shapes.

(A2) FINISH—All steel parts to be thoroughly cleaned before finishing; to be finished with first quality baking enamel, baked on at 200 degrees or above. Enamel must stand rigid hammer test without flaking.

(A3) DOORS—Doors to be formed from steel not less than 16 U.S.S. gauge.

(A4) DOOR FRAME—Door frame to be of rolled steel angles 1x1x⅛ in., or formed shapes of equal strength and rigidity, with welded joints.

(A5) BODY—Body to be of not less than 24 U.S.S. gauge steel flanged at all sides to give double thickness of metal at each side connection.

(A6) HINGES—Hinges to be a type that will make proper provision against loosening of pin when locker door is subjected to extra strain or abuse. Locker doors 42 in. high or less, to have two hinges; over 42 in. high, to have three hinges.

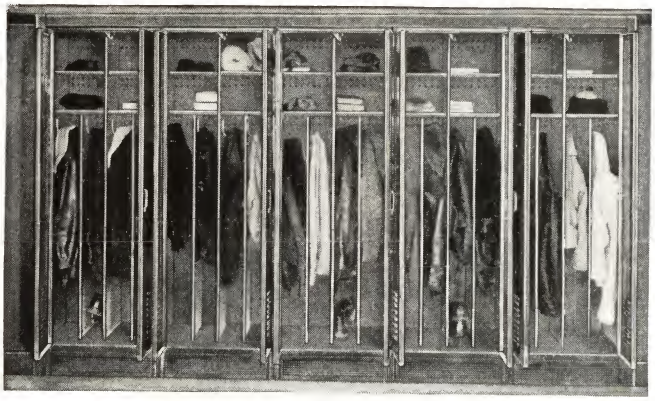
(A7) LATCHING DEVICE—All lockers are to be latched by a latching device engaging with the door jamb; locker doors 30 to 42 in. high to be locked at 2 points; over 42 in. high to lock at 3 points. (Lockers under 30 in. in height not fitted with 2 point latching device but may be so equipped at an additional cost.) Handle controlling latching device arranged so that door can be locked with padlock.

(A8) LOCKS—(Specify type of lock —flat key, combination, padlock, etc.)

(A9) NUMBER PLATES — Each locker to be equipped with a rust-proof number plate with figures at least $\frac{1}{16}$ in. high, embossed on, or etched in and finished with black enamel. Lockers to be numbered as follows. . . .

(A10) EQUIPMENT—Lockers 12 in. wide to have three single prong and one double prong coat hooks. Lockers over 12 in. wide to have four single prong and one double prong coat hooks. All hooks to have ball points, to be free from sharp corners or edges, to be galvanized or otherwise rust proofed and be fastened to locker with two bolts. All single tier lockers to be equipped with a shelf to be placed 8½ in. from top. (Lockers under 30 in. high not fitted with coat hooks.)

(A11) GUARANTEE—Product to be guaranteed free from any defect in material or workmanship.



Battery of Locker Wardrobes with Type "A" Interior Arrangement—
A Separate Compartment for Every Pupil



Lyon Locker Wardrobes Installed in Classroom Providing Neat, Orderly and Compact Clothes Storage

THE LYON LOCKER WARDROBE FOR ELEMENTARY SCHOOLS

The paramount interest of Architects and School Executives when planning a new building is "the best and most school" per dollar spent for construction and equipment. The Lyon Locker Wardrobe used in place of conventional clothes storage equipment offers an opportunity to reduce the cubic content required for these facilities as much as 45%.

Locker Wardrobes may be installed in unfinished recesses and no special framing is required. The cost of finished floors, wall and ceiling is eliminated. There is nothing else to buy as Lyon Locker Wardrobes are complete when installed.

Each unit is self-contained, being built of steel—is vermin proof and fire resisting. Doors operate independently of any floor connections. They cannot sag, warp, bind or get out of shape. Rubber silencers in door jambs, together with unusually quiet latching device, eliminates objectionable operating noises. Continuous trouble free service is assured.

Features of Construction

1. One master locking device controls all doors in a battery of up to 10 units that will accommodate 40 pupils.

2. Teacher unlocks and releases all doors in the battery. Pupils may open and close doors independently.

3. Master locking device may be set in lock position and doors closed independently. They then automatically lock.

4. Teacher's Wardrobe and Book Case may be installed at either end of a complete battery, but are operated independently of Locker Wardrobe locking device.

The master locking device eliminates lost keys and forgotten combinations, reduces clothing losses, and mix-up of children's belongings. It gives the teacher full supervision over pupils' clothing with a minimum of time and effort.

Several interior arrangements are available as illustrated below and described at the right.

Interior Arrangements

Type "A"
Four hat and book compartments, 11 in. wide, 7½ in. high, four coat compartments; outside two 6 in. wide, inside two 5 in. wide, 44 in. high; each fitted with one single prong hook.

Type "B"
Four hat and book compartments, 11 in. wide, 7½ in. high; one coat compartment 22 in. wide, 44 in. high, fitted with three double prong hooks and two single prong hooks.

Type "C"
Four hat and book compartments, 11 in. wide, 7½ in. high; two coat compartments 11 in. wide, 44 in. high, each equipped with one double prong hook and and two single prong hooks.

Type "D"
Two shelf compartments 22 in. wide, 7½ in. high; one coat compartment 22 in. wide, 44 in. high, fitted with three double prong hooks and two single prong hooks.

Type "E"
Two shelf compartments 22 in. wide, 7½ in. high; two coat compartments, 11 in. wide, 44 in. high, each equipped with one double prong hook and two single prong hooks.

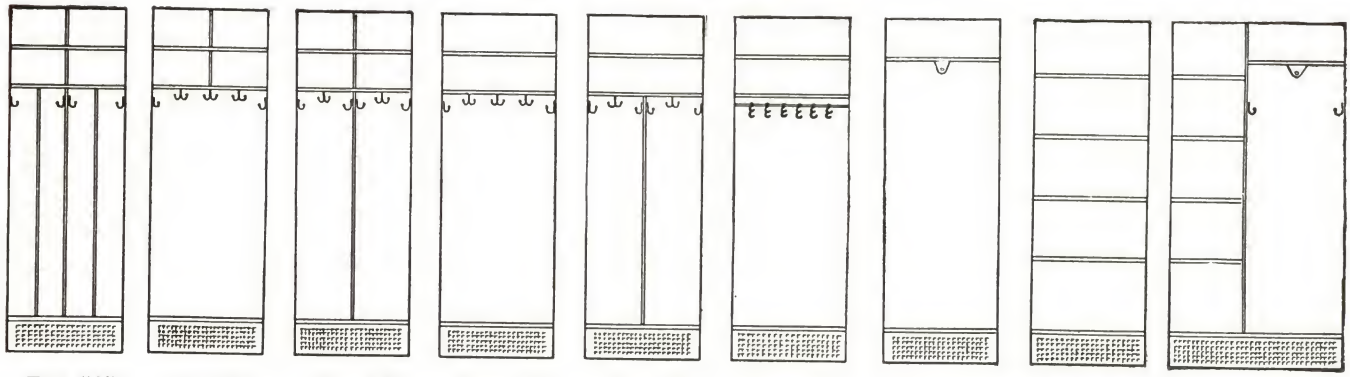
Type "F"
Two shelf compartments 22 in. wide, 7½ in. high. One coat compartment 22 in. wide, 44 in. high equipped with coat rod and six sliding hooks. This arrangement adaptable for storing six pupils' clothing in one unit.

Teacher's Wardrobe
One shelf space 22 in. wide, 7½ in. high and one coat space 22 in. wide, 44 in. high, with coat hanger rod, two single prong coat hooks and individual flat key lock.

Book and Supply Case
Four shelves adjustable on 2 in. centers. For books, classroom supplies, etc. Fitted with individual flat key lock.

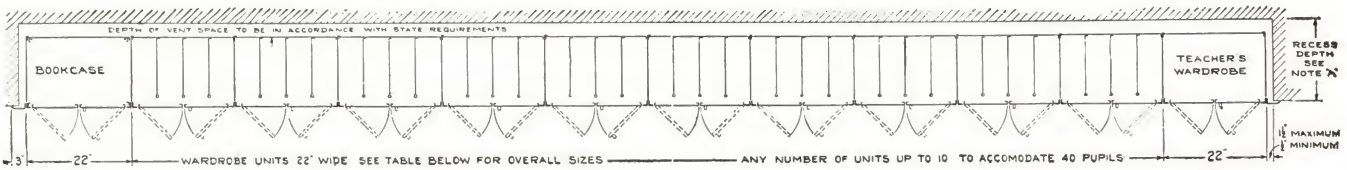
Teacher's Combination
One section for clothing, one section for books and supplies. Width overall 33 in., height 60 in. Clothes compartment 18¾ in. wide, shelf space 7½ in. high, and coat hanger rod. Equipped with two single prong coat hooks; individual flat key lock. Supply section 14¼ in. wide with four shelves adjustable on 2 in. centers.

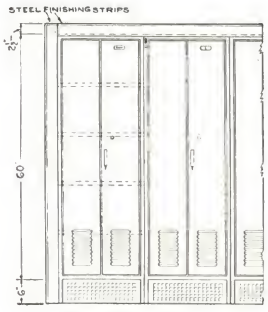
Interior Arrangements Available



Type "A" Type "B" Type "C" Type "D" Type "E" Type "F" Teacher's Wardrobe Book and Supply Case Teacher's Combination

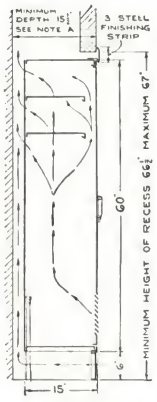
DETAILS FOR RECESSING LOCKER WARDROBES





Front Elevation

Note A: Depth of air space behind wardrobe should be in accordance with state requirements.



Wardrobe Connected with Ventilating System

With Ventilating System

Air enters through door louvres, circulates through perforated shelves and passes out through vent chamber through holes in upper part of back.

Foul air is drawn off floor through grilles at bottom of wardrobe and passes out in back of locker through vent chamber.

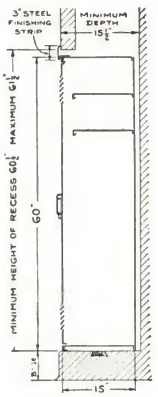
Without Ventilating System

(Shelves and backs Solid, not perforated.)

Illustration above shows locker wardrobe set on solid base provided by building contractor. Locker wardrobes are installed in recess as shown. Doors are louvred top and bottom to permit free air circulation.

When Installed Free Standing

Wardrobe may be installed against wall (not recessed) with 6" legs, grille base and solid end plates. Doors are louvred top and bottom.



Wardrobe Not Connected with Ventilating System

Floor plan sketch above of Lyon Locker Wardrobe installation is a typical layout of ten units accommodating 40 pupils with a teacher's wardrobe and bookcase at either end. Any number of units up to 10 may be used as a complete installation. Table below gives overall length of assemblies and recess required.

OVERALL LENGTH OF ASSEMBLIES

Pupils to be accommodated	Units required	Length of assembly	Length of recess
8	2	3′ 8″	3′10″
12	3	5′ 6″	5′ 8″
16	4	7′ 4″	7′ 6″
20	5	9′ 2″	9′ 4″
24	6	11′ 0″	11′ 2″
28	7	12′10″	13′ 0″
32	8	14′ 8″	14′10″
36	9	16′ 6″	16′ 8″
40	10	18′ 4″	18′ 6″

Note: If Teacher's Wardrobe, Teacher's Combination, or Book and Supply units are a part of complete installation add width of these units to above (see illustrations on page 2).

(B) ARCHITECT'S SPECIFICATIONS ON LOCKER WARDROBES

Locker Wardrobe units to be furnished (and installed) in classrooms (or corridors), in recesses provided by the contractor (or free standing) as per drawings, and specifications herewith.

(B1) SIZE—Each wardrobe unit, teacher's bookcase and wardrobe to be 22 in. wide, 15 in. deep and 66 in. high overall.

(B2) INTERIOR ARRANGEMENTS—Interior arrangement of each pupils' and teacher's units to consist of—(specify interior arrangement desired, see details on page 2).

(B3) DOOR OPERATION—Each unit shall have one pair of doors with latching device operating in connection with master lock control so that doors may be opened independently when locking device is released. When doors are independently closed and locking device set in LOCK position they will automatically lock and cannot be reopened until master lock is released. Locking mechanism to be entirely concealed and tamper proof.

(B4) MASTER LOCKING DEVICE—A group control locking device shall be provided and constructed so that the teacher or monitor has full control and access to the locker wardrobe. The master locking mechanism shall be constructed so that by releasing pin tumbler lock and raising master control switch, any or all doors may be opened independently. After doors are opened the master control switch can be set in LOCK position so that when doors are closed they will automatically lock and cannot be opened without releasing the master locking device.

(B5) CONSTRUCTION—The door frames to be of rolled or formed steel angle 1x1x⅛ in. with welded joints. Vertical members shall extend to floor to form legs and be provided with adjustable floor plates. Doors to be formed from steel not less than 16 U.S.S. gauge. Body shall have partitions to be made of not less than 24 U.S.S. gauge steel. Base plates shall be removable type and be made of 16 U.S.S. gauge steel perforated with $\frac{5}{16}$ in. square holes.

(B6) DOOR AND HINGES—Each door shall be hung with three full loop hinges with non-removable type pins. Hinges to be securely fastened to door and frame. Doors to have three point locking device with trigger catch to hold latch open when doors are open and automatically catch when doors are closed. Rubber door silencers shall be provided at all points where doors strike when closed.

(B7) VENTILATION—Shelves and backs to be perforated and bottom fitted with removable grille (when connected to ventilating system). Doors louvred at bottom only for ventilation (top and bottom of doors louvred if battery is installed on solid base or free standing).

(B8) FINISH—All steel parts to be thoroughly cleaned before finishing; to be finished with a heavy coat of baking enamel, baked on at 200 degrees. Enamel must stand rigid hammer test without flaking. Green (or brown) enamel.

LYON STEEL FOLDING CHAIRS



Lyon Posture Perfect Chairs are the most comfortable folding chair ever built. Curved seat is extra wide ($15\frac{5}{16}$ in.) and deep ($14\frac{1}{2}$ in.) The form fitting "Posture Perfect" back rest rests and relaxes the body. Folding chair weariness is eliminated.

The fact that there are no sharp edges, and the pinch proof hinge, eliminates chance of accidents. Rubber feet on all four legs protect floors. Seven styles to choose from. Finished in four harmonizing colors.

(C) Architects' Specifications on Steel Folding Chairs
(Steel Seat and Back)

(C1) TYPE—"Y" construction. "X" type of equal strength will be given consideration.

(C2) DIMENSIONS—Approximate height, 35 in. folded, 31 in. open; width, not less than 16 in. Clear width of seat not less than 15 in. Depth of seat not less than $14\frac{1}{2}$ in. Height of highest point of seat from floor not less than $16\frac{3}{4}$ in.

(C3) FRAME—Formed channel not less than $\frac{13}{16}$x½ in. No. 14 U.S.S. gauge high carbon strip steel, or tubular shapes of equal cross sectional area of metal. To consist of one piece forming back frame and front legs, with rear legs attached to back frame above the seat at hinge.

(C4) FRAME BRACES—Front and rear legs to be securely braced by formed band, not less than No. 12 U.S.S. gauge, 1½ in. wide, attached to frame at each end by not less than two solid rivets.

(C5) SEAT PIVOTS—Round screw stock with area of not less than .075 square inches. Ends to be riveted over to prevent loosening.

(C6) FEET—Live white rubber on all four legs, securely bolted. To be easily removable.

(C7) ASSEMBLY—To be assembled with cold drawn rivets, or equal, except back plate which may be bolted to frame to facilitate removal.

(C8) FINISH—All metal parts to be thoroughly cleaned—free from grease and other foreign matter—finished in first-quality enamel, baked on at not less than 325° F., and for not less than one and one-half hours.

(C9) SEAT—Curved formation from one piece of cold rolled steel not less than No. 19 U.S.S. gauge, reinforced with 1 in. x No. 12 U.S.S. gauge steel braces on sides and ⅞ in. x No. 14 U.S.S. gauge cross reinforcement—or similar formations of equal cross sectional areas of metal.

(C10) BACK—Not less than 7 in. high, formed from one piece cold rolled steel not less than No. 22 U.S.S. gauge steel.

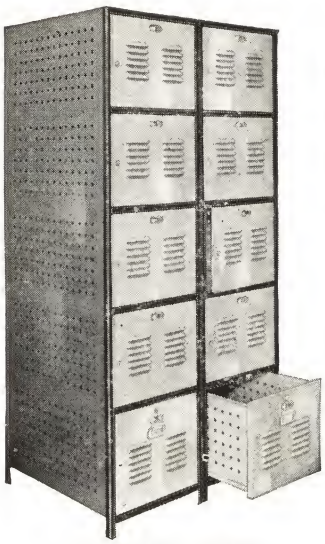
Note: Specifications on ganging, and on metal cane seat and back, upholstered seat and back, or wood seat may be secured by writing LYON METAL PRODUCTS, INCORPORATED, Aurora.

LYON FOOD STORAGE LOCKERS

It is important that the locker room—being the point of customer's contact with the cold storage locker plant—be equipped with high grade, attractive, and sanitary lockers. So important that the lockers be designed and built to remain clean and new looking—even after years of hard service.

Lyon Food Storage Lockers were only placed on the market after a thorough study of the conditions they would have to meet. This, combined with Lyon quality construction, has enabled us to provide an exceptionally satisfactory food storage locker.

Lyon Food Storage Lockers are available in two styles, Type "A" with four compartments above and a drawer at the bottom; and Type "B" with five compartments (no drawers), standard Lyon construction throughout with rigid angle steel door frames; the Lyon non-slip full loop hinge; reinforced door may be removed for cleaning; and sturdy flat key locks. Equipped with solid bottoms with flanges turned up to facilitate easy cleaning and prevent any accumulated waste from dropping on contents below.

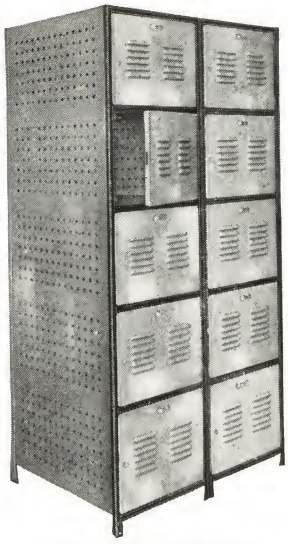


TYPE "A" LOCKER

(2 Sections Wide)

Consists of four lockers 20 in. wide, 30 in. deep, and 15 in. high with one drawer at bottom. Drawer at bottom has same approximate capacity as lockers and is equipped with strong, easy operated ball-bearing roller suspension, and drop handle.

Overall height of both Type "A" and "B" Lockers, 79 in.



TYPE "B" LOCKER

(2 Sections Wide)

Lyon Type "B" Food Storage Lockers consist of five lockers—four at top 20 in. wide, 30 in. deep, 15 in. high, and one at bottom 20 in. wide, 30 in. deep, and 16 in. high. Fitted with rigid, reinforced swinging door with flat key lock.

Finish

Durable and sanitary baked enamel. Doors finished in an attractive, soft cream. Door frames in a harmonizing green. Body in a neutral grey which provides a light interior that reflects light. This combination of colors presents a beautiful and inviting appearance.

Ventilation

Correct and adequate air circulation is assured by twelve special type Lyon Louvres in each door or drawer, and ½ in. round hole perforations on sides and back of each locker.

(D) ARCHITECT'S SPECIFICATIONS ON FOOD STORAGE LOCKERS

(D1) SIZE—Overall size, 5 lockers high: 20 in. wide, 30 in. deep, 79 in. high. Individual lockers: 20 in. wide, 30 in. deep, 15 in. high—bottom 16 in. high.

(D2) MATERIAL—Sheet steel material to be best mild annealed, patent leveled, free from buckle, loose scale or other surface imperfections. Surface specially treated to provide most suitable base for application of enamel.

(D3) DOORS—Fabricated from one piece 16 gauge steel. Top, bottom, and hinge side of door flanged back for extra strength, while lock side to have special vertical reinforcement welded to door.

(D4) FRAME—Upright and horizontal members of door frame 1x1x⅛ in. hard steel angles, are welded to provide rigid one piece construction. Rear upright members 1x1x⅛ in. hard steel angles.

(D5) HINGES—Full loop hinges to provide a method of fastening that will assure perfect and permanent door alignment. Door to be removable, quickly replaced without fear that door alignment and operation will be affected.

(D6) BODY—24 gauge sides and back; 20 gauge bottoms.

(D7) NUMBER PLATES—Each locker furnished with a rust-proof number plate with figures ½ in. high, embossed on, and finished with black enamel.

(D8) BOLTS AND NUTS—All bolts and nuts to be cadmium plated to resist rust.

(D9) BOTTOM DRAWERS—Drawers suspended on four ball-bearing rollers—two on rear of drawer and two at front of suspension channel.

(D10) LOCKS—Each compartment fitted with grooved key locks, master keyed (padlock attachment optional). Drawers fitted with flat key lock, master keyed.

(D11) VENTILATION—Each door and drawer front to be provided with twelve louvres. Sides and back of compartments and drawer perforated with ½ in. holes on 1½ in. centers.

(D12) FINISH—All steel parts to be thoroughly cleaned before finishing and finished with high grade enamel, baked on at correct temperatures to remain clean and bright through years of hard service.



STORAGE SHELVING

Variety of all sizes and types for storage of supplies, equipment. For complete details ask for catalog No. 118.



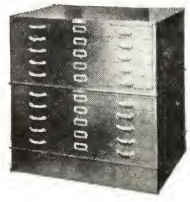
SHOP EQUIPMENT

Shop Benches, Tool Cabinets, Tool Stands, and miscellaneous steel shop equipment give years of extra service, will not splinter, warp or shrink. Resists fire. Ask for catalog No. 323.

STORAGE CABINETS

Wide variety of storage cabinets for office, classroom, vocation department.

Li-flat Cabinet illustrated below offers exceptionally fine storage facilities for drawings, blueprints, maps, etc. Catalog No. 421.





FRED MEDART MANUFACTURING CO.

Steel Lockers, Wardrobes, Shelving and Cabinets, Gymnasium and Playground Apparatus, Gym Seats and Swimming Pool Equipment

326 W. Madison Street
CHICAGO, ILL.

3562 DeKalb Street
ST. LOUIS, MO.

16 W. 61st Street
NEW YORK, N. Y.

Engineering and Sales Service in Principal Cities—Consult Your Telephone Directory

For Our Page on Basket Ball Backstops, see File Index

MEDART STEEL LOCKERS

Doors—Made of 16-gauge sheet steel, reinforced by flanging top and bottom edges, and channeling side edges. Doors finished with depressed panel.

Frames—Made of 16-gauge sheet steel, formed into channel shape with rolled inner edge. Upright and cross members electrically welded together, making a true, square and rigid frame.

Body of Locker—Backs, sides, tops and bottoms are made of 24-gauge steel.

Locking Device—Three-point rubber-cushioned contact in single-tier lockers; two-point contact in double-tier lockers. Doors are prelocking self-latching type.

Door Handle—Automobile type, made of non-rustable aluminum alloy, die cast.

Locks—As selected from catalogue.

Hinges—Double tier locker doors hung on two hinges; single tier locker doors hung on three hinges; 72-in. doors on four hinges. Hinges bolted to inside of door and electrically spot-welded to frame. Bolts equipped with lock washers.

Legs—Adjustable front legs to overcome floor irregularities. According to width of lockers and grouping, legs are spaced 30 to 36 in. apart with clearance of 4⅞ in. above floor.

Cabinet Base—An extra 4⅞-in. cabinet base can be furnished at an additional charge.

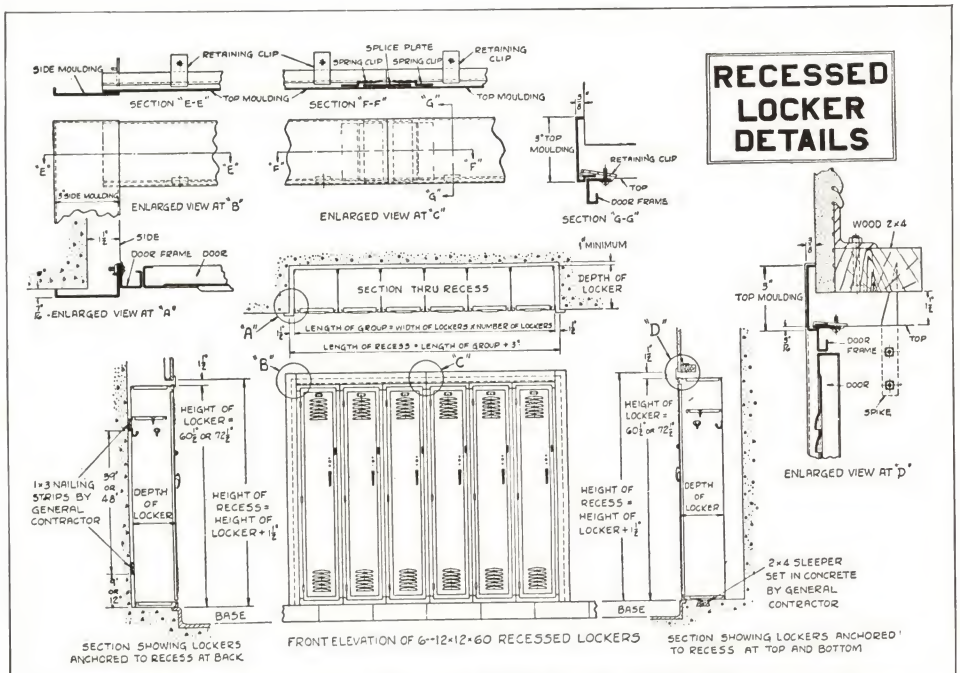
Ventilation—All standard locker doors are louvred at top and bottom to provide ventilation 3 louvres top and bottom for 36 and 42-in. lockers, 6 louvres top and bottom for 60-in. lockers and 9 for 72-in. lockers.

Standard Finish—School furniture brown or olive green. All parts are thoroughly cleaned before enameling; enamel is baked on to hard finish.

Hooks—Made of malleable iron, cadmium plated. Lockers 12 and 15 in. deep have 3 single-prong wall hooks and one double-prong ceiling hook; lockers more than 15 in. deep have single-prong wall hooks.

Shelves—Rolled in front and bolted to sides. Multiple tier lockers do not have shelves. Extra shelves can be provided.

Numbering—All lockers are equipped with aluminum number plates with black etched numerals.



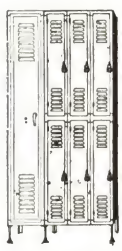
These scale drawings show method of recessing lockers and give detailed dimensions of lockers and of recesses to accommodate them. Further information will be furnished on request.



Single Tier
9x12x60"
9x15x60"
*12x12x60"
*12x15x60"
*12x18x60"
*15x15x60"
*15x18x60"
*12x12x72"
*12x15x72"
*12x18x72"
*15x15x72"
*15x18x72"
*18x18x72"
18x24x72"



Double Tier
9x12x36"
9x15x36"
*12x12x36"
*12x15x36"
*15x15x36"
12x12x42"
*12x15x42"
*15x15x42"



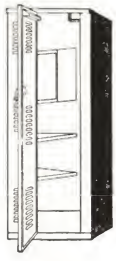
Gym Suit
(Shown with Single Tier)
9x12x30"–2 tier
9x12x24"–3 tier



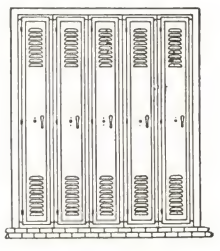
Box
*12x12x12"–5 tier
*12x12x12"–6 tier
*12x15x12"–5 tier
*12x15x12"–6 tier
*15x15x15"–4 tier
18x18x12"–5 tier
18x18x12"–6 tier



Two-person
15x15x72"
15x18x72"



Golf
24x20x60"
Private inner compartment, 3 shelf spaces, hooks and coat rod, golf ball rack.



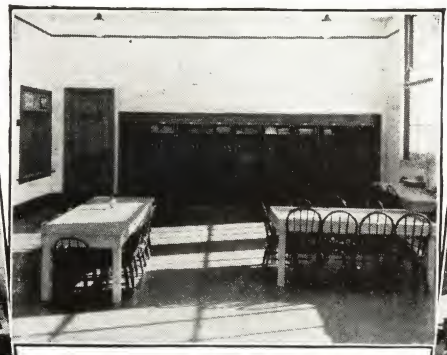
Recessed Lockers
Moulding furnished to match lockers. See recess details

Locker sizes given are width by depth by height.
Standard finishes: Olive green or school furniture brown.

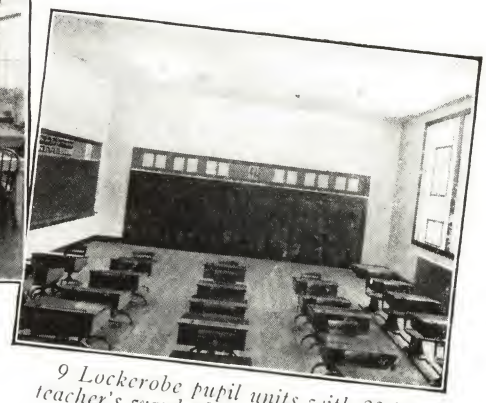
STEEL WARDROBES FOR GRADE SCHOOL CLASSROOMS



9 Lockerobe pupil units with 22-in. bookcase on left and 22-in. teacher's wardrobe on right.



Kindergarten with 9 Lockerobe pupil units.



9 Lockerobe pupil units with 22-in. teacher's wardrobe on right.

Pioneered by 'Medart'

THE

LOCKEROBE

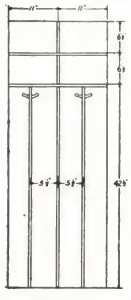
TRADE MARK REGISTERED

Medart Lockerobes—the original Steel Wardrobes with simultaneous door control establish a new standard in Wardrobe Equipment. Hundreds of installations during the past 6 years best evidence the national approval accorded this product. Constructed entirely of steel, the Lockerobe is strictly sanitary, fire resisting, termite-proof, and easy to keep clean. Write for complete details.

General Information

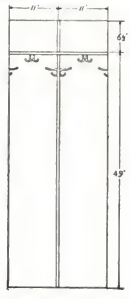
A Lockerobe classroom assembly consists of a multiple of pupil units, each of which is enclosed by one pair of simultaneously controlled doors. Various interior arrangements for the storage of pupils' clothing, books, etc., are available. (See below.) The Lockerobe is a complete, self-contained assembly with all parts finished at factory and interchangeable. A simple door operating mechanism eliminates future maintenance problems. May be had recessed or free standing. When recessed, Lockerobes require a recess depth of only 16 in. This dimension when contrasted to depth required by conventional type wardrobes represents an unusual opportunity to reduce classroom cubage and cut building costs, recesses may be left unfinished. Lockerobes serve as an important adjunct to room ventilation systems. In the classroom, air can be withdrawn through grille base and after passing between back of units and recess wall, can be expelled through conventional exhaust pan or duct.

Interior



Interior "A"

Provides 4 individual hat and 4 individual coat compartments in each pupil unit. Popular. Accommodates 4 pupils.



Interior "B"

Provides 2 individual hat compartments and 2 individual coat compartments. Recommended for military schools, etc. Accommodates 2 pupils.

Partial List of Towns in Which Lockerobes Are Installed

Augusta, Ga.
Beatrice, Neb.
Branchville, S. C.
Buffalo, Ky.
Catskill, N. Y.
Charlotte, N. C.
Chattanooga, Tenn.
Chicago, Ill.
Cincinnati, Ohio
Cleveland, Ohio
Collyer, Kan.
Danville, Va.
Gadsden, Ala.
Gaffney, S. C.
Gulfport, Miss.
Halifax, Va.
Havre De Grace, Md.
Healdsburg, Cal.
Hempstead, N. Y.
Hillside, N. J.
Jackson, Miss.
Jasper, Ind.
Johnstown, Pa.
Knoxville, Tenn.
Logan, Utah
Long Beach, N. Y.
Minneapolis, Minn.
Mt. Pleasant, Mich.
Odessa, Del.
Oregon City, Ore.
Overton, Tex.
Pensacola, Fla.
Ponca City, Okla.
Putnam, Conn.
Rochester, N. Y.
Rock Hill, N. C.
St. Louis, Mo.
Shakopee, Minn.
Sikeston, Mo.
Smyrna, Del.
South Bridge, Mass.
Terrell, Tex.
Thomasville, N. C.
Urbana, Ill.
Warm Springs, Cal.
Washington, D. C.
Wayne, Neb.
Westfield, N. J.
Wheeling, W. Va.

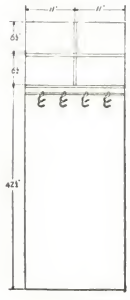
Simultaneous Door Control

Special attention is directed to the Medart method of simultaneous door control. All doors are opened and closed by one person (the teacher or monitor) simultaneously. Thus eliminating any need for children of elementary school age to operate the doors of the individual units. School officials approve this feature which eliminates possibility of injury, noise and confusion in the classroom and needless delay in bringing the class to order or upon dismissal.

Engineering Service. Cost; Miscellaneous Data

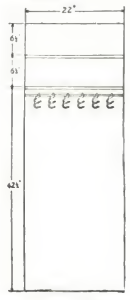
The initial cost of Lockerobes is surprisingly low; future maintenance cost is avoided. Interested architects are urged to consult with "Medart" for complete details including competent engineering service concerning the adoption of Lockerobes to the individual school problem.

Arrangements



Interior "C"

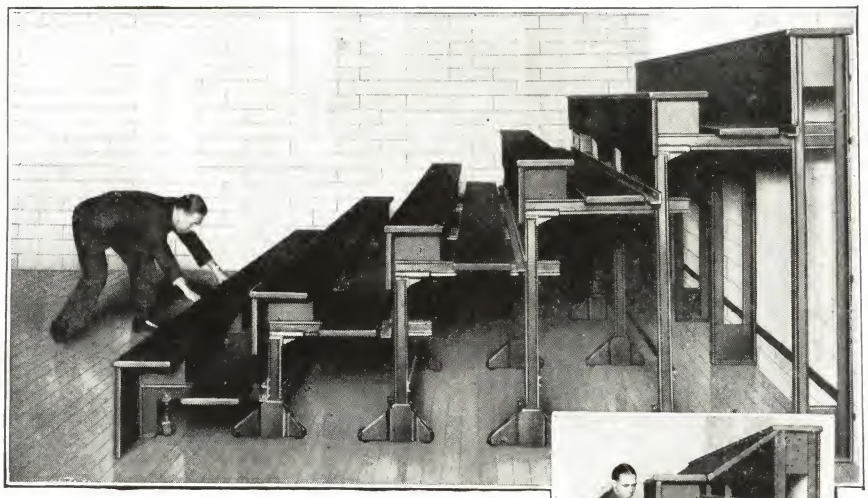
Provides 4 individual hat compartments and a coat rod with 4 sliding coat hooks. Accommodates 4 pupils.



Interior "D"

Provides 2 full width hat shelves and coat rod with 5 or 6 sliding coat hooks. Very popular. Accommodates 5 or 6 pupils.

MEDART TELESCOPIC GYM SEATS (Wall Attached Type)





With Floating Locomotion

Outstanding among the many features of this modern seating is the ease with which seats glide in and out of the 'nested' position, in one operation. Use of the telescopic principle eliminates the need for any counterbalance mechanism (springs) and consequently there is nothing to lift up or to pull down; no closure panel and no possibility of any parts of the seat falling on the operator. Understructure is of steel; all lumber parts are full length (not pieced) and are of substantial thickness (even the risers are solid, full length selected lumber—no flimsy material used anywhere in the construction). When Medart Gym Seats are installed in a gymnasium it is possible to quickly and easily provide a bench with a comfortable back rest for dances or special classes of instruction by simply withdrawing the one (lower) row of seats from the 'nested' position, thus eliminating the need for folding chairs or other auxiliary seating. Medart Gym Seats are fully approved and recommended by the structural engineering department of one of our leading universities as a result of an exhaustive analysis and of actual tests made by these authorities. Write for catalog.

DIMENSIONS—MEDART WALL ATTACHED TYPE GYM SEATS

Number of rows	Floor space		Height Open or Closed
	Extended	Closed	
3	4 ft. 6 in.	2 ft. 8 in.	3 ft. 0 in.
4	6 ft. 4 in.	2 ft. 8 in.	3 ft. 10 in.
5	8 ft. 2 in.	2 ft. 8 in.	4 ft. 8 in.
6	10 ft. 0 in.	2 ft. 8 in.	5 ft. 6 in.
7	11 ft. 10 in.	2 ft. 8 in.	6 ft. 4 in.
8	13 ft. 8 in.	2 ft. 8 in.	7 ft. 2 in.
9	15 ft. 6 in.	2 ft. 8 in.	8 ft. 0 in.

Specifications

As shown on plans and as covered by these specifications, contractor will deliver (and install) the following standard (and special) length units of Medart Telescopic Gym Seats, as manufactured by Fred Medart Manufacturing Co., St. Louis, Mo., or the approved equal in the opinion of the architect.

...standard 14-ft. long units, ...rows high
...special..... long units, ...rows high

Gym Seats shall operate on the telescopic principle, which requires only one operation for opening (or closing) and shall permit one or more rows of seats to be opened for use, while the remaining rows are left in the closed or 'nested' position. When closed, Gym Seats shall not extend from the wall in excess of 2 ft. 8 in.; when in open position, Gym Seats shall not extend from wall in excess of ... (see table below). The height of the Gym Seat in the closed or 'nested' position shall not exceed the height of the top seat when the Gym Seats are fully open ready for use.

Each standard length unit shall not exceed 14 ft.—and shall consist of seat boards, foot boards and risers (kick boards) of first quality, clear lumber which shall be carefully sanded, finished with rounded corners and bolted securely to steel members. All wood to be stained, shellacked and varnished.

The understructure shall be entirely of steel with uprights or posts of formed steel, double channel construction for maximum strength. Each standard length of seat to be supported by four such uprights or posts which are transported in and out of the closed or 'nested' position by means of a multiple of rubber rollers with bronze bushings. When live load is applied, the added weight shall automatically overcome the tension of the compression springs attached to each upright, thus bringing the uprights or posts in direct contact with the floor. All steel parts shall be finished with two coats of baked-on enamel.

Each unit shall be provided with two special heavy duty lock bolts which attach to standard gym floor plates when unit is in open or closed position.

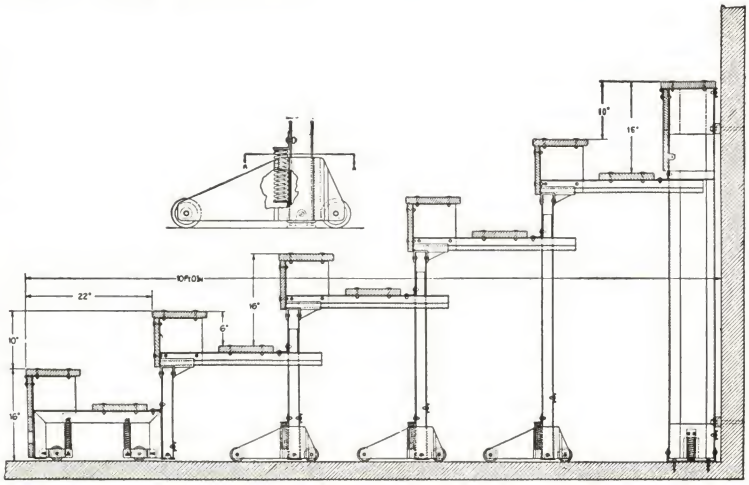
To provide proper circulation of air, steel grilles shall be inserted in the riser (kick board) of the first (bottom) and top row of seats wherever a unit of Gym Seats is placed in front of a heating or ventilating unit. (...units shall be furnished with grilles.)

MEDART *MOVABLE* TYPE TELESCOPIC GYM SEATS

For the occasional need or special condition when auxiliary seating, that can be quickly and easily moved from one location to another is required. Seats operate on the approved telescopic principle. Ideal for use on the stage; in combination lecture and classrooms; to encompass the boxing and wrestling ring—and wherever else spectators must be accommodated with safe, practical, satisfactory seating. Easily moved to and from the storage room.

Write for Catalog

Fully illustrated and described in Catalog GS-2.



Six Rows of Wall Attached Type Gym Seats in open position.

S. H. HAMM & SON

Slate Blackboards, Roofing and Structural Slate

BANGOR, PA.

SALES REPRESENTATIVES IN PRINCIPAL CITIES

SUPER-SLATE BLACKBOARDS

Characteristics and Advantages

Slate Blackboards have long been the quality standard of marking surfaces with architects, school boards and educational authorities. The characteristics of slate and particularly SUPER-SLATE which make it so valuable for blackboards are described below:

Non-absorption—The dense, compact structure of SUPER-SLATE renders it one of the least absorptive materials and it is ideally suited for blackboards since it is impervious to moisture and can be quickly cleaned and maintained in a sanitary condition. Tests by the U. S. Bureau of Standards have shown that the greatest absorption of slate either by weight or volume is one hundred and fifty-one thousandths less than one per cent.



TRADE-MARK

Toughness—An important requirement for any blackboard material is toughness and elasticity in order that it may withstand strain, shock, blows and the effects of building settlement. This resistance, slate—because of its laminated structure—possesses to a remarkable degree, as has been proven by many laboratory tests as well as by thousands of installations.

Non-expansion—Another of the special qualifications of slate for blackboards is its lack of expansion and contraction. Heat cold and other atmospheric changes do not affect it. This characteristic eliminates the necessity of strips to cover joints. Joints can be made practically invisible when installed and will remain that way. No allowance need be made for expansion or contraction.

Color and Erasing—The color of slate is natural and uniform from face to back of material. There is no surface coloring to wear off nor artificial color to bleach. It will retain its color indefinitely. Its dark color provides a perfect contrast with chalk thereby eliminating eyestrain.

The removal of chalk marks is as important in a blackboard as their application. Slate erases perfectly.

Sizes and Thicknesses

SUPER-SLATE Blackboards are carried in stock in standard 3 ft., 3 ft. 6 in. and 4 ft. widths (heights), which widths should be adhered to whenever possible for economy and prompt shipment. For special conditions, slate may be cut to practically any dimensions required. Thickness ranges from ¼ to ⅜ in. This variation in thickness does not prevent the slabs from being properly set with true, uniform surfaces and flush joints.

They weight approximately 5½ lbs. per sq. ft.

SPECIFICATIONS FOR THE INSTALLATION OF SLATE BLACKBOARDS ON PLASTERED WALLS WITH PLASTIC COMPOUND

(A) Correlative Work

(A1) Include Under Carpentry Work—

(1) The carpenter contractor shall furnish and fasten securely to the walls kiln-dried wood ground strips *(3/4 in. thickness generally to finish 1/4 in. above face of brown coat unless thickness is modified by number of coats and kind of plaster)* at top, bottom and ends of all spaces to be occupied by blackboards. Ground strips shall be securely fastened *(by nailing for stud walls; expansion shields for brick, masonry, cinder or concrete block walls; toggle bolts for hollow tile and terra cotta walls)* on not more than 24 in. centers. Grounds for blackboards shall be set absolutely true, level and plumb and in perfect surface and alignment.

(2) Securely fasten to these grounds, trim including chalk trough and apron as detailed, which trim shall be furnished by the millman and set by the carpenter.

(3) After the blackboards are installed, carpenter contractor shall firmly secure a quarter round as detailed to trim and chalk trough in order to hold slate blackboards in place and shall be held strictly accountable for any damage to slate work in so doing.

(A2) Include Under Plastering Work—

Note: This section may be omitted if wood wedge method of installation is used instead of setting in plastic.

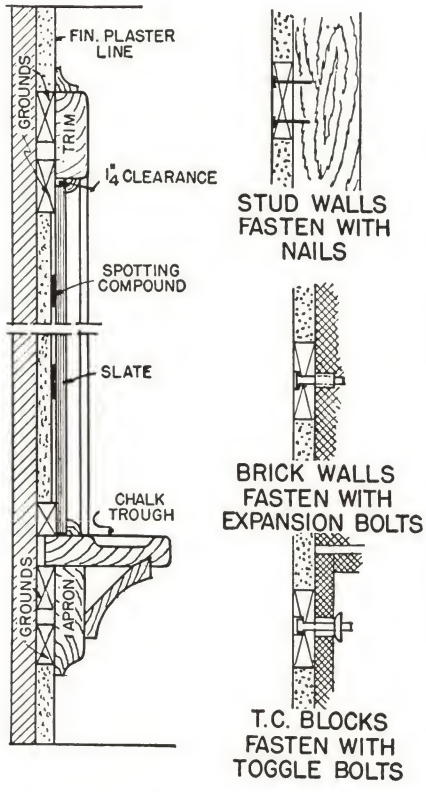
(1) This contractor shall plaster all spaces back of blackboards. Finish coat of plaster may be omitted but the brown coat shall be floated to a true plane within ¼ in. of the face of ground strips.

(2) Before plastering unfurred outside walls where blackboards are installed, the masonry shall be given two coats of damp-proof paint.

(A3) Include Under Painting—

(1) All blackboard trim, except loose quarter round moulding shall be completely finished before blackboards are set. Loose quarter round shall be finished, except last coat which shall be applied after the blackboards are set and moulding is attached.

(2) Any varnish or finish, which this contractor, through accident or otherwise, applies to blackboard surface, shall be removed at this contractor's expense.



Typical Blackboard Section and Details for Fastening Grounds to Various Types of Walls

(B) Blackboard Installation

(B1) Include Under Slate Work—

(1) This contractor shall furnish and install SUPER-SLATE Blackboards *(specify height)* in all classrooms and other portions of the building as shown on the plans.

(2) This slate shall be even in color, free from natural markings or imperfections; each piece shall be honed to a perfect writing surface; joints shall be straight, true and carefully fitted.

(3) Length of slabs forming each space shall be in accord with Simplified Practice Recommendations No. 15 of the U.S. Department of Commerce as follows:

Up to 5 ft., one slab; over 5 ft., but not exceeding 9 ft., two slabs; over 9 ft., but not exceeding 13 ft. 6 in., three slabs; over 13 ft. 6 in., but not exceeding 18 ft., four slabs; over 18 ft., but not exceeding 22 ft. 6 in., five slabs; over 22 ft. 6 in., but not exceeding 27 ft., six slabs. The slabs forming each space shall be approximately equal in length, i. e., there shall not be a variation greater than 3 in. in either direction of what would be exactly equal spacing.

(4) After plastered surfaces have hardened and immediately before installing slate blackboards, this contractor shall apply an approved fibrous bituminous plastic compound to form a 1 in. wide strip of compound approximately $\frac{1}{16}$ in. thick against grounds and a 2 in. wide strip approximately ¼ in. thick full height of all vertical joints. At least four spots of this same compound ¼ in. thick and approximately 5 in. in diameter shall be distributed uniformly in back of each slab of blackboard. Each slab shall then be pressed firmly into plastic to form a solid even surface.

(5) Apply an approved jointing compound of waterproof glue to the adjoining joint edges of each slab, and tap the slab being set tight against adjoining slab to form as tight a joint as possible.

(6) After completion of installation, uneven joints shall be carefully finished so that adjoining surfaces shall have the appearance of one continuous slab.

ANDREW HOFFMAN

5034-5038 South State Street, CHICAGO, ILL.

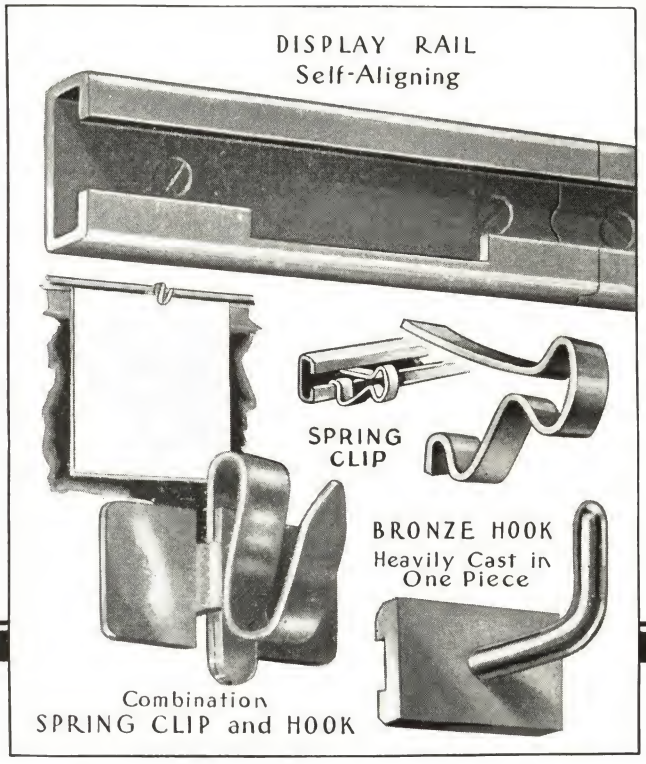
For Casement Window Hardware, see File Index

THE IDEAL MAP AND DISPLAY RAIL

Used in Schoolrooms, Offices, Conference Rooms, Hospitals

The Andrew Hoffman display rail is applied to the walls on old or new trim at a convenient height, for the purpose of hanging map cases, maps, charts, posters, bulletins, drawings, and things of a similar nature.

Display rail 15c per foot.
Solid bronze hook 10c each.
Combination bronze hook 7c each.
Spring clip 2c each.
Average shipping weight of the above items is 5 oz. per foot.



Description

This display rail consists of a substantial steel rail of special channel section, in which slide hooks and clips. In schoolrooms, the rail is screwed to the trim at the top of the blackboards. In rooms without blackboards, it is screwed at a convenient height to trim, grounds, or directly to the wall. The screws, which we furnish, are closely spaced for maximum strength.

To provide for the most efficient hanging of various objects, there are three types of hooks: one of very strong one-piece bronze construction that will support the heaviest map cases without turning or twisting—furnished, one to each 5 ft. of rail; and a lighter spring-steel combination hook and spring clip that supports lighter maps, charts, posters, bulletins, etc.—furnished, one to each 1½ ft. of rail.

Either hook may be removed from the rail by lifting it out through the notch. The bodies of hooks are *inside* rail; consequently hooks slide freely without interference, and appearance is neater. Additional hooks may be inserted through the notches.

Available also is a spring fastener which is inexpensive, and can be easily inserted, moved along the rail or taken out.

Sizes

The display rail comes in sections 30 in. long. It is ⅞ in. wide and $\frac{5}{16}$ in. deep.

If the rail is to be mortised, the mortise should be only ¼ in. deep to prevent hooks from scratching the trim.

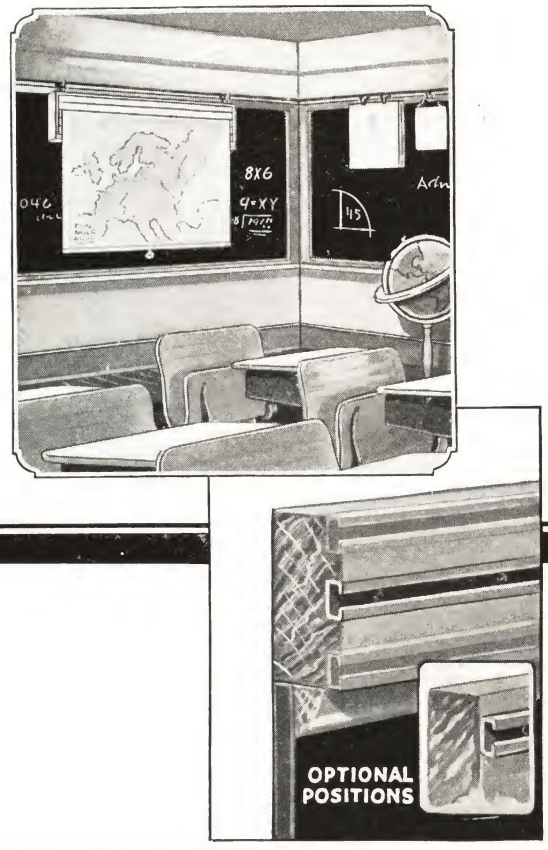
Finish

The display rail is finished in statuary enamel to harmonize with the trim customarily used.

Advantages

This display rail is designed and built to give a lifetime of satisfactory and trouble-free service.

Thumb tacks and cork pads are eliminated by the use of the combination hook and spring clip. When the spring hook is lifted, the poster, etc., may be placed beneath, where it is held firmly, yet without injury, by spring pressure, which is, we believe, the only permanently satisfactory method.



The rail may be mortised or rabbeted in any position on the face of the trim or may be screwed to the surface. The rail should be mortised in a groove to attain the most attractive appearance. A mortised rail blends into the ensemble so completely as to be very inconspicuous. See the optional positions in small drawing.

The sections of the rail are self-aligning, through the use of the dovetail joint, thus assuring the smooth passage of the hooks and clips. Being firmly fastened with screws, the rail cannot pull loose.

It is extremely versatile in its use: the two different hooks provide for the display or hanging of anything from a sheet of paper to a map case weighing 100 lbs.

Specifications

The contractor shall furnish and install above all blackboard spaces Ideal Map and Display Rail equipped with hooks, (or combination spring clips and hooks, or spring clips) as manufactured by Andrew Hoffman, 5034 South State Street, Chicago, Illinois, or equivalent. The Display Rail shall be securely fastened to blackboard trim or grounds or directly to wall in accordance with the manufacturer's instructions.

MUNDET CORK CORPORATION

65 South 11th Street, BROOKLYN, N. Y.

INSULATION FACTORIES: HILLSIDE, N. J., BROOKLYN, N. Y.

BRANCHES

ALBANY, N. Y.
ATLANTA, GA.
BOSTON, MASS.
CHICAGO, ILL.
CINCINNATI, OHIO
DALLAS, TEX.
DETROIT, MICH.
HOUSTON, TEX.
KANSAS CITY, MO.
LOS ANGELES, CAL.
MEMPHIS, TENN.
NEW ORLEANS, LA.
PHILADELPHIA, PA.
ST. LOUIS, MO.
SAN FRANCISCO, CAL.
SYRACUSE, N. Y.

CANADA

MUNDET CORK AND INSULATION, LTD., MONTREAL, QUE., TORONTO, ONT., WINNIPEG, MAN., VANCOUVER, B. C.

PORTUGAL

MUNDET ET CIA, SEIXAL

GREAT BRITAIN

MUNDET CORK PRODUCTS, LTD., LONDON, ENGLAND

DISTRIBUTORS

BALTIMORE, MD., McCormick Asbestos Co.
BUFFALO, N. Y., Claxton Asbestos Co.
CHARLOTTE, N. C., Geo. A. White & Co.
CLEVELAND, OHIO, Standard Asbestos & Mfg. Co.
HARTFORD, CONN., The Hartford Cement Co.
MINNEAPOLIS, MINN., Asbestos Building Materials Co.
NASHVILLE, TENN., John Bouchard & Sons Co.
NORFOLK, VA., F. H. Gaskins Corp.
OKLAHOMA CITY, OKLA., Standard Roofing & Material Co.
PORTLAND, ORE., Pacific Asbestos & Supply Co.
RICHMOND, VA., Virginia Insulation Co.
SALT LAKE CITY, UTAH, Louis A. Roser
SEATTLE, WASH., Pioneer Sand & Gravel Co.
TULSA, OKLA., Standard Roofing & Material Co.
UTICA, N. Y., Geo. Weisenberger

For other Mundet products, including Cork Insulation and Cork Flooring Tile, see File Index

MUNDET "JOINTITE" BULLETIN BOARD

Uses

Mundet "Jointite" Cork Bulletin Boards are used extensively in schools, colleges, factories, offices, hotels, club rooms and, in general, wherever a soft and durable surface must be provided for the posting of notices. They are easily penetrated by thumbtacks.

Description

Mundet "Jointite" Cork Bulletin Boards are composed of a layer of composition cork ¼ in. thick which has been securely cemented to a backing of ¼-in. 3-ply, wood insert, compoboard. It is a neutral brown in color and makes an ideal background in its natural state.

Advantages of Mundet "Jointite" Bulletin Boards

Cork bulletin boards have several advantages peculiar to the material of which they are constructed. They are so much superior to the conventional wooden bulletin board as to render the latter obsolete. The chief reasons the cork bulletin boards are so superior to those of wood construction are:

(1) A thumbtack can be pushed in with little effort but is held with a firm grip.

(2) No knife or tack puller is necessary to remove thumbtacks.

(3) Due to the resiliency of cork, holes made by thumbtacks have a tendency to gradually close. This results in a far better appearing board than one in which there are many unsightly holes.

Sizes

Mundet "Jointite" Cork Bulletin Boards are furnished cut to any size required. The standard mounted sheets measure 4x6 ft. Unmounted, the cork bulletin board can be furnished in rolls measuring 6x60 ft. Cork bulletin boards can be installed by any carpenter. They are easily cut with a saw.

Specifications

Note: Due to the nature of the material, it is usual to include same in the Carpentry Section of the General Specifications as follows:

Cork Bulletin Boards—Furnish and install Mundet "Jointite" Cork Bulletin Boards where indicated on the drawings and as specified.

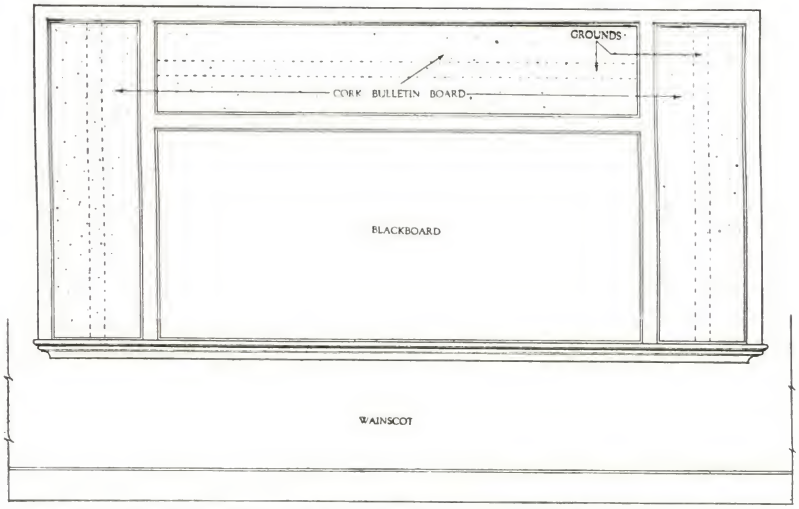
Note: Specifications should further contain a schedule of locations and sizes.

All bulletin boards shall be Mundet "Jointite" Cork Bulletin Boards as manufactured by MUNDET CORK CORPORATION, Brooklyn, N. Y.

The Material shall be a full ½ in. in thickness, consisting of a ¼-in. layer of composition cork reinforced with a burlap back, securely mounted by cementing same to a 3-ply backing of compoboard with wood core.

All frames shall match the trim and shall have loose cover mould around all cork bulletin boards. All cork bulletin boards shall be securely nailed at edges before cover mould is installed.

Grounds—Set 2-in. wide grounds, of such thicknesses as will be required to conform with that necessary for adjacent trim, to receive Mundet "Jointite" Cork Bulletin Board as called for on drawings, or in specifications. All grounds shall be set straight and level.



A Suggestion for Installation of Mundet "Jointite" Bulletin Board—Front Elevation

PITTSBURGH PLATE GLASS COMPANY

Manufacturers of Seloc Glass Chalkboard

Grant Building, PITTSBURGH, PA.

DISTRIBUTORS

PITTSBURGH PLATE GLASS COMPANY (See General Catalog in Sweets for Warehouse Addresses) and W. P. FULLER & COMPANY on the Pacific Coast

SELOC GLASS CHALKBOARD

The Chalkboard Material with a Permanent Writing Surface

SELOC GLASS CHALKBOARD OFFERS ADVANTAGES NEVER BEFORE AVAILABLE IN CHALKBOARD MATERIAL

Permanent, Black Writing Surface

Seloc is black structural glass into which has been introduced an abrasive. This abrasive is inherent, extending throughout the body of the glass. Seloc therefore assures a superior, permanently black writing surface which will never deteriorate with use. In most chalkboard materials, the rough texture is only surface deep and therefore loss of effective writing surface results from continued use.

Easier Erasure

Most chalkboard materials require a hard scrubbing with the eraser to remove chalk marks sufficiently for satisfactory subsequent writing. But Seloc, because of its special abrasive-studded surface, is easily and thoroughly cleaned with a single stroke of the eraser.

Absolutely Non-absorbent

The common recommendations of chalkboard manufacturers against washing the boards do not apply to Seloc. It can be washed as often as desired. The unpleasant odors of dissolved glue and other chalk ingredients which frequently cling to chalkboard in consequence of washing, can never be present in Seloc. It will not absorb either odors or moisture.

Never Becomes Slick and Shiny

Because of the abrasive it contains, Seloc chalkboard never becomes slick and shiny of surface with extensive use. Thus, Seloc eliminates the usual skipping of chalk over smooth areas of board, and the difficulty of reading which so often results from reflection of light on shiny boards.

Easy Installation

Seloc Glass Chalkboard is easily installed in a manner similar to that used for ordinary chalkboard materials. Replacement of present boards with Seloc can be accomplished quickly and simply.

Savings in Maintenance Costs

Since Seloc is glass, it will not pit with age. No re-coloring is ever required. It eliminates the necessity for periodic re-grinding or re-surfacing to maintain a satisfactory writing surface. These factors make Seloc's first cost its only cost. Substantial savings in maintenance costs result.

A Tested Product

Seloc Glass Chalkboard has been thoroughly tested in use . . . and has provided better chalkboards wherever specified. Offering as it does so many outstanding advantages, Seloc, the ageless glass chalkboard, merits the serious consideration of all architects interested in school and college work.

General Information

Heights—42 in. standard; 36 to 48 in., inclusive, at slight extra cost.

Lengths—Standard lengths 36 to 72 in., inclusive.

Thickness—$\frac{11}{32}$ in., plus or minus $\frac{1}{32}$ in.

Weight—4.8 (approx.) lbs. per sq. ft.

SPECIFICATIONS FOR SELOC

General Conditions—The "General Conditions" of the contract are a part of this specification.

Scope of the Work—Furnish and install all blackboards shown on drawings and specified hereunder.

The Plastering Contractor shall furnish a brown coat of plaster over the rough wall areas behind the blackboards. This plaster shall be screeded flush with face of grounds, to a true and even surface.

All grounds, trim and chalk rails shall be furnished and set by others. The grounds are to be set true and properly secured to walls, to adequately support the blackboards. Quarter rounds of other cover mouldings are to be fitted by others, but installed by the blackboard contractors.

All blackboards shall be set against felt cushions ¼ in. thick by 1 in. wide and each section shall rest on lead cushions spaced not over 24 in. on centers. All abutting joints shall be backed by felt strips.

Clearances of ¼ in. are to be allowed over and above actual specified blackboard dimensions, except where two slabs of blackboard sections are to abut each other.

Materials—All blackboards shall be "Seloc" as made by the PITTSBURGH PLATE GLASS COMPANY, of $\frac{11}{32}$ in. thickness and of size as indicated on the drawings or hereunder.

These blackboards shall be a deep black color throughout their entire thickness, and they shall have uniformly incorporated therein a suitable abrasive material which shall cause the surface to remain permanently of the same uniform texture during the life of the board.

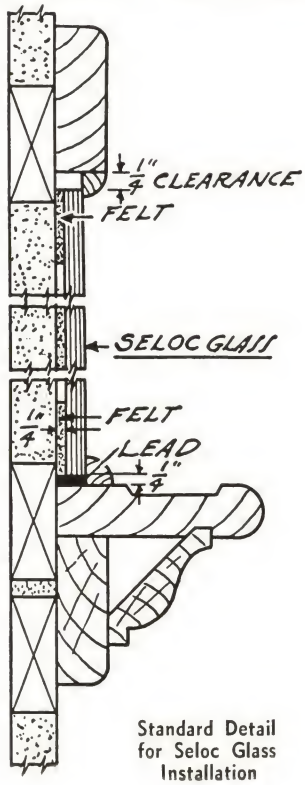
Finish of face of glass to be obtained by mechanically grinding until a true plane is produced.

Workmanship—All pieces shall be set plumb and true with even flush joints.

Where abutting joints occur in blackboard sections, those edges of the glass shall be ground square and shall be fitted as close as possible.

Where abutting joints occur, they shall be filled and pointed with a material approved by the blackboard manufacturers.

At the completion of the work contemplated under this contract, this contractor shall thoroughly clean the blackboards of all foreign matter.



Standard Detail for Seloc Glass Installation

MEMORANDA

NATURAL SLATE BLACKBOARD COMPANY

PEN ARGYL, PA.

For Branch Offices, Refer to Catalog of Structural Slate Company

Advantages of Slate for Blackboards



The natural characteristics of slate quarried in Pennsylvania make it particularly suitable for blackboard purposes. The smooth, even dark finish provides an ideal writing surface. Slate is one of the least absorptive of nature's products. This assures a surface which will not warp under repeated cleanings. The first cost of natural slate blackboards is the only cost.

The "Pyramid" brand, which is the name given to all slate furnished by the NATURAL SLATE BLACKBOARD COMPANY, guarantees strict enforcement of the most rigid rules of workmanship and protects the architect from receiving imported blackboards.

Specification for Natural Slate Blackboards

Installed by "Spotting and Bedding" Method on Plastered Backgrounds

1. The contractor for this work shall furnish natural slate blackboards and arrange for their complete installation in every class room and in all other portions of the building where so shown or noted on the plans, sections or detail drawing or herein specifically called for.

2. On all walls where blackboards occur they shall be run full from trim to trim, as indicated, exclusive of bulletin boards which shall be (here state size of bulletin boards, if any, at end of blackboards, and later specify the bulletin boards). The heights of the slate itself shall be as follows: (State heights of slate and whether or not tack strips are to be located above in certain rooms, also specify by locations and areas all blackboards required that are not shown by the drawings).

3. Where wardrobes occur, place slate blackboards (surfaced on each exposed surface) in each door, as shown on details, or as follows: (Here describe slate and other panels, etc., unless wardrobes are selected from manufacturers' catalogues showing slate panels and are specified or provided for accordingly).

4. If any sliding blackboards are shown or called for include and install slate in same (state whether or not double faced) and wherever indicated or called for install swinging blackboards with double faced slate, including metal frames, (standards or brackets) etc., complete. Consult manufacturers' descriptions for types, finish, etc., and refer to same).

5. The slate shall be quarried in the United States and be of the finest quality selected blackboard stock, even in color, free from ribbons or imperfections that would impair its use or durability as a marking surface and be not less than ¼ inch nor more than ⅜ inch thick. A maximum deviation of $\frac{1}{16}$ inch from this thickness will be permitted when an average thickness of at least ¼ inch is maintained except that double surfaced slate shall be of uniform thickness. The exposed face of each piece of slate shall be carborundum surfaced to a perfect writing plane, in accordance with the Natural Slate Blackboard Company's Standards, and the approval of the architect, and each piece shall be labeled with the "Pyramid" Trade-Mark. Slate shall be furnished with joints ground straight, true and neatly fitted.

6. The lengths or lineal dimensions of the slate slabs in each assembly of blackboards shall be in accordance with the U. S. Department of Commerce Simplified Practice Recommendations No. 15, as follows: Up to 5 feet, one slab; over 5 feet, but not exceeding 9 feet, two slabs; over 9 feet but not exceeding 13 feet 6 inches, three slabs; over 13 feet 6 inches but not exceeding 18 feet, four slabs; over 18 feet but not exceeding 22 feet 6 inches, five slabs; over 22 feet 6 inches but not exceeding 27 feet, six slabs. The joints in each assembly shall be in accordance with the same Departmental Recommendation namely, at or near the middle of the space for two slabs, one-third of the space for three slabs, one-fourth of the space for four slabs, one-fifth of the space for five slabs and one-sixth of the space for six slabs. By "at or near" is meant that any slab may be used which places the joint within three inches in either direction of what would be exact spacing of the units stated.

Specifications for Carpentry Work

7. The Carpenter Contractor will furnish and securely set all wood grounds to accurate levels and true planes. All wood trim will be furnished by the millman and set by the carpenter. The complete installation shall be in accordance with the architect's details, and with the printed directions, of the NATURAL SLATE BLACKBOARD COMPANY, consistent herewith.

8. Fasten securely to the walls, kiln-dried wood "ground" strips (¾ inch thick or other thicknesses according to number of coats and kind of plastering) at top, bottom and ends of all spaces to be occupied by blackboards (and intermediate strips as detailed where bulletin boards or tack-strips abut or adjoin blackboards).

9. To the "ground" strips, securely set (1⅜ x 3½ inches) trim, slightly rounded at edges (or as detailed) at the sides and top of all blackboard spaces. (Specify trims in connection with bulletin boards, tack-strips, cabinets, closets, etc., wherever they occur adjacent to blackboards).

10. At bottoms of blackboards place (5½ x 1¼ inches) countersunk chalk troughs carefully leveled, extending under blackboards and securely nailed to "ground" strips and to (4½ inches) molded aprons. Chalk trough shall be (molded or rounded) on all exposed edges and returned at ends (or left open for cleaning), as detailed. (If wire covers are to be installed in chalk troughs specify here).

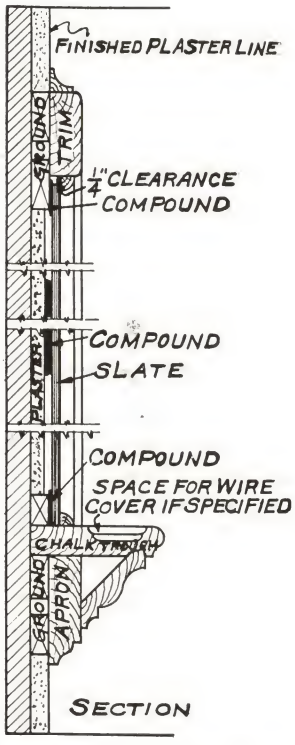
11. Where slate is set against walls or partitions the space to be occupied by the blackboards will have been plastered by the plastering contractor with a scratch and brown coat, wood or carpet floated, to within not less than ¼ inch of the back of the slate. When these surfaces have hardened, but not until immediately previous to the setting of the slate, they and the backs of the wood grounds, or the backs of the blackboards shall be bedded and spotted with "Pyramid" "Spotting and Bedding Compound", or other approved fibrous, bituminous, plastic compound to a thickness averaging $\frac{1}{16}$ inch against wood and ¼ inch against plaster. Each slab of the blackboard shall be pressed into place to form a substantial contact with this material on the edge bedding, joint strips and spotting so that the blackboards will form a solid, continuous, even plane, jointed between each slab as hereafter described. The edge bedding against wood shall consist of one inch wide strips of the compound. The joint bedding shall be a two-inch wide strip the full height of each vertical joint and centered thereon. The size of the "spots" shall be from 4 to 6 inches in diameter and the spots shall be placed at intervals not exceeding 18 inches in each direction.

12. As each slab of slate is set there shall be applied to the adjoining joint edges of slate a thin strip of Pyramid jointing compound, and the slab being set shall be tapped tight against the preceding slab till the joint is as nearly invisible as possible.

13. As the blackboards are set, a (⅝ x ⅝ inches quarter-round) shall be well secured to surrounding trims and chalk trough, firmly holding slate in place. Any free-standing end trims and all tops shall be back-banded with (⅞ inches) coved scotia mold (1¼ inches if on frame walls).

14. The slabs at joints between slate, upon completion of setting, shall if uneven be thoroughly honed and finished without humps or abruptness until they have the appearance of a smooth plane with adjoining surfaces.

15. All slate blackboards shall be left whole, sound and clean, ready for use and in every way a complete and satisfactory installation.



Typical Detail of Blackboard Installation

Showing back plastering and setting, compound at edges, and "spots"

FOUNDED 1865

NEW YORK SILICATE BOOK SLATE CO., INC.

TELEPHONE
PEnnsylvania 6-9177

421 Seventh Avenue, NEW YORK, N. Y.
FACTORY: HOBOKEN, N. J.

CABLE ADDRESS
"Silibook New York

INSTALLATION OF NEATSNAP EXTRUDED-ALUMINUM FRAMING MATERIAL

The installing of *Neatsnap* Extruded-Aluminum Blackboard Framing is a simple procedure, readily understood by the average workman. Once started, the work progresses rapidly.

Neatsnap
EXTRUDED ALUMINUM BLACKBOARD FRAMING
FORMERLY CALLED KALMAN

Dill Patents

Furnished in standard extruded finish, or dull alumilite finish. Also in steel with one shop-coat of paint, so that it can be painted to match on job.

Before the interior partition plastering is applied, the continuous galvanized steel-grounds are fastened securely to the partition with nails, toggle bolts or expansion bolts as conditions may require. After the slate-setter has fastened the slate in position by the use of steel clips, the extruded metal is cut to exact lengths, mitered where necessary, and with end-plates attached, the mouldings are clipped or sprung over the steel clips and the installation is complete.

The work can be done by any skilled carpenter accustomed to doing trimming or finishing. Neat workmanship is essential to bring out the full beauty of the framing. No special tools are required, except a metal saw and a soft-metal file. Making good mitres is no problem.

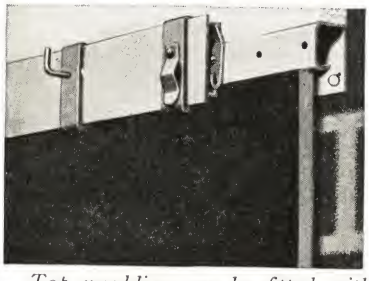
The spacing of the various clips is indicated in the details on preceding page. Grounds arrive on the job with holes 4 in. on centers, to allow for any variance in the spacing.

Complete instructions are provided for the proper installation of these materials.

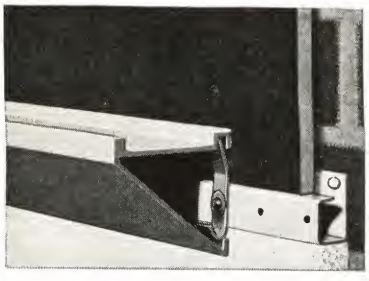
MODERN SCHOOLROOMS

Old-fashioned wooden blackboard framing, which has changed but little since the day of the one-room schoolhouse, is entirely out of keeping with the present-day trend in school interiors.

Neatsnap Extruded-Aluminum Blackboard Framing, with its simple clean-cut lines, is on a par with the most modern interior finishing. Practically everlasting, these attractive metal frames with their dull or bright finish, as desired, have a logical place in the up-to-date school building.



Top moulding can be fitted with slides, as shown, for holding papers, maps, etc.



Note the way blackboard sets firmly upon grounds. No other extruded frame has this feature.

A *Neatsnap* Extruded-Aluminum Blackboard Frame consists of an assembly of chalk tray and side and top mouldings of extruded metal, together with continuous steel grounds and the necessary clips. This metal frame harmonizes perfectly with other up-to-date appurtenances, and it contributes much to the modernity of the school room.

Although *Neatsnap* Extruded-Aluminum Blackboard Framing is made of an expensive grade of rustless metal which need not be painted, the cost is actually less than for high-grade oak millwork.

These metal frames are simple to install—carpenters can erect them readily. Cutting to proper lengths on the job is done as easily as if hardwood were used.

They cannot be defaced by the usual childish pranks, and are easily kept clean and sanitary with soap and water. They never become nicked, scarred or chalk-soaked.

Neatsnap Extruded-Aluminum Blackboard Framing never permits the slate to become loose as a result of shrinkage or warpage. The slightest amount of shrinkage will cause slate set in wood frames to separate and become uneven at the joints, a condition not only unsightly but one that causes excessive chalk breakage, and eventual cracking and chipping of the slate itself. With *Neatsnap* Metal Framing the joints between slate slabs remain as close and tight as when first installed. Rigid clips, gripping both front and back of the slate, insure perfect alignment and smooth, tight-butted joints. Furthermore, slate is easier to install in *Neatsnap* Metal Frames.

The present-day movement toward fire-safe schools demands the use of fireproof materials whenever possible. Metal blackboard frames are in line with this trend.



The neat, attractive appearance of the Neatsnap Extruded-Metal Blackboard and Corkboard Framing is at once apparent. The metal framing is easily kept clean, and has a permanent, pleasing lustre.

A FEW OF MANY NEATSNAP INSTALLATIONS

Pierre S. DuPont High School, Wilmington Del.
Amanda E. Stout Grade School, Reading, Pa.
Northwest Jr., High School, Reading, Pa.
Consolidated School, Kennett Square, Pa.
Southwest Jr., High School, Reading, Pa.
Queens College, Flushing, L. I., N. Y.
High School, Bayshore, L. I., N. Y.
St. Hyacinth School, Detroit, Mich.
La Fayette High School New York, N. Y.
Public Schools: 191, 86, 197, 113, 115, 142, 134, 124, 119, 160 26, 95, 246, New York, N. Y.
Central High School for Needle Trades, New York, N. Y.
Concord School, Cincinnati, Ohio
Girls Vocational High School, Woodridge, N. J.
Goshen High School, Goshen N. Y.
Clarion State Teachers College, Clarion, Pa.
Ferndale School, Johnstown, Pa.
California State Teachers College, California, Pa.
Grade School, Mt. Lebanon, Pa.
Brown University, Providence, R. I.

SPECIFICATIONS FOR NEATSNAP EXTRUDED-ALUMINUM BLACKBOARD FRAMES

Blackboard Frames

(To be incorporated in Carpentry and Millwork Specifications)

This Sub-contractor shall furnish and erect all Blackboard Frames, Corkboard Frames and Corkboards.

All materials for blackboard and corkboard frames shall be of aluminum throughout as manufactured by New York Silicate Book Slate Co., Inc., and shall be furnished in stock lengths to be cut on job to suit.

Continuous steel ground shall be set to dimensions specified, and shall be accurately aligned and securely fastened to rough wall by means of expansion bolts, toggle bolts or galvanized nails as conditions may require and as directed by Architect. Fastenings shall be made through holes provided and shall be applied at intervals of not over 12 in. under slate and not over 20 in. elsewhere. The chalkboards must rest firmly on the grounds for their entire distance.

(For installation of slate see slate specifications)

After slate has been installed, extruded metal chalk tray and mouldings shall be cut, mitred and fitted on job, and sprung into place over steel clips provided. Ends of chalk tray shall be closed by the attachment of metal end plates.

Before erecting these materials, this Sub-contractor shall verify the spacing of chalk tray and moulding clips and shall attach additional clips where their spacing exceeds the maximum specified.

Corkboards shall be a full ½-in. thick and shall consist of ¼-in. tan composition cork reinforced with a burlap back, cemented to a waterproofed compressed fibre backing. Wall area in back of corkboards must be plastered so that surface of cork will be flush with surface of continuous steel grounds. Corkboards must be cut to accurately fit recesses formed by grounds.

Trap winders, map hooks and paper clips shall all be die cast and exactly match the finish of aluminum specified. The number of each to be used shall be determined by the architect.

(To be incorporated in Slate and Seloc Glass Specifications)

Slate or Seloc Glass Chalkboards

All slate or Seloc Glass shall be not less than ¼-in. nor more than ⅜-in. in thickness at any point. All exposed surfaces shall be "Honed Finish." Edges shall be machine dressed accurately to straight and sharp rectangular lines. Sections of slate or Seloc Glass shall be not less than 5 ft. horizontally, except where otherwise permitted by Architect.

Before manufacture, this Sub-contractor shall take field measurements of all recesses formed by continuous steel grounds in place, and will be responsible for fitting slate properly. *(See Carpentry and Millwork Specifications.)* The clearance between edges of slate and steel grounds at sides and top shall preferably not exceed ⅛-in. and a clearance in excess of ¼-in. will be cause for rejection.

Slate shall be erected by setting lower edge on continuous steel grounds and fastening accurately into place with proper clips so that surface of slate is exactly flush with surface of grounds. Spotting compound shall be applied to rough wall, midway between top and bottom of slate, behind joints and at horizontal intervals of approximately 2 ft., to provide a solid backing.

Adjustable clips (secured with machine screws) and moulding clips (secured with sheet metal screws) shall be staggered and spaced not more than 16 in. apart, with extra clips at corners of slate sections. Chalk tray clips (secured with sheet metal screws) shall be spaced not over 12 in. apart, with an extra clip at ends. Clips and screws are to be furnished by Contractor for blackboard frames, but shall be installed by this Sub-contractor.

As each section of slate is set, a thin strip of jointing compound shall be applied to the joint edges and the slate tapped tight against the preceding section until joints are as nearly invisible as possible.

ALUMINUM REVERSIBLE EASEL BOARDS FOR ART ROOMS, SPECIAL WORK ROOMS, ETC.

More Flexibility for the Functions of the Art Rooms, Special Work Rooms, Nature Study, Craft or Exhibition Rooms

This board is a companion to our Neatsnap Blackboard Framing and will be finished to match. Its use can be extended to any type of room, whether it be in a new or old building. It has the following advantages:

1. Can be used as a blackboard or a cork bulletin board in the normal vertical position or in one of three easel positions. The blackboard side is available in either black or green.

2. Can be used as a corridor exhibition board. Each section is easily movable and can be hung or stood in the corridor.

3. The top of the cabinet or shelf can be used as a work board for nature study, clay modeling, etc.

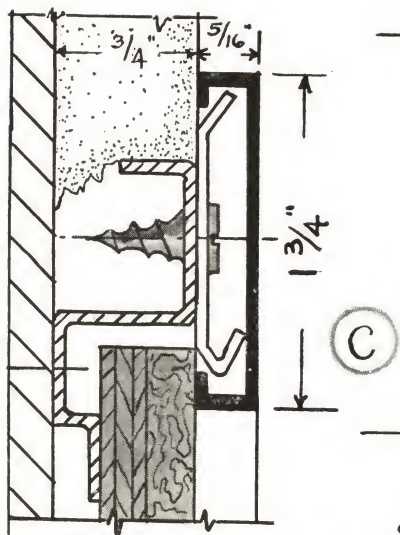
4. Ideal as an art easel. The drawing or painting papers can be easily attached to the board with thumb tacks and used in any one of three easel positions.

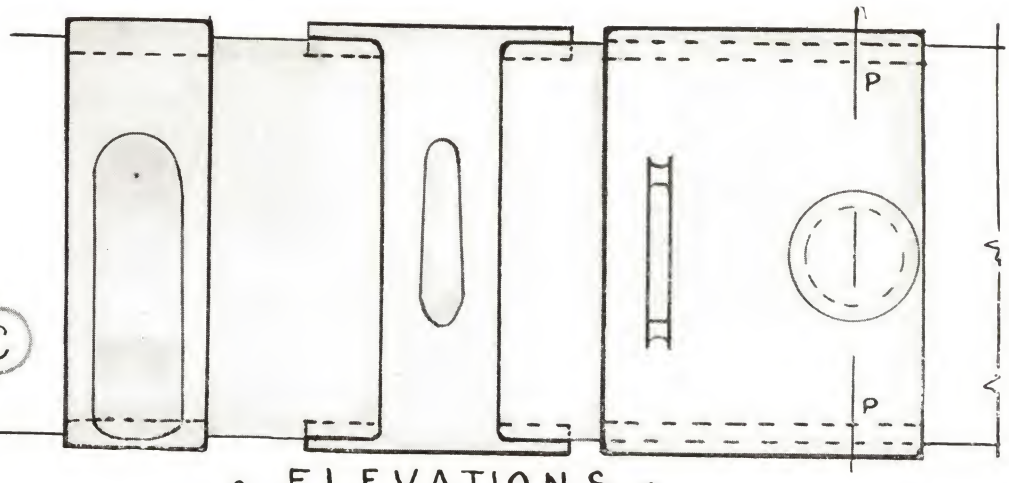
5. The storage cabinet underneath the boards can be used for storing drawing boards, water cups for paints, etc.

Specifications

Furnish and install in all rooms where indicated reversible easel boards as manufactured by the New York Silicate Book Slate Co., Inc., 421 Seventh Avenue, New York, New York. These shall consist of horizontal top rail with cork insert and sliding paper clips, vertical rails at end of each section, bottom horizontal rail and chalk tray if desired; also aluminum channels for carrying the reversible boards in three easel positions; also the necessary number of reversible boards consisting of Armor chalkboard in either black or green on one side and Crest Corkboard on the other side, to be framed in aluminum; also collapsible brackets if drop shelf is desired.

All wood grounds, cabinets or shelves shall be furnished and installed by others. Wood grounds shall be set flush with face of finished plaster and finished plaster shall be painted to match balance of walls. Such grounds, however, are to be provided and accurately set by others in accordance with details provided by the manufacturer of the blackboards and frames.

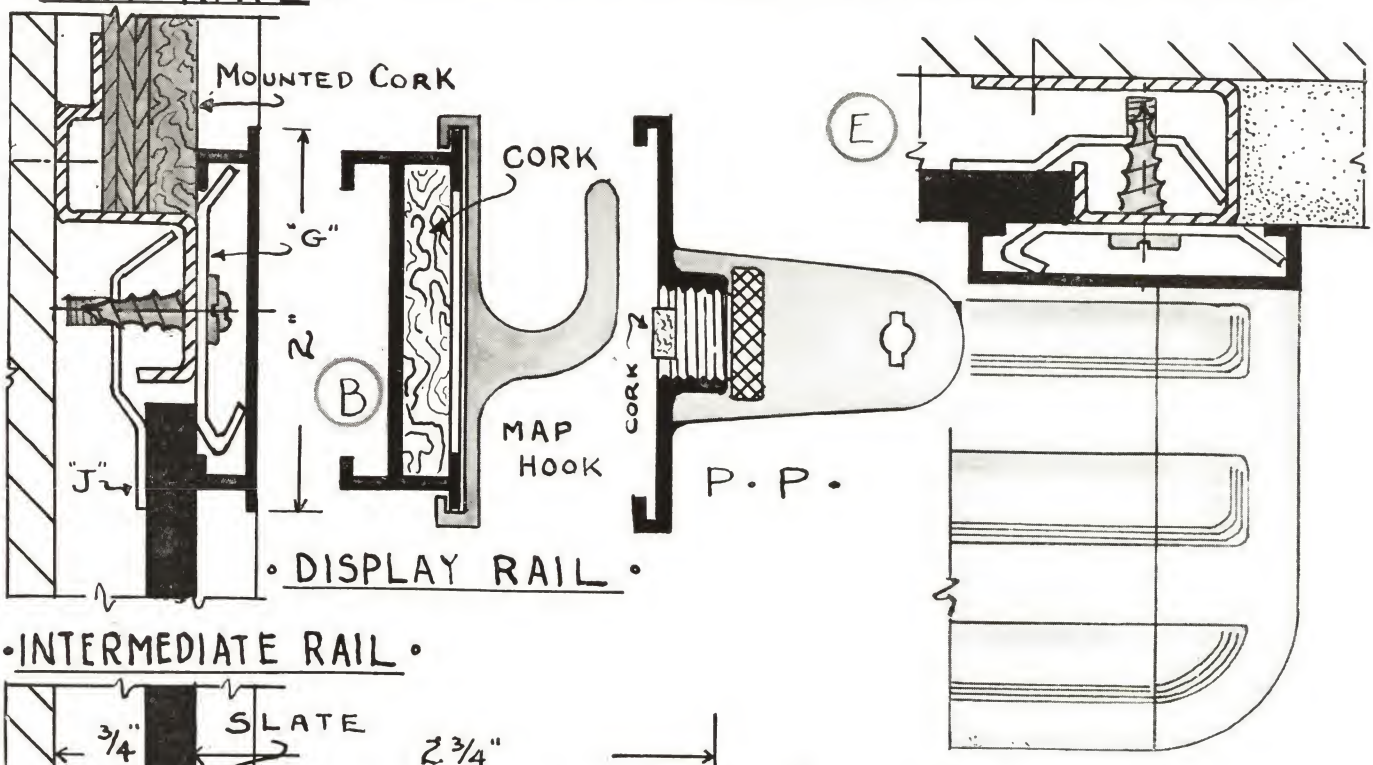




• ELEVATIONS •

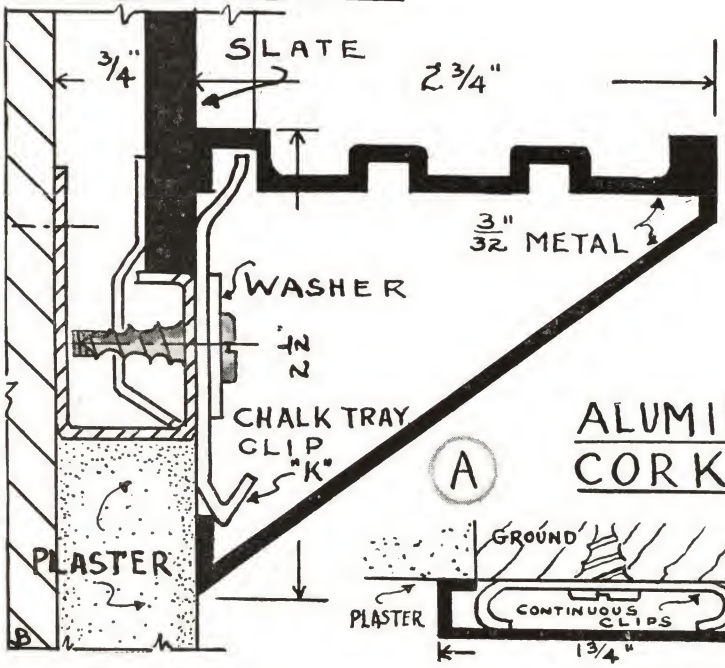
• CLIP • MAP HOOK • MAP WINDER •

• TOP RAIL •



• DISPLAY RAIL •

• INTERMEDIATE RAIL •

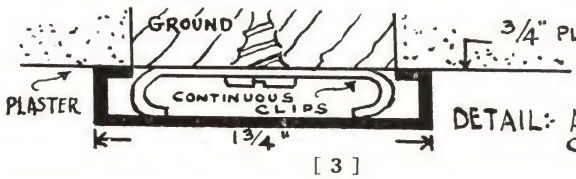


• END PLATE OF CHALK TRAY •

FULL SIZE DETAILS

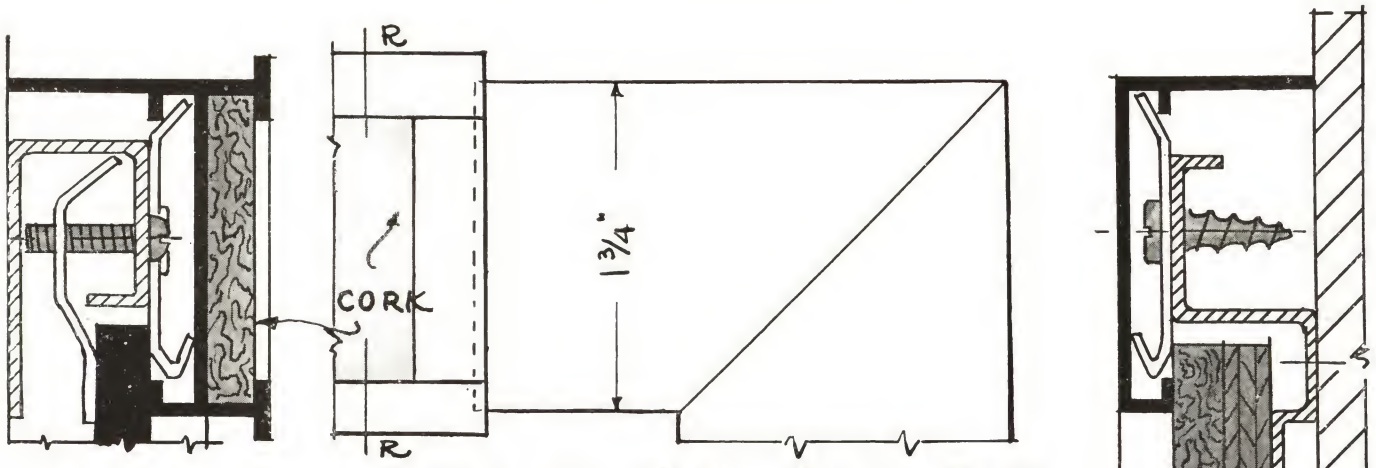
NEATSNAP

ALUMINUM BLACKBOARD & CORK DISPLAY BOARDS

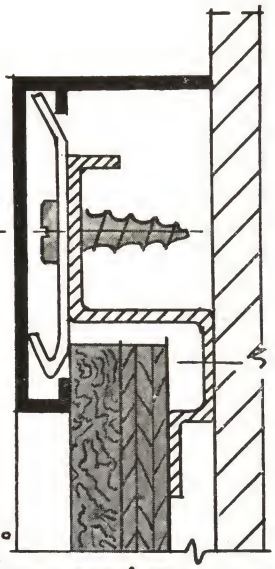


NOTE: WOOD GROUNDS FURNISHED & INSTALLED BY OTHERS.

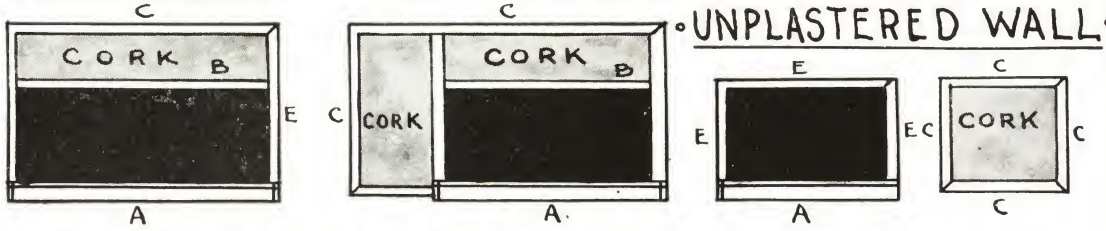
DETAIL:- ALUM. FRAME USED AS DADO BAND OR CHAIR RAIL.



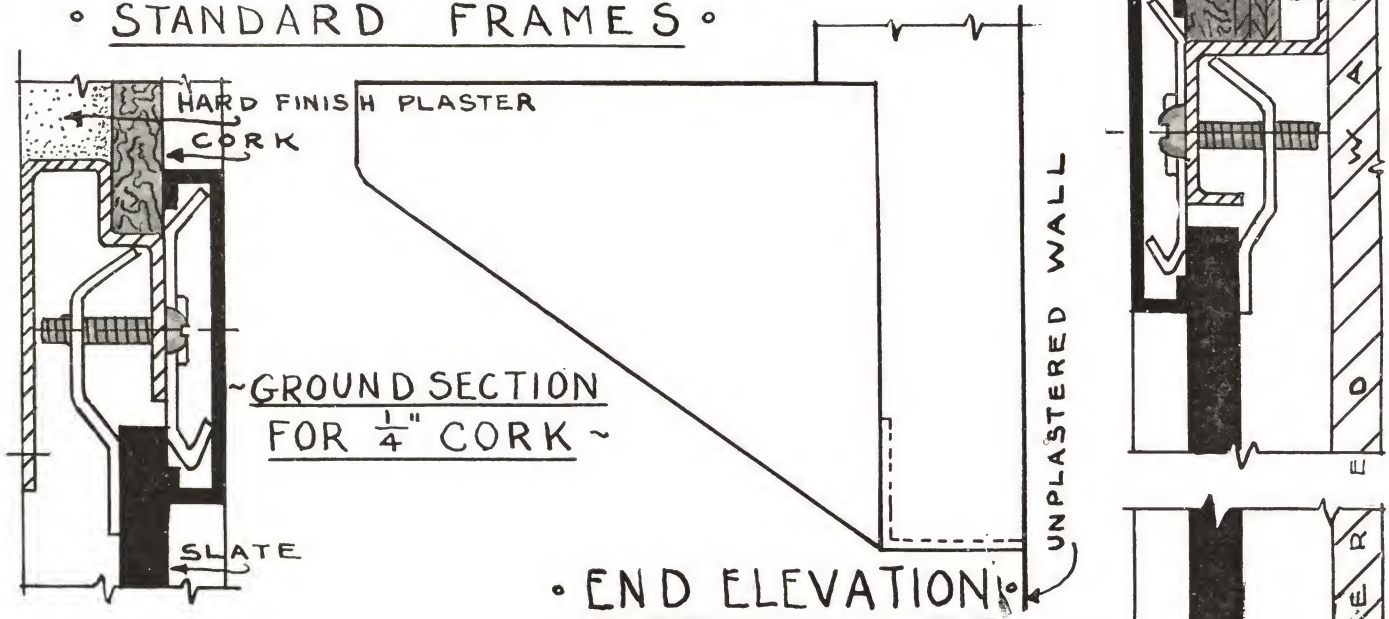
SECT. R-R.



DISPLAY TOP RAIL FOR UNPLASTERED WALL



STANDARD FRAMES



~GROUND SECTION FOR ¼" CORK~

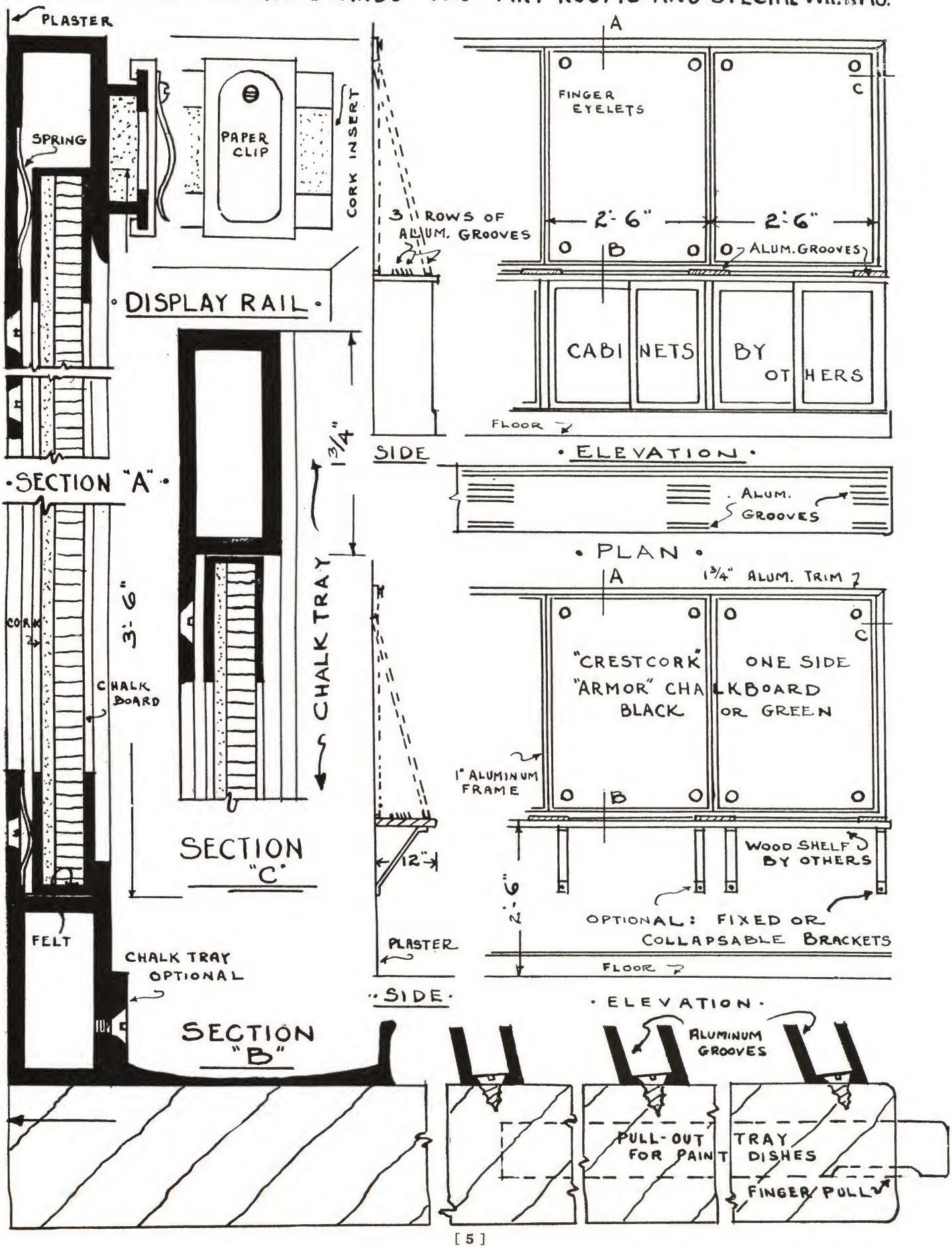
END ELEVATION

STANDARD FRAMING DETAILS

CONTINUOUS 16 GA. STEEL GROUNDS SECURELY FASTENED TO UNPLASTERED WALLS OR PARTITIONS ~ FASTENINGS 12" O.C. UNDER SLATE AND 16" CENTERS AT TOP AND SIDES OF FRAMES ~ STEEL CLIPS "G" SECURED BY SHEET METAL SCREWS 16" O.C. ~ CLIPS "J" SECURED BY MACHINE SCREWS • AND STAGGERED WITH CLIPS "G" ~ CLIPS "K" SUPPORTING CHALK TRAY ARE ALSO FASTENED WITH SHEET METAL SCREWS SPACED 12" O.C.

NEW YORK SILICATE BOOK SLATE CO., INC.

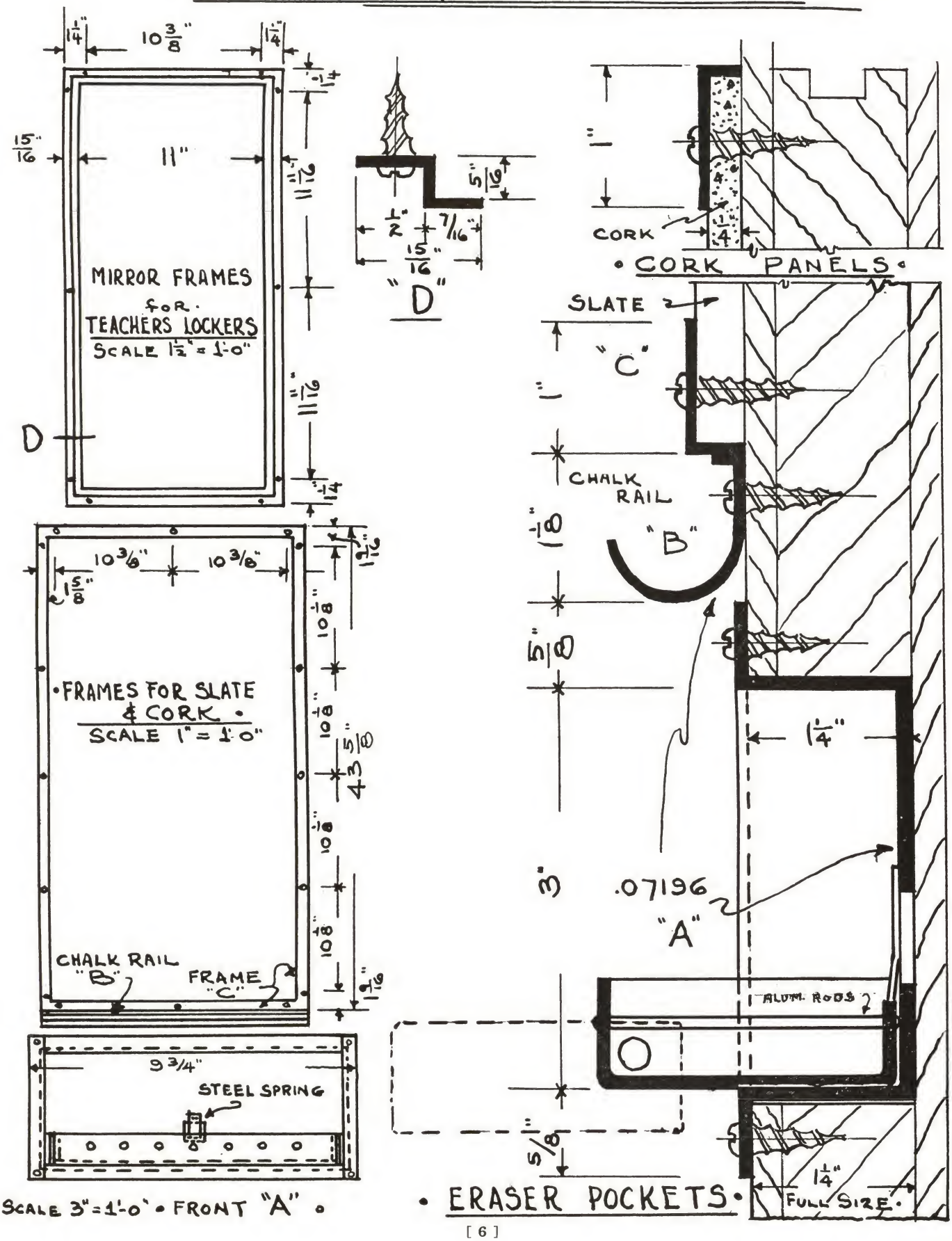
• REVERSIBLE EASEL BOARDS • FOR • ART ROOMS • AND • SPECIAL WK. RMS.



• WARDROBE ALUMINUM TRIM ~ FOR ~ SLATE · CORK & TEACHER'S MIRRORS ·

• ALSO •

• CHALKTROUGH & TILTED ERASER POCKETS



NEW YORK SILICATE BOOK SLATE CO., INC.

SELOC GLASS CHALKBOARDS FOR PERMANENCE



High School, Lawrence, L. I., N. Y., Completely Equipped with Seloc Glass Chalkboards

A FEW OF THE MANY SCHOOLS USING SELOC GLASS CHALKBOARD

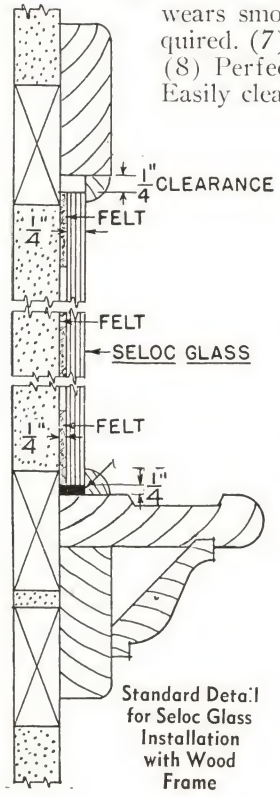
Scarsdale, N. Y.—High School
Washingtonville, N. Y.—High School
Pine Island, N. Y.—Central High School
Peekskill, N. Y.—McKinley High School
Richmondville, N. Y.—
Central High School
University of California
Peconic, N. Y.—Peconic Grade School
University of Florida
University of Minnesota
Newton, N. J.—Little Flower Monastery
Waltham, Mass.—High School
South Portland, Me.—High School
Hartford, Conn.—Trinity College
Bayshore, N. Y.—Bayshore High School

ADVANTAGES

Seloc Glass Chalkboard improves with age

(1) Made of black or green plate glass, with a *suspended abrasive* uniformly dispersed throughout the glass *while molten*. (2) Permanently and uniformly black. (3) Permanent velvet finish throughout. (4) Free from irregularities, markings or scratches. (5) Never wears smooth. (6) No resurfacing ever required. (7) Perfect uniform writing surface. (8) Perfect adhesion of chalk to board. (9) Easily cleaned. (10) Not affected by water, cold or heat. (11) Experimental tests equal to over 100 years of wear have left Seloc Glass Chalkboards as good as new. (12) Nonfading, since color is uniform throughout. (13) Furnished in sizes 3, 3½, 4 x 6 ft. (14) Weight per ft. and purchase price is little more than that of sale.

Some installations have been in for over seven years, demonstrating that the perfect writing texture of the Seloc Glass Chalkboards will never change, and that they never need refinishing or recoloring.



Standard Detail for Seloc Glass Installation with Wood Frame

SPECIFICATIONS FOR SELOC GLASS CHALKBOARDS

(1) Whenever blackboards are specified or indicated on the drawings, the Contractor shall furnish and install 1/8 in. thick Seloc Glass Chalkboards as manufactured by the NEW YORK SILICATE BOOK SLATE CO., INC., of 421 Seventh Avenue, New York City.

(2) These chalkboards shall be of a deep black or green color throughout their entire thickness and there shall be uniformly incorporated therein a suitable abrasive material which shall cause the surface to remain permanently of the same uniform texture during the total life of the board.

(3) The sizes of all chalkboards shall be as indicated on the drawings and as hereinafter specified.

(4) All grounds, trim and chalk rails shall be furnished and set by others. The grounds are to be set true and properly secured to walls to adequately support the chalkboards. Quarter rounds or other cover mouldings are to be fitted by others but installed by the Chalkboard Contractors.

(5) All areas behind chalkboards shall be brown plastered only. The plaster shall be screeded flush with face of grounds to a true and even surface.

(6) The Chalkboard Contractor shall set his chalkboards against a felt cushion ¼ in. thick by 1 in. wide which shall be run along all edges of each slab section. Abutting joints shall be backed with a single 2x¼-in. felt strip running full length of joint. Each section shall be supported on strips of lead or cork ¼ in. thick by ¼ in. wide by about 2 in. long, placed under the board on not over 24-in. centers with not less than three to a board section. Single felt strips ¼ in. thick by 1 in. wide shall be run in a vertical fashion from top to bottom of chalkboard, abutting against the above mentioned marginal felt strips and shall be spaced about 20 in. apart.

(7) Clearances of ¼ in. are to be allowed over and above actual specified chalkboard dimensions, except where two slabs of chalkboard sections are to abut each other.

(8) Where abutting joints occur in chalkboard sections, they shall be fitted as close as possible and Seloc joint compound shall be used only to fill in the joint. When this jointing compound has set, the joints shall be rubbed down with a solution to be furnished by the NEW YORK SILICATE BOOK SLATE CO., INC., after which the chalkboards are to be thoroughly cleaned of all foreign matter.

(9) If Neatsnap Extruded-Aluminum Framing is used, see separate specification under that heading.

CHALKBOARDS WITH AN INTERNATIONAL REPUTATION

REGAL CHALKBOARD

This product is the oldest composition chalkboard manufactured in the United States, having been made by this company for seventy-two years. Its incomparable writing surface that will not crack or peel makes it a standard of comparison for all other chalkboards.



It is made from four laminated layers of wood pulp (special process of this company), is easy to write on, and is easily erased. It is absolutely free from all glare. It is easy to install either with "Writo Metal Joints", or with half-rounds to cover the joints. Its weight is only 1 lb. per sq. ft., and there is never any breakage. It is the best answer where price is the factor. Made in black, green, canary or white. Furnished in any length up to 12 ft. and in widths of 3, 3½ and 4 ft.

ARMOR CHALKBOARD

The most popular of medium priced chalkboards, because it represents quality at low cost. Made of specially processed wood fibres that are compressed to an even thickness of ¼-in. It is noted for its resiliency and fine long lasting surface.

Can be nailed to wood grounds at top, and "Writo Metal Joints" or one-half rounds used to cover the joints.



Furnished in widths of 3, 3½ or 4 ft., and in lengths from 6 to 12 ft. Can be had in black, green, canary or white.

PARAGON CHALKBOARD

Paragon Chalkboard is the answer to a long felt need for a high quality chalkboard of great strength, and at a low cost. This product is composed of long fibre wood, mixed in oil, and formed under pressure of 8,000 lbs. to the sq. in. It cannot be broken with a hammer, and is guaranteed against warping or bulging under normal conditions. It takes a full clean chalk mark, is easily erased, and under normal use is guaranteed for ten years.



It has a uniform thickness of ¼-in., with true edges, and can be set with matched joints the same as natural slate. Can also be set with "Writo Metal Joints." Also, it can be nailed to wood grounds at top and one-half rounds used to cover joints.

Furnished in widths of 3, 3½ or 4 ft., and in lengths from 6 to 12 ft. Can be had in black, green, canary or white.

STONE-BESTOS CHALKBOARD

Here is a composition board which has a base that is practically everlasting. It is made from portland cement and asbestos, and then pressed under great hydraulic pressure into dense hard sheets. The coefficient of expansion of this board is practically nil, so it therefore will not warp or crack, and is resistant to heat up to 1400° F.

Its surface is made from our world-famous Diamond Brand Slating Compound, which has set the standard for seventy-four years. It has a velvet touch and is easily erased.

It is uniformly ¼-in. thick with true edges, and can be set with matched joints the same as slate, or with our H strip "Writo Metal Joint."

Furnished in any width up to 4 ft. and any length up to 8 ft. Available in black or green.

CREST CORK BULLETIN BOARDS

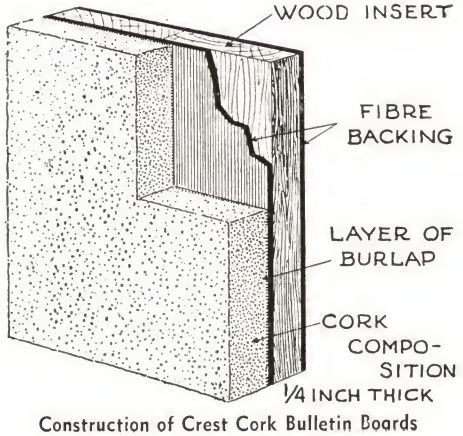
Mounted

Made of first quality ¼-in. thick cork carpet, reinforced with burlap backing. This is securely cemented to Masonite Preswood or 3-ply compo-board with core making the total thickness ½-in.

Guaranteed against warping or bulging. Furnished in tan or green, and in any length up to 14 ft., and in widths up to 4 ft.

Unmounted

Same as above without compo-board backing. Can be cemented direct to smooth wall surfaces, and furnished in lengths large enough to eliminate joints on most any size wall.



Construction of Crest Cork Bulletin Boards

FOUNDED 1896

E. W. A. ROWLES CO.

CABLE ADDRESS: ROWLES

Blackboard Manufacturers, Metal Blackboard Trim, Display Rails, Bulletin Boards, Miscellaneous School Equipment

TELEPHONE
Victory 3812

EXECUTIVE OFFICE
2500 Prairie Avenue, CHICAGO, ILL.

FACTORY
ARLINGTON HEIGHTS, ILL.

SALES REPRESENTATIVES THROUGHOUT THE UNITED STATES AND ABROAD

For Mastermade Window Shades, see File Index

THE COMPANY—ITS FACILITIES

Experience—The E. W. A. Rowles Co., one of the largest manufacturers of blackboards in the United States, has been continuously in business under the same management for forty-two years.

The guarantees covering the company's products are backed by an established financial integrity.

Facilities—Our factory, a model of efficiency, devotes approximately 30,000 sq. ft. of space to the manufacture of blackboards. Plant capacity is from 5000 to 8000 sq. ft. of finished blackboards per day. All products are manufactured under rigidly supervised, controlled processes. Uniformity of quality is positively guaranteed.

ENDURAROC BLACKBOARD

TRADE MARK
ENDURAROC
BLACKBOARD

Enduraroc Blackboard is a manufactured product composed of Portland cement and asbestos, finely ground slate, black mineral pigment and carborundum, combined by our own distinct process. The sheets are pressed into dense homogeneous panels, colored clear through. It is harder than natural slate but weighs only half as much. Its tensile strength, hardness and toughness increase with age. The surface is smooth and of uniform color, free from such defects as webs, metallic veins, streaks, hard and soft spots, etc.

Thickness—The finished thickness is ¼ in.

Sizes—Enduraroc is carried in stock 3, 3½, and 4 ft. wide and 5, 6, 7, and 8 ft. lengths.

Colors—Black, Green, Brown.

PERMAROC BLACKBOARD

PERMAROC
BLACKBOARD
SOLID AS A ROCK

Permaroc Blackboard is manufactured by a distinct process, whereby a perfect writing surface is obtained. The base or body is composed of gypsum rock (black core), carefully ground and treated, pressed into uniform sheets, between two layers of mineralized fibre board. It is fire resistant, moistureproof and is guaranteeed not to warp, contract or expand.

Thickness—The finished thickness is ¼ in.

Sizes—Permaroc is carried in stock 3, 3½, and 4 ft. wide, and in 5, 6, 7, and 8 ft. lengths.

Colors—Black, Green, Brown.

PERMA KORKBORD

Perma Korkbord Mounted—Is made of pressed cork cemented to 3-ply wood panels, approximately ½ in. thick; standard color, tan. It provides a space to display material. Approximate weight for shipment 1½ lbs. per sq. ft. in any even inch width to 48 in. and lengths to 96 in. (Greater lengths at added cost.)

Perma Korkbord Unmounted—Is pressed cork, standard color, tan with heavy burlap back. Measurement approximately ¼ in. thick. In any even inch widths up to 72 in. and lengths to 80 ft. Approximate weight for shipment 1 lb. per sq. ft.

DUROPLATE BLACKBOARD

DUROPLATE
THE GUARANTEED BLACKBOARD

Duroplate is a manufactured blackboard the base or body of which is composed of specially selected, long, wiry spruce fibres, so combined as to resist moisture and prevent warpage. Each panel is scientifically kiln cured, waterproofed and surface filled under an exclusive original process.

Duroplate is guaranteed, when properly installed, not to warp. It is readily cut to a clean, sharp edge.

Thickness—The finished thickness is ¼ in.

Sizes—Duroplate is carried in stock 3, 3½, and 4 ft. wide, and in lengths from 1 to 12 ft. inclusive.

Colors—Black, Green, Brown.

Special Duroplate Clinchers—Duroplate is held firmly and permanently against the wall with special metal clincher fasteners (an exclusive feature).

METAL BLACKBOARD TRIM

The constant demand for greater economy in schoolhouse construction has popularized Rowles Metal Blackboard Trim. All fittings at corners and intersections are made by close fitting castings. Rowles Metal Trim can be erected in much less time than wood trim, and attached to wood grounds by small oval headed screws.

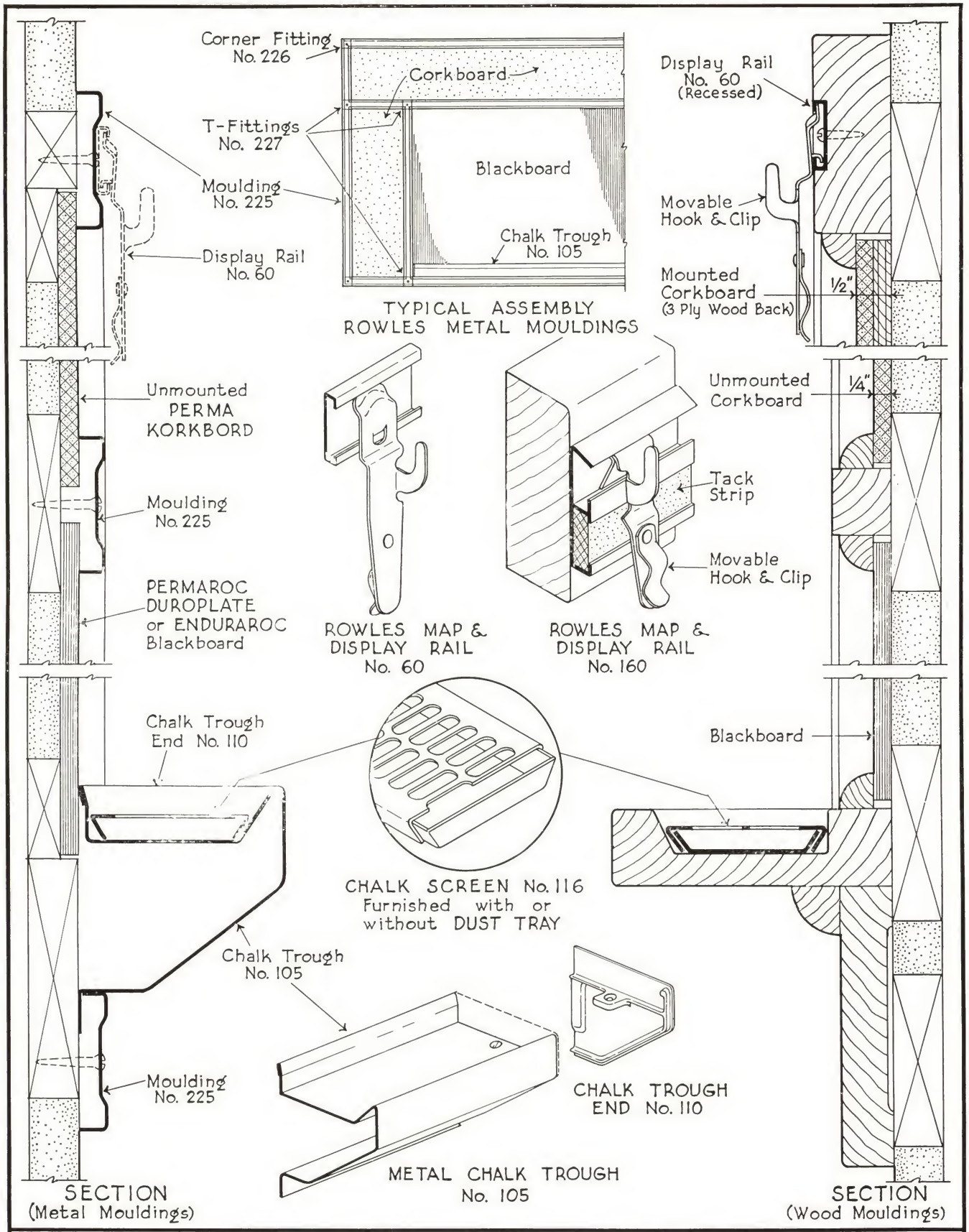
Metal trim is not affected by climatic conditions. Rowles Metal Trim can be taken down and re-erected quickly without being injured. The cost, erected and finished, is less than the cost of the average wood trim. All mouldings are of accurately rolled cold rolled selected stock. Rowles Metal Trim is primed both sides, over which may be applied any paint finish to harmonize with wall decorations.

MAP AND DISPLAY RAIL—SINGLE AND DOUBLE

Rowles Map and Display Rail is supplied as single or a double rail. The rails are equipped with hooks and spring clips, the double rail also with cork strip. The hooks are adjustable and removable.

The finish is School Brown lacquer. This is an inexpensive device to display bulletins, maps, charts and exhibits of all kinds. The rail may be placed on face of moulding or recessed.

Standard lengths are 3, 4, 6, 8 and 10 ft. Page 2 illustrates assembly details. Send for samples of our display rails.



DETAILS OF ROWLES BLACKBOARDS

E. W. A. ROWLES CO.

MASTER SPECIFICATIONS FOR BLACKBOARDS

• • •

(A) Correlative Provisions

Note: *To assist in providing a perfect blackboard installation, the following clauses should be included under specification divisions where and when they apply.*

Note: *It is suggested that blackboards be included under a separate specification division.*

(A1) Include Under Carpentry Work

(A1a) All blackboards, except as hereinafter otherwise mentioned, will be furnished and set by others.

(A1b) The following blackboards will be furnished cut to size and crated separately by the Blackboard Contractor to be set by this Contractor who shall be entirely responsible for their good condition after delivery.

Note: *Here list blackboards which are to be set by the Carpentry Contractor, such as those in wardrobe or other door panels, etc.*

The list and sizes (allowing ¼-in. clearance) shall be furnished by the Carpentry Contractor to the Blackboard Contractor.

(A1c) Provide accurately set grounds in accordance with the detailed drawings surrounding all blackboards and cork bulletin boards. These grounds shall not only form proper nailing base for the blackboards but shall provide nailing at the top for blackboards and form accurate screeds for plaster surfaces back of blackboards.

(A1d) In addition to grounds above, provide horizontal grounds the full length of the blackboard space to receive Duroplate Clinchers. For boards 3 ft. wide, provide 2 rows of horizontal grounds; for boards 3½ and 4 ft. wide, provide 3 rows of horizontal grounds.

Note: *Omit if Enduraroc or Permaroc blackboards are specified.*

(A1e) All grounds shall be sound S4S material free from knots, sap, or other defects for *(here specify thickness and number of coats for plastering).*

Grounds shall be substantially secured in position every 16 in. on centers, set absolutely true to line, level, plumb and in perfect surface alignment. All nails shall be slightly set.

(A2) Include Under Lathing and Plastering

(A2a) This contractor shall check all grounds for blackboards as specified in paragraphs ——, pages —— under division of "Carpentry Work". Thickness of grounds shall be such that plastering back of blackboards is flush with ground surfaces.

(A2b) Plaster all spaces back of blackboards flush with grounds. Surfaces shall be in a true plane without projections beyond the face of the ground work.

(A2c) The finished coat of plaster may be omitted back of blackboards, but the brown coat shall be floated to a true plane in perfect alignment with the grounds.

(A2d) Wherever blackboards are installed on outside walls which are not furred, the masonry back of plastering shall be given two good coats of damp-proof paint.

(A3) Include Under Painting

(A3a) All blackboard trim (except inner loose tack mould) shall be completely finished before blackboards are set.

(A3b) The inner loose tack mould of blackboard trim shall be finished up to the last coat before installation. After blackboards are set and the inner mould attached, this contractor shall apply the last coat of finish.

(A3c) Great care shall be exercised by this contractor that no painter's finish, by accident or otherwise, is applied to the blackboard surfaces. Any varnish or other finish appearing on blackboard surfaces will be removed and the surface refinished (or new boards erected) by the Blackboard Contractor at this contractor's expense.

(B) Blackboard Installation

Note: *The following clauses shall be included under the blackboard specifications where and when they apply.*

(B1) Preliminary Work

(B1a) General—The following preliminary work is done under other contracts and is covered under the following specification divisions. Before the erection of blackboards, this contractor shall examine all preliminary work and shall report to the architect in writing any inaccuracies or variations from the specification requirements which will in any way deleteriously affect work under this contract. Failure to so report defects, etc., if any, is construed as acceptance of the work as executed and release of those responsible.

(B1b) Carpentry Work—*(Here refer to paragraphs under this heading of preliminary work affecting this contract.)*

(B1c) Lathing and Plastering—*(Here refer to paragraphs under this heading of preliminary work affecting contract.)*

(B1d) Painting—*(Here refer to paragraphs under this heading of preliminary work affecting this contract.)*

(B2) Diagrams and Cutting Schedules

(B2a) This contractor shall furnish to the architect in triplicate for his approval cutting diagrams and cutting schedules showing disposition of joints and blackboard and bulletin board sizes for the various rooms distinctly and accurately allocated.

(B3) Materials

(B3a) Blackboards—Blackboards shall be *(Enduraroc) (Permaroc) (Duroplate)* as manufactured by E. W. A. ROWLES Co., 2500 Prairie Avenue, Chicago, Illinois, or equivalent meeting fully this manufacturer's standards of quality as described in detail in their catalog contained in Sweet's Catalog File (Architectural).

All blackboards shall have surfaces perfectly true and smooth, free from defects, depressions, or projecting particles. Joint edges shall be sharp. The bottom edge shall be parallel with the top edge.

(B3b) Cement—Cement for spot cementing shall be Rowles Blackboard Cement.

Note: *Omit if Duroplate is specified.*

(B3c) Metal Clinchers—Metal clinchers shall be as manufactured by E. W. A. ROWLES Co.

Note: *Omit if Enduraroc or Permaroc Blackboards are specified.*

(B3d) Metal Blackboard Joints—Blackboard joints shall be made with Rowles Zinc Metal Joints, dull black finish. All joint mouldings shall be without surface defects, smooth and straight.

Note: *Omit if butted cement joint is specified for Enduraroc or Permaroc. Always include with Duroplate.*

(B3e) Bulletin Boards—All bulletin boards shall be Perma Korkbord *(mounted) (unmounted)* as manufactured by E. W. A. ROWLES Co.

(B4) Sizes and Lengths

(B4a) Widths—All blackboard widths (height from chalk rail to top) shall be as designated on the detail drawings and schedules.

(B4b) Lengths—All sections up to 6, 7, or 8 ft. shall be in one piece; all sections over 8 ft. and up to 16 ft. shall be in two pieces; longer sections shall be in multiples of 6, 7, or 8 or fractions thereof, but arranged with joints symmetrically spaced and with no piece for filling out less than 3 ft. in its horizontal dimension.

(B5) Storing

All blackboard and bulletin board material shall be properly stored at the building site in such manner as to adequately protect it from damage.

(B6) Uncrating and Distributing

(B6a) All material which is to be set by the carpentry contractor shall be shipped in separate crates and delivered to him crated as received from the manufacturer.

(B6b) All material to be erected by this contractor shall be uncrated in accordance with the manufacturer's directions. Distribute the material to the rooms and to the spaces in each room in their order as indicated on the crates and sections to conform with the diagrams and schedules.

(B7) Sizing

On outside walls not furred and not dampproofed back of plaster, thoroughly size the plaster surface back of blackboards with glue sizing.

Note: *Wherever dampness is apparent or possible, sizing is advisable; otherwise the spotting cement may be affected.*

(B8) Setting Blackboards

(B8a) The setting, leveling, and cutting of blackboard installation shall be in accordance with the manufacturer's recommendations and his standard specifications.

(B8b) No blackboard shall be set until the final coat of finish has been applied and has dried on the blackboard woodwork trim (except loose tack mould).

(B8c) All blackboards shall be set so that all edges shall be adequately covered by the loose tack mould. The writing surfaces shall be plumb and in a true plane with ¼-in. clearance on all sides.

Note: *Clearance is necessary to allow for swelling of wood trim.*

(B8d) Where nailing is required to secure or hang the blackboard sections, use 6d wire nails placed approximately ⅜ in. from the edge and not over 18 in. on centers driven through holes drilled in board. Boards showing splits at nailing points below the finishing tack mould will be rejected and must be replaced at this contractor's expense.

(B8e) Enduraroc shall be nailed at top edge only. The balance of the blackboard surface shall be secured to the wall with three horizontal rows of spot-cement with continuous strips of cement at all joints. Spot-cement shall be applied to the plaster in globules about half the size of an egg. The top and bottom rows shall be from 10 to 12 in. from the board edge and from 12 to 16 in. on centers horizontally. The spots of the middle horizontal row shall stagger centrally between the spots of the top and bottom rows. Sufficient cement shall be used at the joints to firmly bed these for a space of 1 in. on each side. The boards shall be firmly pressed in position over the cement and leveled plumb and true. Sufficient pressure shall be maintained for a period of from 2 to 3 days to assure thorough adhesion without springiness for the entire surface. Pressure shall be accomplished by wood cleats secured at top and bottom with wedges beneath spaced in accordance with the manufacturer's directions or otherwise as may be approved by him.

Note: *Omit if Duroplate or Permaroc Blackboards are specified.*

(B8f) Permaroc Blackboard shall be nailed at top edge only. First, nail the blackboard at the top edge allowing ¼ in. clearance at trim. After the panel is securely nailed along the upper edge, press it firmly against the plastered wall and nail at the bottom edge allowing ⅛-in. clearance at bottom trim. When panels must be joined, shove the metal joint over the edge of panel on the wall and securely toe-nail the joint to the wall or wood furring. Blackboards shall be installed in exact accordance with the manufacturer's instructions.

(B8g) Duroplate shall be set as follows: Place horizontal rows of Rowles Duroplate Clinchers secured to each horizontal wood ground from 12 to 16 in. on centers (two rows are required on boards 3 ft. wide; three rows are required on boards 3½ and 4 ft. wide). First nail the blackboard at top edge only, allowing ¼-in. clearance at trim. After the panel has been securely nailed along the upper edge, clinch each fastener by holding a padded block against the surface of the board and drive back with a hammer. Allow ¼-in. clearance at bottom trim. If more than one panel is required to fill the space, insert the metal joint before nailing the second panel in place and toe-nail metal joint to wall or wood furring.

Note: *See (A1d) for clincher grounds.*

Note: *See (B9a) for metal joint.*

Note: *Omit if Enduraroc or Permaroc Blackboards are specified.*

(B8h) Tack mould shall be carefully and accurately braded in position by this contractor with firm, continuous contact at all edges and brads neatly set for puttying.

(B9) Blackboard Joints

(B9a) Metal Blackboard Joints—All joints shall be made with Rowles Metal Joints. The moulding shall be the full width of the blackboard extending back of the tack mouldings which shall be neatly notched out over it at top and bottom. The moulding shall be shoved tight against the first board set and plumbed, and securely toe-nailed to the wall or wood furring; shove the next section of board into the groove of the moulding as far as possible and level and plumb the board. Mouldings with surface imperfections or which are warped out of line shall not be used.

Note: *The manufacturer advocates this joint on all blackboards. Metal joints should always be used on Duroplate.*

(B9b) Cement Joints—All joints shall be butt joints in accordance with the manufacturer's standard detail. The joints shall be plumb and adjoining surfaces in a true plane, boards shoved tight, and the joint well bedded in setting cement.

Note: *Use only on Enduraroc. (See (B9a) above.)*

Note: *Omit if Duroplate and Permaroc are specified.*

(B10) Bulletin Boards

Set all bulletin boards where noted on plans in accordance with the manufacturer's directions. Where joints occur, these shall be symmetrically spaced to correspond with blackboard joints and shall be joined with metal Joint Moulding to match cork. Apply tack mouldings surrounding bulletin boards as specified above for blackboards.

(B11) Display Rails

This contractor shall furnish and install above all blackboards spaces Display Rail with spring clips, hooks and cork inserts as manufactured by E. W. A. Rowles Co., 2500 Prairie Avenue, Chicago, Illinois or equivalent, meeting fully their standards of quality as described in their catalog contained in Sweet's Catalog File (Architectural). The Display Rail shall be securely fastened to the blackboard trim in exact accordance with the manufacturer's recommendations.

(B12) Final Cleaning

After the painter has applied the final coat of finish to the tack mould, this contractor shall do the final cleaning of all blackboard surfaces, charging the reasonable cost thereof to those responsible for any damage. All varnish spots or streaks shall be removed with steel wool; apply Rowles Blackboard Surfacer rubbed down with fine pumice and water, blending the spots with the rest of the board surface.

MEMORANDA

WEBER COSTELLO COMPANY

MANUFACTURERS OF

Blackboard—Map and Display Rail—Swinging Leaf Blackboard

CHICAGO HEIGHTS, ILLINOIS

Service to Architects

√ Master Specifications in detail
√ Complete Installation Instructions
√ Samples of Blackboard in green and black
√ Authentic Tables on Area and Placement of Blackboard



Recently Sterling Greensite and Green Hyloplate have been favored because of their sight-saving values as well as for the attractiveness they lend to modern schoolroom walls

STERLING BLACKBOARD

COLORS—Sterling Black and Sterling "Greensite". Both colors are time-tested and permanent.

MANUFACTURE—Sterling body is made of Portland cement, long fibre asbestos, and black coloring pigment—permanently combined by a special laminating process and subjected to a pressure of 9,000 tons per slab. The result is a tough and resilient board of uniform composition, thickness, and color. After curing and eliminating excess moisture, the board is sealed against moisture. A suspension of finely ground silex and carborundum is then carefully applied to the face of the board. Sterling is fireproof and moistureproof; it will not warp and it has a negligible coefficient of expansion.

SIZES—Sterling is uniformly $\frac{3}{16}$ in. thick and is available in 3 ft., 3 ft. 6 in., and 4 ft. widths and in 6, 7, and 8 ft. lengths. It weighs 2 lbs. a sq. ft. (2.5 lbs. crated).

ADVANTAGES—

Perfect writing and erasing qualities.
Long slabs requiring a minimum of joints.
Long and efficient life.
Easy and economical to install.
Inexpensive.

OLD RELIABLE HYLOPLATE BLACKBOARD

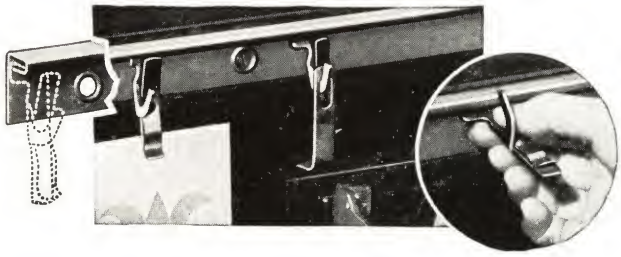
COLORS—Black and Green. Both colors are time-tested and permanent.

MANUFACTURE—Old Reliable Hyloplate is made of four sheets of long fibre, live spruce pulp, united under hydraulic pressure to form a resilient and durable carrier for the velvety, time-tested writing surface. The elasticity of the writing surface contributes excellent writing qualities and allows it to withstand rapid temperature changes without chipping or cracking. Over fifty million feet of Hyloplate are in use in the United States, Canada, and twenty-two foreign countries. Genuine Hyloplate is the trademarked product of Weber Costello Company

SIZES—Old Reliable Hyloplate is uniformly $\frac{1}{4}$ in. thick, and is available in 3, 3½, and 4 ft. widths and in even feet up to 12 ft. long. It weighs $\frac{3}{4}$ lb. a sq. ft. (1 lb. crated).

ADVANTAGES—

Velvety writing surface.
Durable—lasts for years.
Light in weight—economical to ship.
Long lengths—few joints.
Easy and cheap to install.
Very inexpensive.



WEBCO MAP AND DISPLAY RAIL

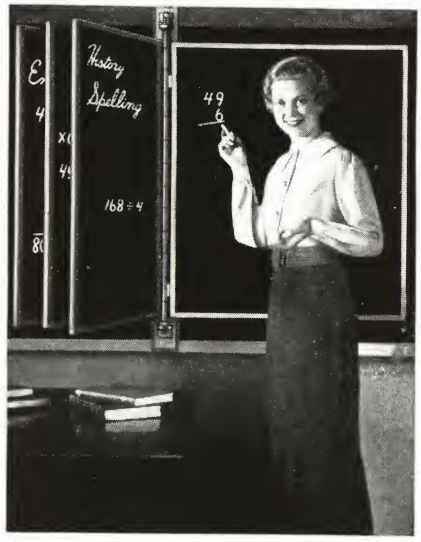
Webco Map and Display Rail is made of heavy 20 gauge steel, formed to give unusual strength. It has an oxidized copper finish. Combination hooks and clips, capable of holding either heavy map cases or light paper and cardboard displays, may be inserted on or removed from any part of the rail. Webco Map and Display Rail is inexpensive and may be easily installed to trim, wall, or molding. Makes cork unnecessary.

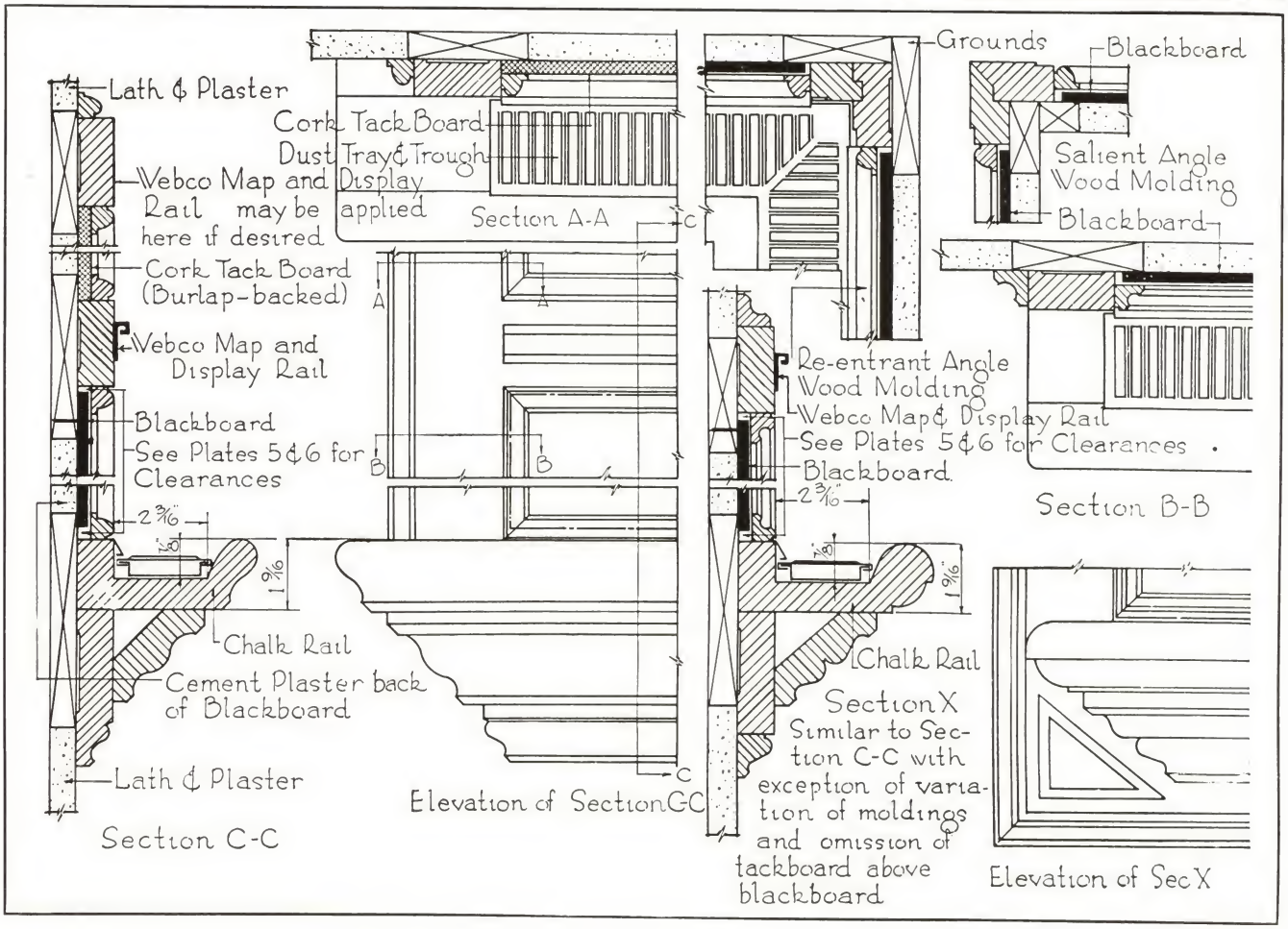
WEBCO SWINGING LEAF BLACKBOARD

The Webco Swinging Leaf Blackboard is a patented device especially suited to laboratories, gymnasiums, libraries or other rooms not adequately provided with blackboard space. The unit consists of four 3x3½ ft. swinging leaves each made of double surfaced Old Reliable Hyloplate Blackboard —a total of 84 sq. ft. of writing surface.

Each panel is securely held in an antique bronze plated, metal frame. Either the entire unit or the separate leaves may be used in other rooms, if extra mounting brackets are ordered. A locking device keeps examination questions or other written matter private until it is to be presented. Cork Bulletin board surfaces may be substituted for any of the blackboard panels at small additional cost.

A complete unit includes four leaves and a set of brackets mounted on a substantial oak backboard, finished in school (medium dark) brown.





MASTER SPECIFICATIONS FOR BLACKBOARDS

(A) PRELIMINARY PROVISIONS

Note: *To assist in providing a perfect blackboard installation, the following clauses should be included under specification divisions where and when they apply.*

Note: *It is suggested that blackboards be included under a separate specification division.*

(A1) Include Under Carpentry Work

(A1a) All blackboards, except as hereinafter otherwise mentioned, will be furnished and set by others.

(A1b) The following blackboards will be furnished cut to size and crated separately by the Blackboard Contractor to be set by this Contractor who shall be entirely responsible for their good condition after delivery.

Note: *Here list blackboards which are to be set by the Carpentry Contractor, such as those in wardrobe or other door panels, etc.*

The list and sizes (allowing ¼-in. clearance) shall be furnished by the Carpentry Contractor to the Blackboard Contractor.

(A1c) Provide accurately set grounds in accordance with the detailed drawings surrounding all blackboards and cork bulletin boards. These grounds shall form proper nailing base for the blackboard trim, provide nailing at the top for blackboards, and form accurate screeds for plaster surfaces back of blackboards.

(A1d) All grounds shall be sound S4S material free from knots, sap, or other defects for *(here specify thickness and number of coats for plastering).*

Grounds shall be substantially secured in position every 16 in. on centers, set absolutely true to line, level, plumb, and in perfect surface alignment. All nails shall be slightly set.

(A2) Include Under Lathing and Plastering

(A2a) This contractor shall check all grounds for blackboards as specified in paragraphs——, pages—— under division of "Carpentry Work". Thickness of grounds shall be such that plastering back of blackboards is flush with ground surfaces.

(A2b) Plaster all spaces back of blackboards flush with grounds. Surfaces shall be in a true plane without projections beyond the face of the ground work.

(A2c) The finished coat of plaster may be omitted back of blackboards, but the brown coat shall be floated to a true plane in perfect alignment with the grounds.

(A2d) Wherever blackboards are installed on outside walls which are not furred, the masonry back of plastering shall be given two good coats of damp-proof paint.

(A3) Include Under Painting

(A3a) All blackboard trim (except inner loose tack mould) shall be completely finished before blackboards are set.

(A3b) The inner loose tack mould of blackboard trim shall be finished up to the last coat before installation. After blackboards are set and the inner mould attached, this contractor shall apply the last coat of finish.

(A3c) Great care shall be exercised by this contractor that no painter's finish, by accident or otherwise, is applied to the blackboard surfaces. Any varnish or other finish appearing on blackboard surfaces will be removed and the surface refinished (or new boards erected) by the Blackboard Contractor at this contractor's expense.

(B) BLACKBOARD INSTALLATION

Note: *The following clauses shall be included under the blackboard specifications where and when they apply.*

(B1) Preliminary Work

(B1a) General—The following preliminary work is done under other contracts and is covered under the following specification divisions. Before the erection of blackboards, this contractor shall examine all preliminary work and shall report to the architect in writing any inaccuracies or variations from the specification requirements which will in any way deleteriously affect work under this contract. Failure to so report defects, etc., if any, will be construed as acceptance of the work as executed and release of those responsible.

(B1b) Carpentry Work—*(Here refer to paragraphs under this heading of preliminary work affecting this contract.)*

(B1c) Lathing and Plastering—*(Here refer to paragraphs under this heading of preliminary work affecting contract.)*

(B1d) Painting—*(Here refer to paragraphs under this heading of preliminary work affecting this contract.)*

(B2) Diagrams and Cutting Schedules

This contractor shall furnish to the architect in triplicate for his approval cutting diagrams and cutting schedules showing disposition of joints and blackboard and bulletin board sizes for the various rooms accurately allocated.

(B3) Materials

(B3a) Blackboards—Blackboards shall be *(Sterling) (Velvastone) (Hyloplate)* Blackboards as manufactured by Weber Costello Company, Chicago Heights, Illinois, or equivalent, meeting fully this manufacturer's standard quality.

All blackboards shall have surfaces perfectly true and uniform, and free from defects. Joint edges shall make angles of 90 degrees with top or hanging edge. Bottom edge shall be parallel with the top edge.

(B3b) Cement—Cement for spot cementing the blackboard to the wall shall be W. C. Sterling Cement (No. 50).

(B3c) Metal Blackboard Joints—Blackboard joints shall be made with W. C. Rustproof Metal Joints, slated finish. All joint mouldings shall be without surface defects, smooth and straight.

(B3d) Bulletin Boards—All bulletin boards shall be *(W. C. Cork Tackboard) (W. C. Mounted Corkboard).*

(B3e) Map and Display Rails—All map and display rails shall be made by Weber Costello Company equipped with combined hooks and clips.

(B4) Sizes and Lengths

(B4a) Widths—All blackboard widths (height from chalk rail to top) shall be as designated on the detail drawings and schedules.

(B4b) Lengths—All sections up to 8 ft. (12 ft. for Hyloplate) shall be in one piece; all sections over 8 ft. (12 ft. for Hyloplate) and up to 16 ft. shall be in two pieces; longer sections shall be in multiples of 6 ft., 7 ft., or 8 ft. or fractions thereof, but arranged with joints symmetrically spaced and with no piece for filling out less than 3 ft. in its horizontal dimensions.

(B5) Storing

All blackboard and bulletin board material shall be properly stored at the building site in such manner as to adequately protect it from damage.

(B6) Uncrating and Distributing

(B6a) All material which is to be set by the carpentry contractor shall be shipped in separate crates and delivered to him crated as received from the manufacturer.

(B6b) All material to be erected by this contractor shall be uncrated in accordance with the manufacturer's directions. Distribute the material to the rooms and to the spaces in each room in their order as indicated on the crates and sections to conform with the diagrams and schedules.

(B7) Setting

(B7a) The setting, leveling, and cutting of blackboard shall be in accordance with the manufacturer's recommendations and specifications, furnished with each shipment of blackboard.

Note: *In the states of Texas, Louisiana, Mississippi, Alabama, Florida, Georgia, North Carolina, and South Carolina where the climate is hot and humid, blackboard will be almost certain to sweat unless installed by* Weber Costello Company's *special patented Ventilated method of installation. Be sure to secure these directions. They must be followed to insure satisfactory results. (Insert the paragraph (B7b) in specifications covering installation to be made in these states.)*

(B7b) The setting, leveling, and cutting of blackboard shall be in accordance with the manufacturer's special patented Ventilated method. (Details supplied upon request.)

(B7c) No blackboard shall be set until the final coat of finish has been applied and has dried on the blackboard woodwork trim (except loose tack mould).

(B7d) All blackboards shall be set by competent mechanics so that all edges shall be adequately covered by the loose tack mould. The writing surfaces shall be plumb and in a true plane.

(B7e) Tack mould shall be carefully and accurately bradded in position by this Contractor with firm, continuous contact at all edges and brads neatly set for puttying.

(B7f) Sterling—Lay slab face down on a padded bench. (Made very easily by using one of the crates.) Wipe all dust and dirt off the back of the blackboard. Go over wall with a stiff brush and remove all loose particles of plaster and dust.

Sterling cement No. 50 is supplied with every shipment of Sterling Blackboard. It is in form of a powder (in bags) and a liquid (in cans).

The powder and liquid must be stirred together until all granules and solid particles disappear, and the cement is soft and easily worked (like a thick paste). Thorough mixing or working produces the correct consistency. Mix for only one blackboard at a time.

Place globules of cement every 12 inches in a horizontal row along the center of slab lengthwise and two (2) extra at each edge at joints.

Side slab, at once, into position and, equalizing space at top and bottom, apply pressure over cement globules. Immediately put clamps in place and insert wedges over the cement globules to hold slab in proper contact with the cement and wall. Two or three light weight clamps are sufficient for each slab. Wrap the wedges in paper to protect the blackboard surface. Drill holes along top of blackboard every 16 to 18 inches and countersink for wood screws. Screw slab securely to top ground, using a ¾ in. No. 8 flat headed wood screw countersunk. Insert metal rustproof joint at right end to receive next slab. Proceed with second and successive slabs. After the cement has been allowed to set at least 10 hours (over night), take off clamps. Then place quarter round or cove mouldings at top and bottom of blackboard to complete the installation. Mouldings must be toe-nailed as tightly against the surface of the blackboard as possible.

(B7g) Velvastone—Blackboard should not be installed over "green" or damp plaster. The plaster must be thoroughly dry.

Slide first slab into place and nail securely along top edge every sixteen to thirty inches with three-penny lath nails. Proceed with second and successive slabs until space is completely filled, using Metal Rustproof Joints to join the slabs where more than one is required to fill the space. When space is complete, nail wood moulding around the slabs as tightly against the blackboard as possible.

(B7h) Hyloplate—Walls must be thoroughly dry.

Hang Hyloplate in the space it is to occupy and toe-nail top edge every twenty to thirty inches. Do not nail ends or bottom. Permit the Hyloplate to hang for 24 hours to acquire the temperature and moisture content of room. When making final installation, trim or sandpaper edges enough to allow for any expansion that has taken place in the meantime. When two or more pieces are necessary, cover the spaces between pieces with Metal Rustproof Joints.

In applying tack mould, place a piece of cardboard between the Hyloplate and the moulding while nailing it in place, afterward removing the cardboard. This leaves the necessary free space. Be careful that the nails holding the moulding be driven in in such a way that they will not go through nor even near the edge of Hyloplate. Leave the expansion space absolutely free from any obstruction.

(B7i) Metal Blackboard Joints—All joints shall be made with metal blackboard joints. The moulding shall be the full width of the blackboard extending back of the tack mouldings which shall be neatly notched out over it at top and bottom. Shove the moulding tight against the first board set and plumb and securely toe-nail it to the wood grounds; shove the next section of board into the groove of the moulding as far as possible and level and plumb the board.

(B8) Bulletin Boards

Set all bulletin boards where noted on plans in accordance with the manufacturer's directions. Where joints occur, these shall be symmetrically spaced to correspond with blackboard joints and shall be joined with metal joint moulding to match cork. Apply tack mouldings surrounding bulletin boards as specified above for blackboards.

(B9) Map and Display Rails

This contractor shall furnish and install where indicated above blackboard spaces Map and Display Rails and shall furnish to the *(school superintendent) (specify)* a package, distinctly marked, containing a total of (*specify number*) of hook-clips to fit the rail

(B10) Final Cleaning

After the painter has applied the final coat of finish to the tack mould, this contractor shall do the final cleaning of all blackboard surfaces, charging the reasonable cost thereof to those responsible for any damage. All varnish spots or streaks shall be removed; apply W. C. Liquid Blackboard Surfacer rubbed down with fine pumice and water, blending the spots with the rest of the board surface.

(B11) Direction Plates

In each room fasten permanently where directed by the Architect the metal plate furnished by the blackboard manufacturer bearing directions for breaking in and care of blackboard surface.

(B12) Breaking in Blackboard Surfaces

This contractor shall break in all blackboard surfaces and leave in clean, perfect, ready-to-use condition as follows:

(1) With the side of a piece of good quality crayon, chalk the entire surface of the blackboard. (Use only good grade crayon free from grease or grit. If the crayon is glazed or enameled, it should be scraped off.)

(2) Work the crayon into the surface lightly by erasing with a blackboard eraser. (No pressure is necessary.)

(3) Erase with a clean eraser and follow with a soft cloth or a chamois skin.

(B13) Webco Swinging Leaf Blackboard

Furnish and erect Webco Swinging Leaf Blackboards as follows:

Note: *Here list the various rooms so equipped. If cork bulletin boards are inter-leaved with blackboard panels, so note and locate separately.*

ART METAL CONSTRUCTION COMPANY

LIBRARY DIVISION

JAMESTOWN, N. Y.

For Branch Offices, see Bank Equipment Section

For Metal Doors and Trim, Steel Partitions, Bank, Office and Hotel Equipment, and Kitchen Cabinets, see File Index

ART METAL EQUIPMENT FOR LIBRARIES

Art Metal Steel Library Equipment is used in a large proportion of the modern libraries in this country as well as many foreign countries.

Every state in the country, as well as practically every important city, has many Art Metal installations.

The production of a complete line of modern fire-resisting steel equipment for libraries and museums of various kinds is a specialty of this company. The line of products is complete for the equipment of small private or town libraries to the great city libraries, such as the Free Library of Philadelphia in which over 2,783,000 lb. of Art Metal steel library equipment was used.

Complete engineering service, including load computations, column and floor calculations, construction problems and designing of special equipment will gladly be furnished to architects and builders without obligation.

Art Metal Equipment for Libraries Includes

Standard Type Book Stacks for Stack Rooms.
Standard Type Book Stacks for Reading Rooms.
Standard Type Book Stacks with glass or mesh doors.
Bracket Type Book Stacks for Stack Rooms, built integral with the building.
Bracket Type Book Stacks built independent of building.
Bracket Type Rolling Book Stack.
Newspaper Stacks and Racks for Newspapers.
Carrel Partitions and Reading Desks.
Charging Desks.
Card Catalog Files.
Reading Tables.
Magazine Racks.
Book Trucks.
Sliding Reference Shelves.
Portable Reference Shelves.
Roller Shelves, Book Supports.
Vertical Files.
Display Cases.
Stairs and Railings.
Booklifts.

All materials used in stack construction are the best and most suitable for this type of work.

The designs are most attractive and construction is based on the most scientific principles.

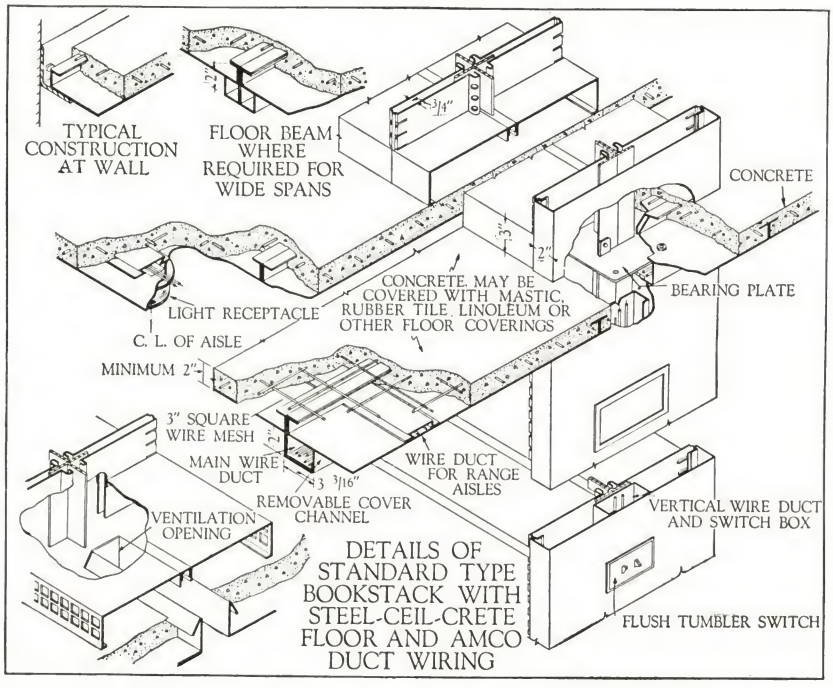
Workmanship the best that skilled mechanics of long experience can produce.

Finish of book stacks is baked-on enamel, covering all parts of the product and giving the greatest protection and wear resistance.

ART METAL STANDARD TYPE BOOK STACK



Philadelphia Free Library
Main book stack



Art Metal Standard Type Book Stack with full depth hollow metal partitions or shelf supports fills the demand for the finest book stacks that may be desired either for stack room or reading room.

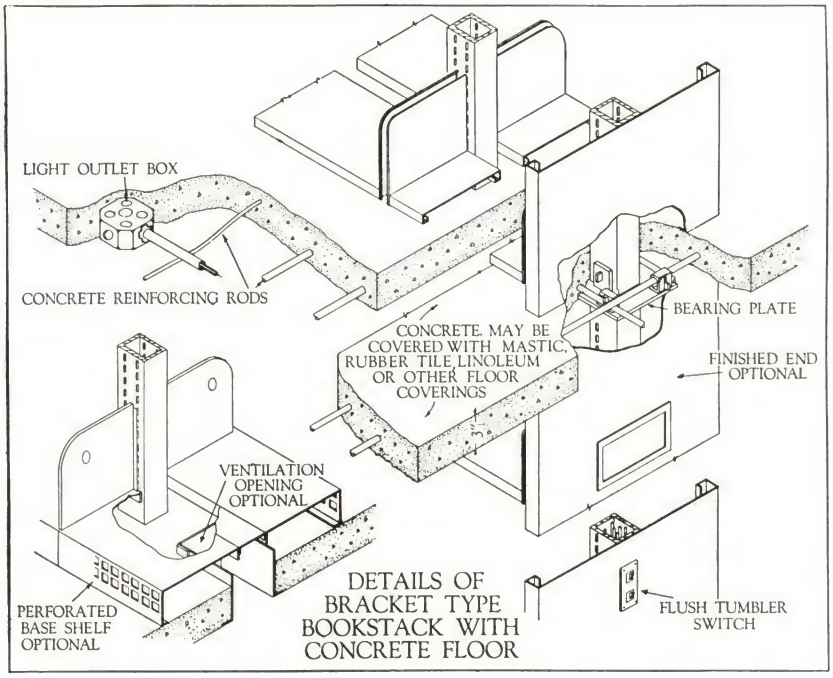
May be furnished with glass or mesh doors for protection of rare and valuable books.

ART METAL EQUIPMENT FOR LIBRARIES (Continued)

BRACKET TYPE BOOK STACK



Winchester, Mass., Public Library
ROBERT COIT AND KILHAM, HOPKINS AND GREELEY, Architects
An aisle between two Art Metal bracket type book stacks, showing the finished steel ceiling which carries all wiring raceways, eliminating conduit, and forming foundation for concrete floor above



Art Metal Bracket Type Stack with rectangular tubing columns having ¼ in. thick walls complies with all building codes. Neat appearance, without projecting flanges, and welded construction throughout are outstanding features.

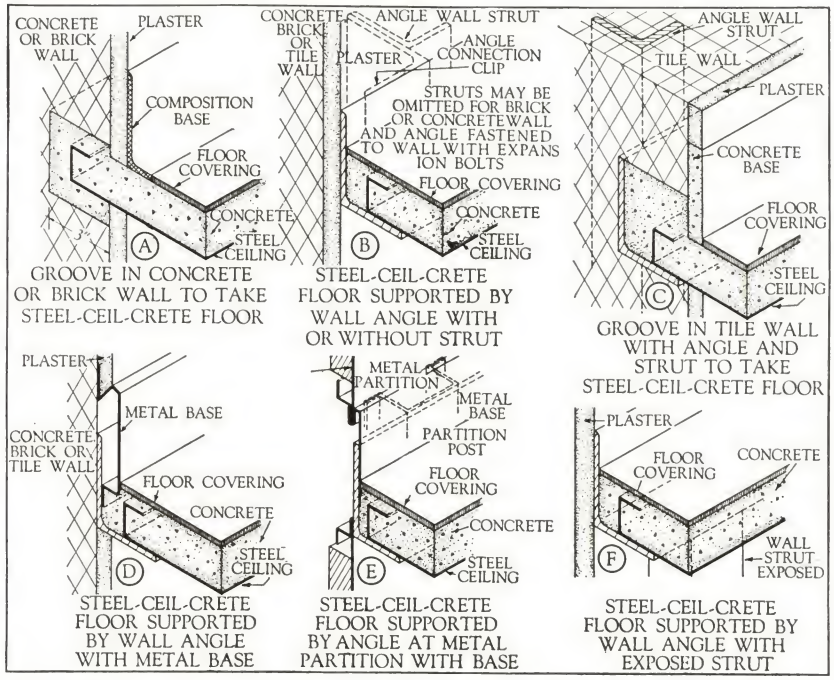
Wiring is concealed in stack columns and deck floor.

For one-tier stacks and where only a few tiers are considered, the stack columns may be formed up of sheet steel and welded into a modified tubing.

"STEEL-CEIL-CRETE" CONCRETE DECK FLOORS



Yale Divinity School, New Haven, Conn.
Stack room columns in place



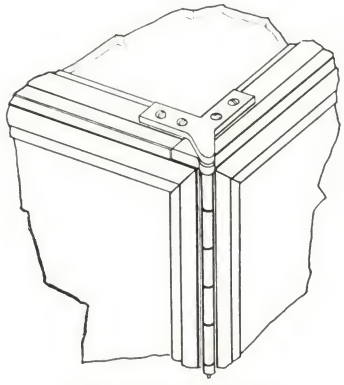
Art Metal "Steel-Ceil-Crete" Concrete Deck Floors for library stack rooms consist of permanent steel forms, factory finished, forming the ceiling of the deck floor in which the concrete is poured. The "Amco-duct" wire raceway system, bearing Underwriters' label, with all raceways, outlets, and switch boxes for stack room wiring is an integral part of the deck floor.

Designed to give the maximum strength with the lightest weight of floor construction.

Deck floors may also be concrete with exposed concrete ceiling where appearance is not a major consideration and where low cost is the most important factor.

DISPLAY CASES FOR MUSEUMS

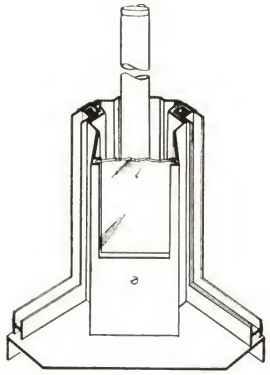
Art Metal
Jamestown, New York
U. S. A.



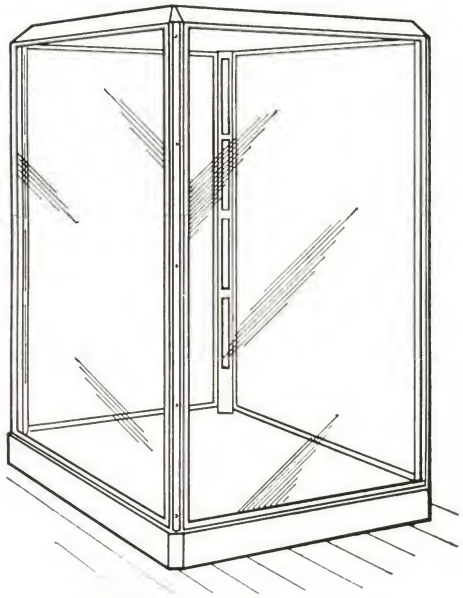
CORNER SECTION
Showing Pivot Plate which distributes hinge load to entire case.



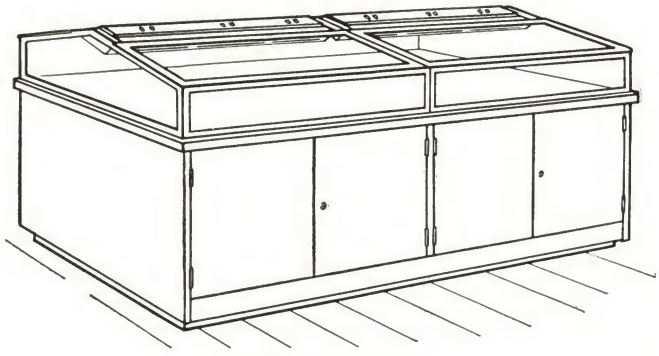
CORNER SECTION
Typical Closed Corner section which illustrates method of dust proofing



SECTION SHOWING PILASTER LIGHT
Pilaster Light (Fluorescent lamps) creates minimum of heat, cuts down cross sectional area behind obscure glass, minimum shadows with even light throughout case. Lights can be removed from the outside of the case



FREE STANDING CASE
With lights in each corner section



SLOPE TOP CASE
Double Faced Lights in this case through center

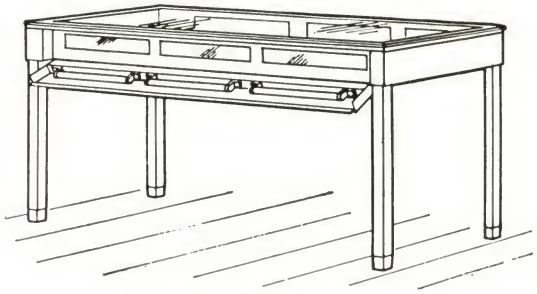
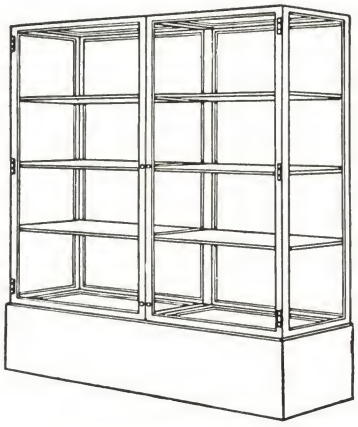


TABLE TYPE CASE
Lights in the sides
Shown with Lighting Panel open for access



CABINET TYPE CASE WITH SHELVES
Glass or Solid Backs optional

Cases can be made to any specified size or shape

ART METAL CONSTRUCTION COMPANY

Steel and Bronze Interior Equipment

GENERAL OFFICES AND FACTORIES

JAMESTOWN, N. Y.

BRANCH OFFICES

BALTIMORE, MD., 201 Union Trust Building
BOSTON, MASS., 12 High Street
CHICAGO, ILL., 208 W. Adams Street
CINCINNATI, OHIO, 1107 Union Central Building
CLEVELAND, OHIO, 220 Hanna Building
DETROIT, MICH., 333 State Street
HARTFORD, CONN., 75 Pearl Street
NEW YORK, N. Y., 369 Broadway
PHILADELPHIA, PA., 1107 Architect's Building
PITTSBURGH, PA., 1215 Plaza Building
WASHINGTON, D. C., 301 Southern Building
LONDON, ENGLAND, 199-203 Buckingham Palace Road

For Metal Doors and Trim, Kitchen Cabinets, Steel Partitions, Bank, Library and Hospital Equipment, Museum Cases, see File Index

ART METAL EQUIPMENT FOR BANKS AND PUBLIC BUILDINGS

Art Metal Construction Company builds steel equipment which includes every item used in bank, office or public building, from desk tray and waste basket to officers' desks and fire-resisting record safes. In filing devices, all forms and sizes to take every standard size record in use are manufactured.

Art Metal
Jamestown, New York
U.S.A.
TRADE-MARK

Requirements in desks, vault trucks, steel safes and filing devices which cannot be filled from stock can be met in our facilities for built-to-order work.

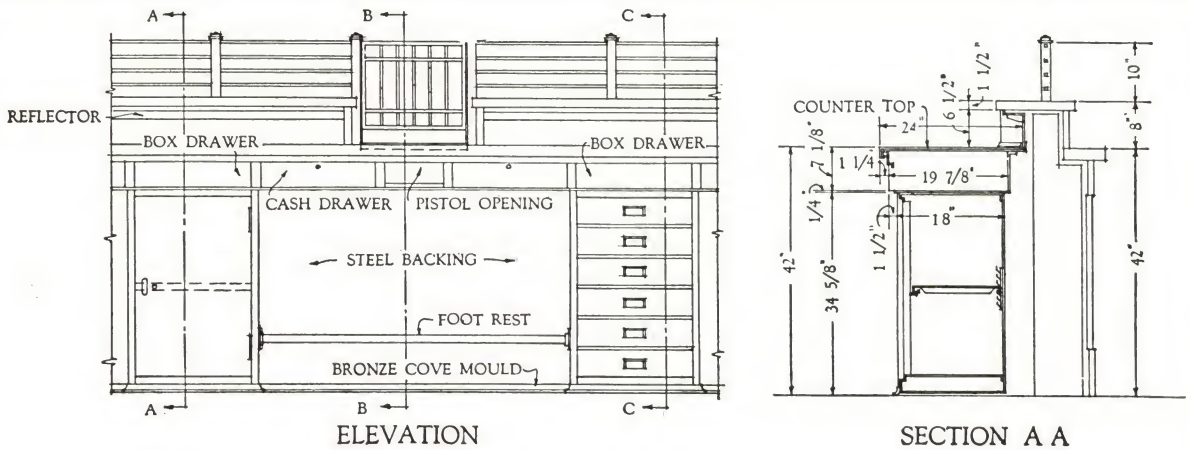
Art Metal equipment for banks and public buildings includes: Bronze Entrance and Vestibule Doors; Elevator Enclosures; Check Desks, Counter Screens; Wicket and Vault Grilles; Cage Partitions; Bank Counters, Filing Equipment; Bookkeeping Desks; Savings Ledger Desks; Desks for Officer's Use; Coupon Booths, Etc.

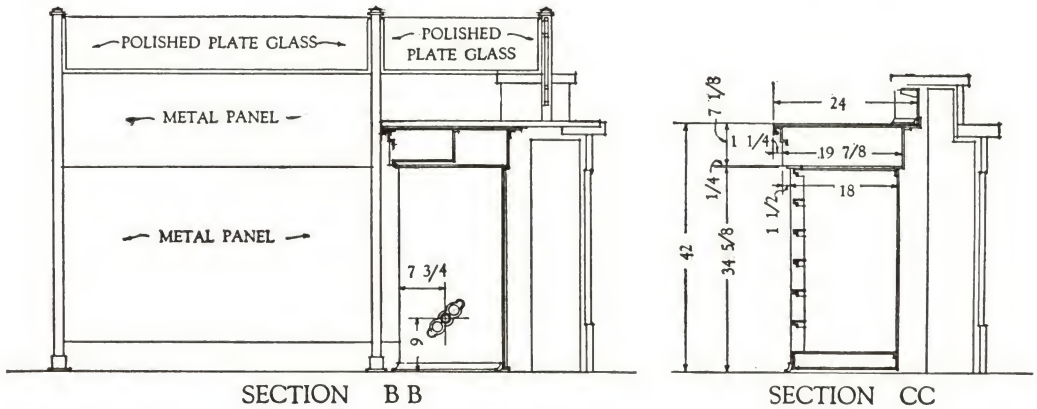
Co-operation with Architects Insures Individuality

Working from blue prints of the floor plans, Art Metal Engineers will submit modern layouts of counter equipment and cages for the most efficient conduct of work of the bank. This is done after consultation with architect and banking officials and a determination of the particular requirements.

Architectural individuality is obtained by Art Metal Designers working with the architect and carefully modeling the details from his designs. All work is individually prepared and carefully executed for each contract.

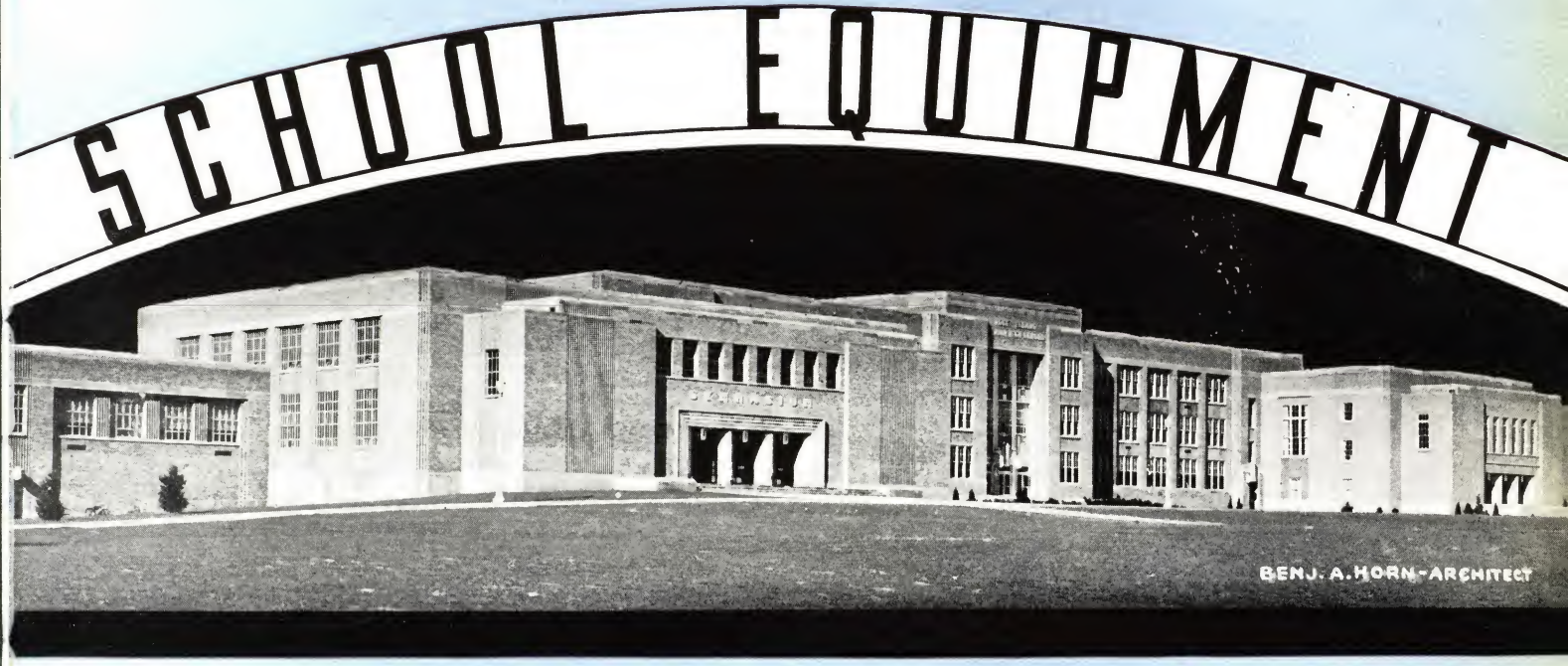
Competent sales engineers are maintained at the Home Office and at all Branch Offices. Their services are offered to architects, contractors and builders without obligation.





DETAILS OF TYPICAL COUNTER AND CAGE PARTITION

BECKLEY-CARDY COMPANY CHICAGO



CATALOG NO. 118

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SCHOOL FURNITURE AND EQUIPMENT A COMPLETE LINE

• • •

BECKLEY-CARDY COMPANY

1632 INDIANA AVENUE, CHICAGO, ILL.

EXPERIENCE—Established in 1907, and incorporated under the laws of the State of Illinois, the company has had thirty-two successful years in the manufacture and supplying of school equipment in every state and in several foreign countries. It is under capable management—men whose experience in the school field dates back over forty years. The various departments are under the supervision of experienced executives, each being a specialist in his own line.



UNDIVIDED RESPONSIBILITY — Our complete line of equipment facilitates ordering. One contract for all equipment simplifies handling of details and places responsibility for performance with one instead of many. Our financial responsibility is unquestioned, and the fact that all dealings are direct with the producer insures speedy adjustment of differences and prompt attention to specification changes.

MANUFACTURING FACILITIES—Large floor area and modern equipment provide excellent facilities for manufacturing the various types of furniture, blackboards, and equipment required in every branch of school activity. Manufacturing activities are segregated into numerous groups, each especially equipped to build a certain type of equipment, thus maintaining a higher standard of construction than would be possible if all manufacturing activities were grouped together.

DISTRIBUTION AND ACCESSIBILITY — Being centrally located, deliveries to all points are effected promptly. Probably eighty per cent of all the sources of raw materials used in the manufacture of school equipment are located nearby. This accessibility to raw stocks makes possible selection of the finest materials, and uninterrupted production. Sales representatives are located in most leading cities, thus making it possible for engineering service or assistance to be obtained easily and quickly.

SERVICE—Our engineering staff may be called on to furnish any assistance in preparing plans and specifications, or, if given an outline of the requirements, will prepare complete layouts, specifications, working details covering school seating, blackboards, laboratory furniture, and window shades. Any equipment problems submitted will receive prompt and careful attention.

SCOPE OF THIS CATALOG — This catalog is intended to acquaint the architect with the general character of Beckley-Cardy products. Limited space permits us to illustrate only the most generally used equipment. Descriptions and technical data must necessarily be very brief, but generally they will be found quite adequate for preparing specifications as a guide for taking bids. Our special catalogs on school seating, blackboards, laboratory furniture, or window shades will be furnished promptly on request if further information is desired.

PRODUCTS INDEX

CLASSROOM DESKS AND SEATS—Universally accepted movable and fixed types • • **PAGES 3 TO 7**

ASSEMBLY SEATING—Movable and fixed types adaptable to any school need • • • • • **PAGE 9**

TEACHERS' AND OFFICE DESKS—Plain and quartered oak are illustrated. Same styles may be had in maple or birch • • • • • • • • • • • **PAGE 11**

CHAIRS—Various types in oak, birch and maple are shown for the office, library and classroom • **PAGE 10**

BLACKBOARDS AND BULLETIN BOARDS—Specifications and complete information and map rail • • • • • • • • • • • • **PAGES 12 TO 14**

WINDOW SHADES—Special designs for regulating daylight and darkening shades • • • • **PAGE 15**

SCIENCE LABORATORY FURNITURE—General science, physics, chemistry and biology including instructors' desks for various subjects **PAGES 16 TO 20**

DOMESTIC SCIENCE FURNITURE—Student tables, cabinets, including sewing room equipment **PAGE 21**

DRAFTING AND ART WORK FURNITURE—Mechanical drawing desks, art tables and commercial desks • • • • • • • • • • • • • • **PAGE 22**

LIBRARY FURNITURE—Charging desks, shelving, magazine racks and tables • • • **PAGES 8 AND 23**

CLASSROOM FURNITURE

HOW TO CALCULATE THE NUMBER OF DESKS TO A ROOM

By consulting the tables given here one may easily determine how many pupils a schoolroom will seat. The plan at the left below is a typical seating arrangement and would differ only as the size of the room varies and location of doors and windows differ. To determine how many desks such a room will accommodate, multiply the number of rows as shown in table A by the number of desks in a row as shown in table B. For combination desks and single pedestal desks, add one rear seat in each row and also one front desk in each row. If desired, the front desk may be omitted and a complete desk used in its place.

The plan here shown is for a room 22 ft. wide and 28 ft. long, seated with sizes one or two of the non-adjustable desk types or size A of the adjustable type. Refer to table A to obtain the number of rows which can be placed in a 22-ft. room—the table shows 5 rows. Now refer to table B to ascertain how many desks may be placed in a row in a room 28 ft. long—the table shows 7 desks in a row. This gives 35 sittings for the room. If combination desks or single pedestal desks are used, there would be required 30 complete desks, 5 front desks and 5 rear seats to provide desks and seats for 35 pupils. In compiling the accompanying tables, ample allowance has been made for aisles and teacher's desk. Outside aisles, also front and rear aisles, should be 30 in. or more in width; aisles between rows of desks 18 in. or more in width. To be sure of the proper width for aisles, consult your local laws governing.

When different sizes of desks are placed in the same room, the seating capacity may be computed by determining how many average size desks the room will accommodate. As far as possible only desks of the same size should be placed in the same row unless desks are of the adjustable type so that the seat and desk top may be raised or lowered to fit the pupil.

To determine the correct size of seat and desk for a particular pupil, the following should govern: With the pupil sitting erect, the proper seat height should be such that there is no pressure under the knees at the front edge of the seat. The desk top should be at such a height that the under side of forearms rest on top of desk in writing position and so that they can be moved freely on the forearm muscles. Elbows should be about three inches from edge of desk, but not resting on the desk top. The edge of desk should be as near to the body as possible without cramping. Free movement of body must be allowed. Table C below has been formulated from averages taken from dependable, actual pupil measurements. If used in assembling classroom desks at the time of installation, very few, if any, changes will be required.

TABLE A

Width of Room	Number of Rows in a Room		
	Nos. 1 and 2	Nos. 3 and 4	Nos. 5 and 6
18 ft.	4	4	4
20 ft.	4	5	5
22 ft.	5	5	6
24 ft.	5	6	6
26 ft.	6	6	7
28 ft.	7	7	8
30 ft.	7	8	8
32 ft.	8	8	9
34 ft.	8	9	10

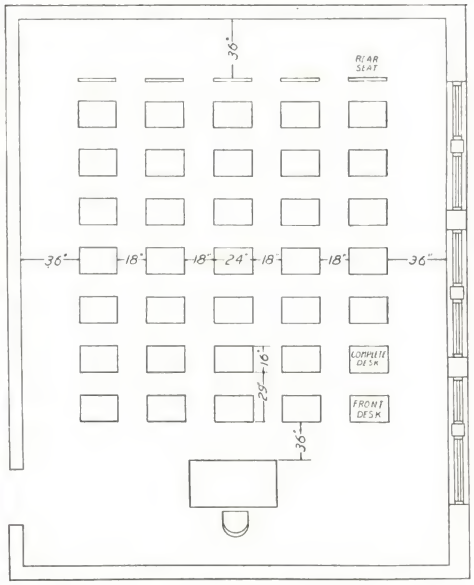
TABLE B

Length of Room	Number of Desks in a Row		
	Nos. 1 and 2	Nos. 3 and 4	Nos. 5 and 6
24 ft.	5	5	5
26 ft.	6	6	7
28 ft.	7	7	8
30 ft.	7	8	9
32 ft.	8	9	10
34 ft.	9	10	11
36 ft.	10	10	12
38 ft.	11	11	13
40 ft.	11	12	14

TABLE C

Grade	Seat Heights in Inches								
	10	11	12	13	14	15	16	17	18
I	40%	40%	20%						
II	10%	30%	50%	10%					
III		20%	40%	40%					
IV			30%	40%	20%	10%			
V			20%	30%	30%	20%			
VI				20%	40%	40%			
VII					30%	40%	30%		
VIII					20%	40%	30%	10%	
High School					20%	20%	20%	20%	20%

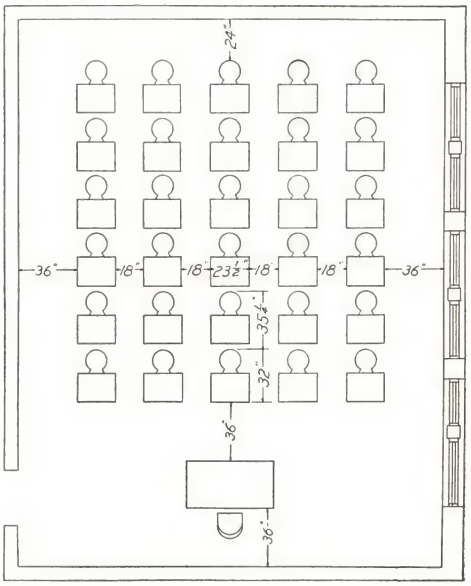
TYPICAL FIXED AND MOVABLE SEATING



Because of the fact that movable seating requires more space per desk than fixed seating, room capacities are somewhat reduced. The different types of movable desks vary in size of floor area required for placement; therefore, we show at the right a room 22 x 28 feet seated with movable desks. An accurate comparison can thus be made with a room of the same size shown at the left equipped with stationary desks.

At Left—A classroom 22 by 28 feet equipped with combination stationary, adjustable combination or single pedestal desks, large size, accommodates 35 pupils.

At Right—A classroom 22 by 28 feet with movable desks of the Premier type or fixed separate desk and pedestal chair type, large size, accommodates 30 pupils.



CLASSROOM FURNITURE

NON-ADJUSTABLE MOVABLE DESK • • MOVABLE CHAIR DESK



No. 1017
PREMIER

No. 1019



UNIT
DESK-CHAIR
With Plywood Seat

No. 1026
TABLET ARM



No. 1024

With Saddle Seat
No. 1029
TABLET ARM



No. 1028

NO. 1017 PREMIER NON-ADJUSTABLE DESK has combined in it most of the advantages of the adjustable Premier and other desks of the adjustable Premier type, and in addition, has the price advantage and economy of floor space of the four-post movable chair desk. It can be had with roomy book box, or study top and book rack under seat (No. 1019). Desk top is level, thus adapted to group study. Has correct posture saddle seat chair.

WOOD PARTS are made of birch or maple, finished standard school brown. Spacious box is entirely wood, substantially constructed; chair seat has deep cut saddle, back slats are steam bent.

METAL PARTS are formed from cold rolled seamless steel tubing and sheet steel electrically welded, thus insuring stability. Legs are fitted with hard rubber feet 1¼ in. in diameter, which hold desks in perfect alignment and afford ample floor protection.

Made in five sizes to accommodate all ages from primary through high school.

TABLE OF SIZES—Dimensions Are in Inches

Size	Size of Top	Height of Top	Size of Seat	Height of Seat	Floor Space Required	Weight
1	16 x 22	29½	14 x 16	17	22 x 31	45 lbs.
2	16 x 22	28	14 x 16	16	22 x 31	45 lbs.
3	16 x 22	26	12 x 14	15	22 x 30	42 lbs.
4	16 x 22	24	12 x 14	14	22 x 30	42 lbs.
5	16 x 22	23	10½ x 12	13	22 x 30	40 lbs.

NO. 1024 DESK CHAIR has embodied in it several of the posture features heretofore only obtainable in the more costly desks.

METAL PARTS are die formed from cold rolled steel of extra heavy gauge to insure maximum strength. Joints are electrically welded. Metal parts are finished in taupe enamel.

WOOD PARTS. Seat is five ply birch united with Casein water resistant glue. Desk top and rails are solid wood, all wood parts are finished in standard school brown. Book drawer has overlapping wood front and wood bottom, drawer sides and back are formed cold rolled steel. Wood front and bottom insure noiseless operation. Desk may be had without book drawer. Drawer space provides roomy book compartment under seat.

NO. 1026 TABLET ARM CHAIR—Same design and construction as No. 1024 Desk Chair, but in place of desk top this unit is equipped with large roomy tablet arm. Has large book space under seat.

NO. 1028 DESK CHAIR—Same as No. 1024 but instead of plywood seat, this desk has deep cut saddle seat made of four quarter stock. Book drawer can be omitted, drawer space provides roomy book compartment under seat.

NO. 1029 TABLET ARM CHAIR—Same design as No. 1024 unit desk, but has tablet arm instead of desk top, and solid saddle seat instead of plywood seat. Has large book space under seat.

TABLE OF SIZES Nos. 1024-1028—Dimensions Are in Inches

Size	Size of Desk	Height of Desk	Height of Seat	Size of Seat	Weight Without Drawer	Weight of Drawer
AA	16 x 22	27½	18½	16 x 16	40 lbs.	6 lbs.
A	16 x 22	27½	16½	16 x 16	39 lbs.	6 lbs.
B	14 x 20	24½	14	14½ x 14½	35 lbs.	5 lbs.
C	12 x 18	20¼	11¼	12¾ x 12¾	30 lbs.	4 lbs.

Dimensions of Nos. 1026 and 1027 Tablet Arm Chairs are same as above except for tablet arm. Size AA and A tablet arms are 12 x 24; Size B—12 x 22¾; Size C—12 x 21.

WEIGHTS: Size AA and A—35 lbs.; Size B—30 lbs.; Size C—25 lbs.

CLASSROOM FURNITURE

ADJUSTABLE MOVABLE DESK • • DOUBLE PEDESTAL DESK AND CHAIR

No. 1016 PREMIER MOVABLE DESK—In the Premier the separate desk and chair idea has been fully developed. In it are incorporated separate adjustment of top and seat, both horizontal and vertical. Seat has noiseless wearproof revolving mechanism with automatic take-up to provide against wear. The large book-box with deep slope eye conservation top is fitted with noiseless, slam-proof hinges which hold the lid at any angle. The desk lid is splined to prevent splitting, and it is also provided with a leveling device. The spacious box has a large pencil tray. The seat is deep saddle type with saddle extending to the rear edge, thereby inducing correct posture. The seat turns noiselessly to 45° angle each way. The desk and seat adjustments are simple and positive. Legs are fitted with hard rubber feet 1¼ in. in diameter, which hold desk in perfect alignment and afford ample floor protection. The Premier Desk is made in two models, as illustrated, with large roomy box (No. 1016) and with large study top having 2½-in. slope (No. 1018) for study halls and classrooms provided with individual lockers.

METAL PARTS are formed from heavy gauge cold rolled seamless steel tubing and sheet metal electrically welded. The desk support and seat support are one-piece heavy steel tubing, seat swivel is under tension with automatic take-up to insure permanently smooth action. Finished in taupe.

WOOD PARTS are made of birch or maple, finished standard school brown. Seat has deep cut saddle, back slats are steam bent. Top is fitted with hard rubber top inkwell set flush with top of desk.

TABLE OF SIZES—Dimensions Are in Inches

Size	Size of Desk Top	Desk Height	Size of Seat	Height of Seat	Floor Space Required	Weight
A	18 x 24	27 to 30	14 x 16	14½ to 18	24 x 34	55 lbs.
B	18 x 24	24 to 28	12 x 14	13 to 15	24 x 33	53 lbs.
C	18 x 24	23 to 27	10½ x 12	11½ to 14	24 x 32	50 lbs.

No. 1007 DOUBLE PEDESTAL DESK—The two separate pedestals provide unusual stability and strength such as are not to be had in any other type of pedestal desk. The large separate bases under desk and chair insure permanent fastening to all types of floors. This desk may be had with either double slope lifting lid box as illustrated on No. 1016 or with study top having 2½-in. slope (illustrated), for study halls and classrooms provided with individual lockers. Chairs can be had stationary or with swivel turning to 45° angle.

DESK AND CHAIR pedestals consist of 2½-in. steel columns, securely fastened to cast metal close-fitting floor plate 11⅜-in. in diameter. The adjustable type base has positive seat and desk adjustment. Metal finished in taupe.

WOOD PARTS are made of birch or maple finished standard school brown, seat has deep cut saddle and back slats are steam bent. Inkwells fit flush with top of desk.

TABLE OF SIZES—Dimensions Are in Inches

Size	Size of Desk Top	Desk Height	Size of Seat	Height of Seat	Floor Space Required	Weight
1	18 x 24	30	14 x 16	18	24 x 31	70 lbs.
2	18 x 24	29	14 x 16	17	24 x 31	65 lbs.
3	18 x 24	28	12 x 14	16	24 x 30	60 lbs.
4	18 x 24	27	12 x 14	15	24 x 30	55 lbs.
5	18 x 24	26	10½ x 12	14	24 x 29	50 lbs.

If adjustable pedestal desk is desired, specify No. 1008. Dimensions are same as stationary desks excepting heights of seats and tops. Desk adjustments: Size A, 27 to 30 in.; Size B, 24 to 28 in.; Size C, 23 to 27 in. Seat adjustments: Size A, 14½ to 18 in.; Size B, 13 to 15 in.; Size C, 12 to 14 in. Measurements are taken at highest point from floor.



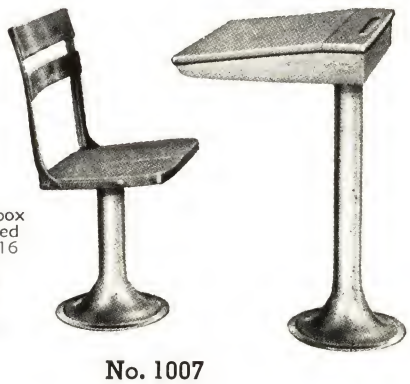
No. 1016

If flat top is desired for typewriter, specify No. 1018 F.T.



No. 1018

If lift lid box as illustrated on No. 1016 is desired instead of study top, specify No. 1006.



No. 1007

CLASSROOM FURNITURE

STEEL LEG TABLES AND CHAIRS *for* CLASSROOM • LIBRARY • CAFETERIA



No. 1060 SERIES STEEL PANEL-END TABLES WITH BOOK COMPARTMENTS



No. 1061 SERIES TUBULAR STEEL LEG TABLES

STEEL LEG TABLES

STEEL PANEL-END TABLES—For group work in primary grades or kindergarten, library and cafeteria, these tables are rapidly replacing the conventional four-post all-wood table. They are furnished in various heights to accommodate pupils of all ages from primary grades through college. Tops are made of birch plywood, built with edges reinforced to a thickness of 1½ in., finished standard school brown. Tops are securely fastened to steel panel ends. Heavy wood bracing support lengthwise of the table beneath the middle of the top with both ends securely bolted to metal standards insures greater rigidity. Legs are set twelve in. from end, allowing freedom and leg room. The following schedule gives the size and heights of tables and number, and size of book compartments available.

Tables are made in 20, 22, 24½, 27, and 29 in. heights. Specify heights desired.

TABLE OF SIZES Nos. 1060 AND 1061 SERIES
Dimensions Are in Inches

Size of Top	Number of Compartments	Size of Book Compartments			
		Width	Depth	Height	Weight
24 x 44	2	11	9½	3½	80 lbs.
24 x 66	3	12	9½	3½	110 lbs.
30 x 50	6	12	12½	3½	120 lbs.
30 x 72	8	12	12½	3½	140 lbs.
30 x 60	6	12	12½	3½	130 lbs.
36 x 72	8	12	15½	3½	160 lbs.

Two types of legs are available, No. 1060 Series pressed steel end, and No. 1061 Series tubular steel end. Both styles may be had with or without book compartments, and in various heights.

STEEL CLASSROOM CHAIRS

STEEL CLASSROOM CHAIRS—These all-purpose chairs are substantially built and durably finished; frames are formed from cold rolled steel, all edges are rounded, steel parts are electrically welded into one unbreakable unit. There are four steel stretchers which securely brace the legs in every direction. Front and rear stretchers are set back to avoid contact with legs. Wood parts are birch or maple, back rails are steam bent. Chairs are made with two styles of seats, five-ply scroll type as illustrated and with solid saddle seat made of four-quarter stock. Feet are embossed to glide smoothly, bottoms of feet are punched for attaching rubber cushioned glides. These chairs are unexcelled for classroom, cafeteria, and general school use. Made in several sizes. Wood parts finished standard school brown, metal parts in taupe.



SIZE C SIZE B SIZE A

ILLUSTRATING No. 1048

If chairs are desired with plywood seats as illustrated, specify No. 1048, and for solid saddle seats, specify No. 1046.

TABLE OF SIZES—Dimensions Are in Inches

Size	Height of Seat	Depth of Seat	Width of Seat	Height of Back	Shipping Weight
AA	18½	16	16	16	23 lbs.
A	16½	16	16	16	22 lbs.
B	13½	13	14¼	14¼	12½ lbs.
C	11⅝	10¾	11¾	11¾	9 lbs.
D	9½	10¾	11¼	11¼	8½ lbs.

CLASSROOM FURNITURE

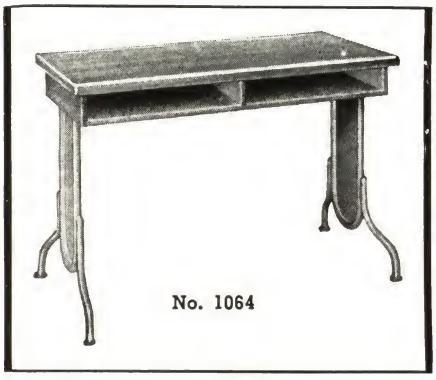
DESK UNITS • CLASSROOM TABLES AND CHAIRS

NO. 1036 DESK UNIT — Made of close grained birch or maple, finished in standard school brown. The stock used is exceptionally heavy throughout. The box bottom is solid wood framed-in, which aids materially in making desk always remain rigid. The front edge is ovaled off, as well as all corners on legs, and top and bottom edges on spreaders. Tops are secured to box frames with pressed heavy steel expansion clips. Pressed steel corner angles are used to strengthen and cross brace joints. Legs are tapered and equipped with case hardened steel gliders. Chairs are constructed throughout of heavy stock with adequate bracing to withstand abuse which school chairs receive. Seats are correct posture type. Back rails have oval edges, no sharp corners. Made in six different sizes, with seat heights ranging from 10 to 18 in., all properly proportioned.

TABLE OF SIZES—Dimensions Are in Inches				
No.	Size of Top	Height of Desk	Height of Chair	Weight
1	18 x 24	29	17	70 lbs.
2	18 x 24	27	16	60 lbs.
3	16 x 24	26	15	50 lbs.
4	16 x 24	24	14	40 lbs.
5	14 x 22	22	12	30 lbs.
6	14 x 22	20	10	30 lbs.



No. 1036
DESK UNIT



No. 1064

NO. 1064 TWO-PUPIL TABLE — The economical answer for double classroom seating. Table top is made of five-ply birch or maple, edges banded to 1½ in. thick, has two large book compartments. Legs are cold rolled tubular steel, fitted with hard rubber feet 1¼ in. in diameter. Top finished standard school brown, metal parts in taupe. Size of top 20x44 in., size of book compartment 19½ in. wide by 16¾ in. deep by 3½ in. high. Made in 22, 24, 27, and 29 in. heights. Weight approximately 70 lbs.

NO. 1053 CLASSROOM CHAIR — Is designed for use with classroom tables, also adapted for library and teachers' chairs. Made in two styles, adjustable and non-adjustable, and with revolving or non-revolving seat. The base is tubular steel. The seat is deep saddle to the extreme rear edge. Woods are maple or birch finished standard school brown. Metal parts finished in taupe.



No. 1053

MADE IN THREE HEIGHTS—A, B AND C			
Size	Height	Size of Seat	Weight
A	17	14 x 16	17 lbs.
B	15	12 x 14	16 lbs.
C	12	10½ x 12	15 lbs.



No. 1062

NO. 1062 DESK UNIT— The unit table desk provides the freedom in classrooms only possible with movable desks and chairs. Students showing ability are placed by themselves; others requiring special tutoring may be placed together, and the teacher is able to save time and energy by instructing the children in groups rather than individually as is necessary with a fixed type of desk.

The No. 1062 combination here shown is not only modern but thoroughly practical for all grades. Book box is securely fastened to the cold rolled tubular steel supports, chair and desk supports are die formed and electrically welded, thus insuring great strength and rigidity. Chair top is securely mounted on tubular base. Legs are fitted with hard rubber feet 1¼ in. in diameter which keep desks in perfect alignment. Chairs may be fitted with hard rubber casters if desired. Roomy desk box and chair top are made of birch or maple finished standard school brown. Chair has correct posture back and deep cut saddle seat with steam bent back slats. Metal parts are finished in taupe. Made in five heights.

TABLE OF SIZES—Dimensions Are in Inches					
No.	Size of Desk Top	Height of Desk	Size of Chair Seat	Height of Chair	Weight
1	18 x 24	29	14 x 16	17	40 lbs.
2	18 x 24	28	14 x 16	16	40 lbs.
3	18 x 24	26	12 x 14	15	38 lbs.
4	18 x 24	25	12 x 14	14	38 lbs.
5	18 x 24	24	12 x 14	13	35 lbs.

CLASSROOM FURNITURE

No. 3548

MADE IN EITHER OAK OR MAPLE



NO. 3548 TABLET ARM CHAIR—Our most popular chair built for all round use from the grades through senior high school. A chair that will stand up under severe use. Made of oak with maple arm, finished in standard school brown. Full saddle seat 17¾ in. wide, 16¾ in. deep. Height of back 15½ in., height of seat from floor 17 in., front posts cut out of 2-in. stock. Tablet arm 23½ in. long, 11¼ in. wide, with two angle iron braces under arm at front post, and 3-way 12-gauge steel brace under arm at back post. Back posts 1¼ in. stock. Rails 2½ in. wide. Weight 25 lbs.

NO. 1000 COMBINATION DESK *(Below)*—In this desk graceful design are combined for long life and correct posture. Desk standards are cast metal finished in black enamel, wood parts are birch finished standard school brown.

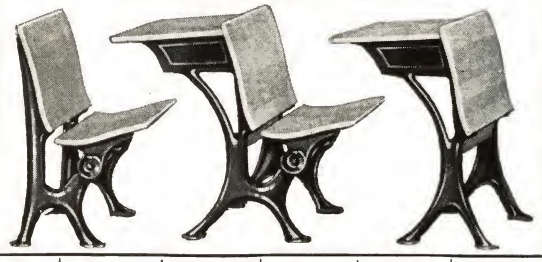
No. 3553

NEW STYLE MUTTON LEG TABLET ARM



NO. 3553 TABLET ARM CHAIR—An exceptionally good chair with new style mutton leg arm, especially desirable for senior high schools, colleges, and universities. The shape of this new arm brings the wide part of the arm in front of the student instead of at the side, thus the arm is utilized to better advantage. Constructed of quarter sawed oak or maple as specified, double-spliced dowel construction, finished in standard school brown. Tablet arm may be had in rock maple or quarter sawed oak. Height of back above seat 15½ inches. Deep saddle seat 17 in. wide, 16½ in. deep. Chair has 3 stretchers ⅞ in. square front and back. Tablet arm 25 in. long, 12½ in. wide. Front post 1½ in. Back posts 1⅞-in. steam bent. Corner blocks under seat. Weight 25 lbs.

COMBINATION DESK No. 1000



Size of Desk	Ages Accommodated	Height of Seat from Floor	Height of Top	Width of Top	Length of Single Desks
1	17 yrs.	17 ins.	29 ins.	16 ins.	24 ins.
2	14 yrs.	16 ins.	28 ins.	16 ins.	24 ins.
3	11 yrs.	15 ins.	26 ins.	14 ins.	21 ins.
4	8 yrs.	14 ins.	25 ins.	14 ins.	21 ins.
5	6 yrs.	13 ins.	24 ins.	12 ins.	19 ins.
6	5 yrs.	12 ins.	23 ins.	12 ins.	19 ins.

NO. 1044 PEDESTAL TABLET ARM CHAIR—An ideal tablet arm chair for high school, college, and university lecture rooms. Being firmly fixed to the floor, it conserves space. It is correctly proportioned, has correct posture saddle seat, and is built to withstand severe use. Wood parts are birch or maple, finished standard school brown. Base is cast metal with extra large floor flange, thus insuring stability. Metals are finished in taupe. Seat is 16 in. wide, 14 in. deep. Height of seat, 16½ in. from floor. The back is 14½ in. high. Tablet arm is 12 inches wide by 24 in. long.

No. 1044



No. 1051



NO. 1051 MOVABLE PEDESTAL TABLET ARM CHAIR—Chair is especially designed for high school and college use. Chair may be had with revolving or nonrevolving seat. It is correctly designed, having deep saddle extending to outer edge of seat, and correct posture back. The metal parts are tubular steel. Woods finished in standard school brown. Metal parts finished in taupe. Height of seat 17½ in., width 16 in., and depth 14 in. Height of back 14½ in. Tablet arm 24 in. long and 12 in. wide.

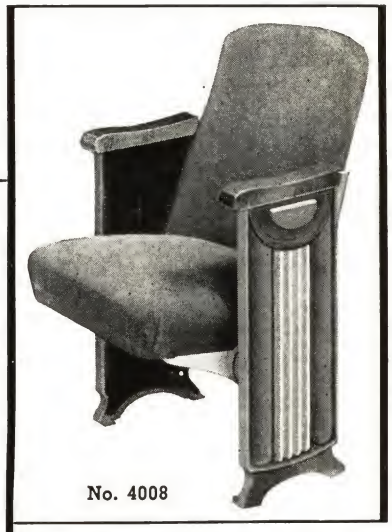
AUDITORIUM SEATING and STEEL FRAME FOLDING CHAIRS


No. 4000

AUDITORIUM SEATING

Limited space permits us to illustrate but a few designs from our line which embraces every type, kind, and size of chair for school auditorium and gymnasium. Embodied in the line are the most modern ideas and engineering features known. Metal parts are either castings or steel stampings as may be best fitted to the design and particular construction. Comfort, posture, and correct architecture and decorative treatments have been carefully worked out. In Beckley-Cardy's line of auditorium seating every possible desire or need can be gratified without excess expenditure. Our engineering service is available without cost or obligation.

NO. 4000 — Five-ply 7/16 in. back and seat or any thickness back up to 7-ply 3/4 in. Finished standard school brown. Standards are heavy cast metal. Hinge is direct ball bearing type.


No. 4008

NO. 4008—A luxurious chair with deep curve back and spring edge seat, the last word in comfort. Standards are cast metal. Back and seat covering imitation leather, jacquered velour, or any other covering material desired.

NO. 4007 — Deep curve back 5-ply 7/16 in. or any thickness up to 7-ply 3/4 in. Birch wood finished standard school brown. Nine-spring seat covered with either imitation leather or other covering as selected. Direct ball bearing hinge. Standards cast metal.

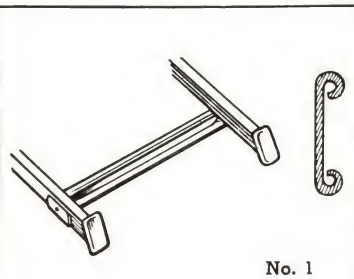

No. 4007

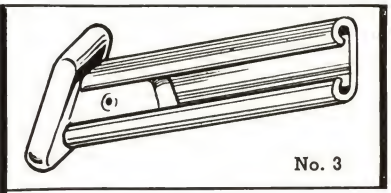
NOS. 3660-3661—PEERLESS STEEL FRAME FOLDING CHAIRS

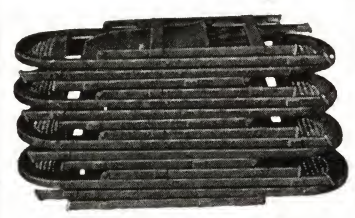
The Peerless Chair is unusually comfortable. It has a wide form fitting perforated back; deep curved seat placed at the proper angle and height from the floor to promote correct posture and relaxation. No weariness experienced even after hours of use. While this chair was built primarily for comfort, strength and safety were not sacrificed. Many years of hard use were built into it and every precaution was taken to avoid every feature in construction which might cause injury to fingers, ankles, feet or clothing. It sets solid on the floor; does not squeak or groan, causing annoyance when in use. Manufactured of cold-rolled steel. Legs are double beaded, 16-gauge channel steel. All parts are either electrically welded or riveted, and at points where greatest strain is received both rivets and welding are used to insure greatest possible strength. Seat is 15 in. wide, 15½ in. deep and 17½ in. high; back is formed on a deep curve, perforated. Legs have three bend-proof braces and are fitted with long wearing non-breakable rubber feet. Standard finish is light brown, wood seat finished to match. Special finishes available if desired. Made in both X type and Y type.


No. 3660


No. 3661


No. 1


No. 3


No. 2

No. 1 Chair legs reinforced with 3 extra strong braces welded and riveted to legs. Braces have rolled edges which greatly increases strength; will hold weight of three hundred pounds without bending, a feature which adds years of service. **No. 2** Close folding feature saves space. The Peerless Chair folds flat; stacks compactly to any desired height without danger of stacks tipping. **No. 3** Hard rubber feet protect floors, prevent slipping. Quickly removed and replaced without tools. Leg section shows how steel is formed for greatest strength. This formation also conceals sharp edges . . . greater safety and neater appearance.

OFFICE AND CLASSROOM FURNITURE

CHAIRS FOR CLASSROOM, LIBRARY, TEACHERS', AND OFFICE USE



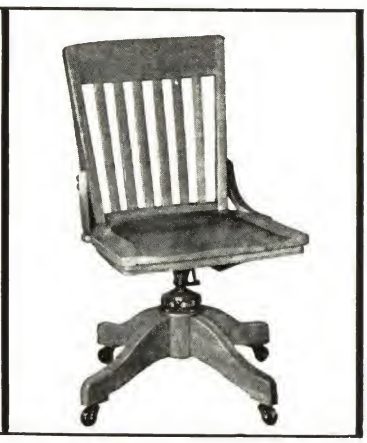
No. 3500—Side chair of plain oak, quartered oak or birch finished in either light oak, standard school brown, or birch walnut. Saddle seat 18½ in. wide, 16¾ in. deep. Height of back 18½ in. Weight 20 lbs.



No. 3502—Arm chair of plain oak, quartered oak or birch finished in either light golden, standard school brown, or birch walnut. Deep saddle seat 20 in. wide, 17½ in. deep, distance between arms 19 in. Height of back 18½ in. Weight 25 lbs.



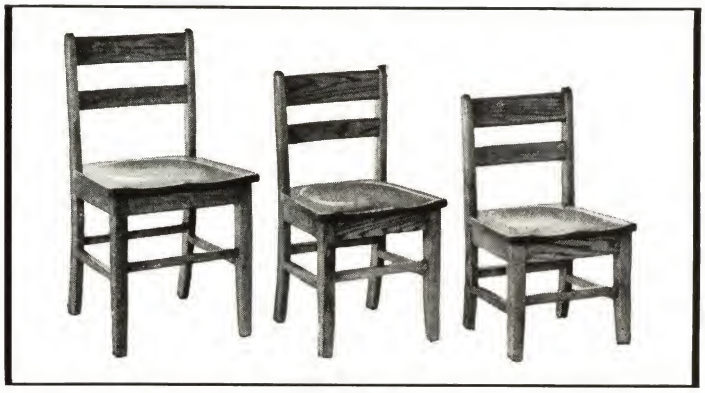
No. 3506—Revolving arm chair of plain oak, quartered oak or birch finished in light golden, standard school brown, or birch walnut. Deep saddle seat 20 in. wide, 17½ in. deep, distance between arms 19 in. Height of back 18½ in. Weight 36 lbs.



No. 3504—Revolving chair of plain oak, quartered oak or birch finished in either light golden, standard school brown, or birch walnut. Deep saddle seat 18½ in. wide, 17½ in. deep. Height of back 18½ in. Weight 32 lbs.



No. 3580—Special school chair. Extensively used for library, cafeteria, and teachers' chairs. Substantially constructed of oak, finished standard school brown. Deep saddle seat 17½ in. wide, 16½ in. deep. Box rail 2¼ in. wide with corner blocks. Back posts 1⅝ in., steam bent. Top slat 3½ in., middle slat 2½ in. All sharp corners and edges rounded. Chair has seven stretchers under seat. Height of back 14½ in. Weight 18 lbs.



GRADE CHAIRS

These grade chairs are standard equipment in hundreds of schools. Double backrails, curved to fit the child, and deep saddle-shaped seat. Solid oak or birch, finished standard school brown.

No. 3556—Chair. Seat 10 in. high, 12 in. wide and 11 in. deep. Back height 9½ in. Weight 8 lbs.

No. 3557—Chair. Seat 12 in. high, 13 in. wide and 12 in. deep. Back height 11 in. Weight 9 lbs.

No. 3558—Chair. Seat 14 in. high, 13½ in. wide and 12½ in. deep. Back height 12½ in. Weight 11 lbs.

No. 3559—Chair. Seat 16 in. high, 15½ in. wide and 14 in. deep. Back height 14 in. Weight 15 lbs.



No. 3524—Library chair. May be had in either plain white oak, quartered oak, or birch, finished light golden, standard school brown, or birch walnut. Deep saddle seat, 17½ in. wide, 17 in. deep. Height of back 18 in. Weight 18 lbs.

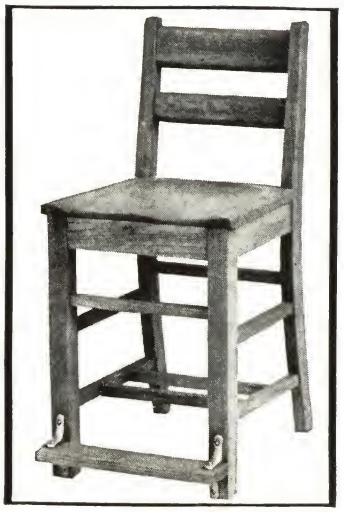


No. 3582 Laboratory Stool *(At Lower Left)*—Made of selected oak. Finished natural or standard school brown. Scoop seat, 18 in. high. Legs 1½-in. square, tapered. Made in three sizes, with the 14-in. having 4 stretchers. Weight 8 lbs.

No. 3582A—Same as 3582 except that seat is 24 in. high. Weight 10 lbs.

No. 3582B—Same as 3582 except that stool is 30 in. high and has 12 stretchers. Weight 11 lbs.

No. 13150 Laboratory Chair *(At Lower Right)*—Especially designed for the Laboratory and Physics Room. Made of plain oak finished standard school brown. Back posts are steam bent. Box rails doweled to posts. Seat 21 in. from floor, 15½ in. deep. Foot rest 3 in. from floor, doweled to front post and reinforced with two pressed-steel braces. Height of back from seat, 12½ in. Weight 24 lbs.



TEACHERS' DESKS, OFFICE DESKS and OFFICE AND LIBRARY TABLES

This series meets the demand for better equipment. All exterior parts of desks are full quartered white oak, high-grade construction throughout. Writing beds are 5-ply veneer, 1¼ in. thick. Core stock is chestnut, made of strips not more than 4 in. wide. Cross banding is 1⅛ in. thick. Edges are veneered, showing figured wood on all surfaces. Panels are 5/16 in. thick, built up 3-ply with wood grain running vertical. Legs are 1¾ in. square, tapered, and are equipped with brass ferrules. Drawers are of hardwood dovetailed front and back with 3-ply bottoms framed in and partitioned. Bottoms are glue blocked. Drawer fronts have raised panels. Drawers are finished inside to match exterior of desk and are controlled by noiseless locking device. Knee drawers have cylinder type paracentric key locks. Wood pulls are furnished unless brass pulls are specified at additional price. Finished in light oak or standard school brown. Tops are hand rubbed; bases velvet flat finish. Also obtainable in birch, finished standard school brown or walnut.



No. 3155

TABLE OF SIZES—Dimensions Are in Inches

NO.	LENGTH	DEPTH	HEIGHT	NO. OF DRAWERS	WEIGHT
3155	42	32	30½	4	130 lbs.
3150	60	34	30½	6	200 lbs.
3150A	54	32	30½	6	190 lbs.
3150B	50	32	30½	6	180 lbs.
3157	36	26	30½	1	75 lbs.
3157A	48	32	30½	1	100 lbs.
3157B	60	34	30½	2	140 lbs.
3157C	72	36	30½	2	175 lbs.



Nos. 3150 • 3150A • 3150B

No. 3108X and No. 3107X in workmanship, exterior finish and material, conform to the general description given above. The tops are 5-ply 1¼ in. quartered oak, bodies are plain oak. Finished in either light oak or standard school brown as specified. Desks may also be had made of birch finished standard school brown or walnut.

TABLE OF SIZES—Dimensions Are in Inches

NO.	TOP	LENGTH	WIDTH	HEIGHT	WEIGHT
3107X	1¼	42	30	30	140 lbs.
3108X	1¼	54	30	30	190 lbs.
3113X	1¼	60	32	30	200 lbs.



No. 3157



Nos. 3108X and 3113X

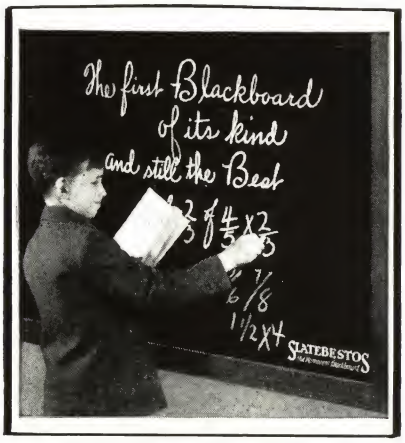


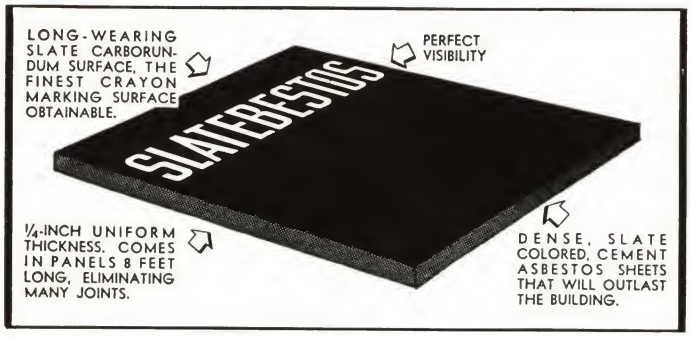
No. 3107X

SLATEBESTOS BLACKBOARD

THE FIRST BLACKBOARD OF ITS KIND— NOW INSTALLED IN OVER 3,000 SCHOOLS IN FORTY-EIGHT STATES

SLATEBESTOS is a product which has withstood every schoolroom test for nearly twenty years. Each step in its manufacture is scientifically controlled, insuring uniformity, long life, and utmost utility. The various ingredients (Portland cement, pulverized slate, long fiber asbestos) of which Slatebestos is composed are indestructible. These ingredients are properly combined under hydraulic pressure to form homogeneous, stone-like panels of great tensile strength. The ageing and hardening process continues for several years before the stone-like panels reach their maximum tensile strength; when this point is reached they never disintegrate or decay. Since SLATEBESTOS is manufactured of such indestructible materials, its life and usefulness are limited only by the building in which it is installed. Having practically no coefficient of expansion or contraction, Slatebestos is successfully used in all climates and in all types of school buildings. The boards are surface-treated by our own highly developed surfacing process which produces an exposed, closely knit surface of uniform color and texture. This surface is unexcelled for writing and erasing qualities.





SPLENDID SURFACE—All SLATEBESTOS surfaces—black, brown, green—are equally smooth, with just the proper carborundum content to make writing with all types of crayon easy and rapid. These close-grained surfaces consume very little chalk. The chalk marks are clear and distinct and, being sharply contrasted against the surfaces, they are clearly visible from any angle or position in the room. Crayon marks do not become imbedded in its dense surface, and the boards are therefore always easy to clean, with wear on erasers reduced to a minimum.

DIMENSIONS—Stock sizes are—widths, 3, 3½ and 4 ft.; lengths, 5, 6, 7, and 8 ft.; thickness, one-quarter inch. SLATEBESTOS can be cut to special size when so ordered. Boards will be cut at the factory. To insure perfect fit and guard against mistakes in taking measurements, we recommend cutting on the job. When cut to special size at the factory, all waste resulting from cutting is charged to the customer.

USED IN EVERY TYPE OF SCHOOL BUILDING—No special wall construction or treatment is necessary to prepare for SLATEBESTOS. It weighs only 2½ lbs. per sq. ft., therefore any ordinary wall will support it without undue strain. SLATEBESTOS may be fastened directly to brick, plaster, concrete walls, or wood studding. It can be installed in old buildings with utmost success.

EASY TO INSTALL—SLATEBESTOS is easily installed. We furnish complete detailed instructions with every shipment, showing the most practical method of installation. Any standard type of blackboard moulding may be used. For new buildings, complete details and specifications are usually furnished by the architect, however, to insure absolute satisfaction; complete installation instructions are also furnished with every shipment.

WARRANTY—SLATEBESTOS Blackboard is guaranteed against defective workmanship and material. Should any blackboard prove faulty in manufacture, such defect should be reported within 90 days from the date of installation. Boards found defective will be replaced or the complaint otherwise adjusted to the entire satisfaction of the purchasers. This warranty is intended to insure the purchaser against having been supplied with faulty material but does not cover ordinary wear, misuse or neglect.

SPECIAL COLORS—To meet the increasing demand for boards with writing surfaces which harmonize with classroom decorations, we are prepared to manufacture SLATEBESTOS in several colors. There are several shades of green, brown, tan and grey which can be produced very satisfactorily. However, certain basic ingredients limit the range of colors. To eliminate these would be detrimental to the writing and erasing qualities of the blackboard. If you have a color problem, submit it to us and we will gladly help you solve it.

SPECIFICATIONS

BLACKBOARDS

Blackboards shall be Genuine Slatebestos as manufactured by Beckley-Cardy Company, Chicago, Illinois, or its equivalent, meeting fully this manufacturer's standard of quality as described in detail in their catalog.

All blackboards shall have surfaces perfectly true and smooth, free from defects, depressions or projecting particles.

CEMENT

Cement for spot cement shall be Slatebestos Blackboard Cement.

METAL BLACKBOARD JOINTS

All joints shall be made with Simplex Metal Joints. The moulding shall be the full width on the blackboard, extending back of the tack mouldings, which shall be neatly notched out over it at top and bottom. The moulding shall be shoved tight against the first board, set and plumbed; shove the next section of board into the groove of the moulding as far as possible and level and plumb the board. Mouldings with surface imperfections, or which are warped out of line, shall not be used.

BULLETIN BOARDS

The blackboard contractor shall furnish and install (Simplex or Duplex) Bulletin Board as manufactured by Beckley-Cardy Company, Chicago, Illinois, or its equivalent, meeting this manufacturer's standard of quality as described in their catalog.

DISPLAY RAILS

The blackboard contractor shall furnish and install Peerless Map and Bulletin Rail with cork insert and spring clip hooks, as manufactured by Beckley-Cardy Company, Chicago, Illinois, or its equivalent, meeting fully this manufacturer's standard of quality as described in detail in their catalog.

SETTING

The setting, leveling and cutting of blackboard shall be in accordance with the manufacturer's recommendations and his standard installation instructions, furnished with each shipment.

Blackboards, bulletin boards and display rail shall not be set until the plaster is completely dry and the final coat of finish has been applied and has dried on the trim (except loose tack mould).

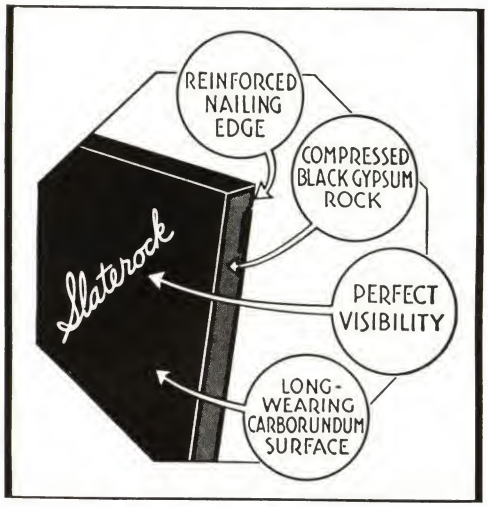
All blackboards and bulletin boards shall be set so that all edges shall be adequately covered by the loose tack mould. The surfaces shall be plumb and in a true plane. Clearance of ⅛ in. at the top and ¼ in. at bottom and ends shall be allowed.

All bulletin boards are to be installed in accordance with the manufacturer's instructions. Where ¼ in. cork without wood-ply backing is specified, this material shall be securely cemented to the wall. All joints shall be made tight and plumb and adjoining surfaces in a true plane.

All Map and Display Rails shall be installed, where indicated in plans, by screws or bolts in accordance with the manufacturer's instructions. All joints shall be made true and tight so that no interference will be encountered when sliding spring clip hooks from one section of the rail to another.

BLACKBOARDS

BULLETIN BOARDS AND ACCESSORIES



SLATEROCK Blackboard is a standardized high-grade product, proved thoroughly satisfactory in actual service over a period of a great many years. It is giving absolute satisfaction under almost every condition to which a blackboard may be subjected. Every requirement of a perfect blackboard is embodied in new, improved SLATEROCK—**Long Life, Clear Visibility, Reliability, Perfect Writing Surface and Adaptability.** Schoolrooms equipped with new, improved SLATEROCK afford every possible blackboard advantage to both teachers and pupils. A permanent blackboard made of gypsum rock refined and toughened, and pressed into large panels, surfaced with mineral color pigments and carborundum properly blended to produce its permanent uniform color and finish. SLATEROCK has an exceptionally good writing surface.

SIZES—¼ in. uniform thickness; 3, 3½, and 4 ft. widths; 5, 6, 7, and 8 ft. lengths; weight 2 lbs. to the square foot.

SLATOPLATE
The Perfect Low Priced
BLACKBOARD



EASY WRITING · SHARP CONTRAST
EASY ERASING · FREE FROM DUST
NON-REFLECTING

WOOD FIBRE BOARD
A DEPENDABLE BLACKBOARD MATERIAL

Forty years of use in schools is conclusive proof of the serviceability of wood fiber manufactured blackboard. During that time wood fiber blackboards have been used successfully in every type of building. There is hardly a school system today that does not use some wood fiber blackboard.

SLATOPLATE is a high-grade wood fiber blackboard. From the foundation to the finishing operation, the best of materials and skill have been built into it. From the standpoint of writing and erasing qualities there is none better. The surface is close grained, elastic, and yet very durable. Slatoplate is made of high grade wood fiber compressed into 5-ply ¼ in. woodlike panels, surfaced with carborundum surfacer carefully applied and finished. Possesses exceptional writing and erasing qualities.

SIZES—¼ in. uniform thickness; widths, 3, 3½ and 4 ft.; lengths, 6 to 12 ft. inclusive; weight 1 lb. a square foot.



No. 12850
SLIDING BLACKBOARD

Blackboard surfaces can be genuine Slatebestos, Slaterock or Slatoplate, the finest chalk writing surfaces obtainable, frame and stand substantially constructed of oak or birch as ordered, finished standard school brown, boards are evenly counterbalanced by sash weights in both uprights, boards move up and down easily. Both boards may be covered with problems written at convenient level. Eraser and chalk trough provided. This board may be had in any special size required.

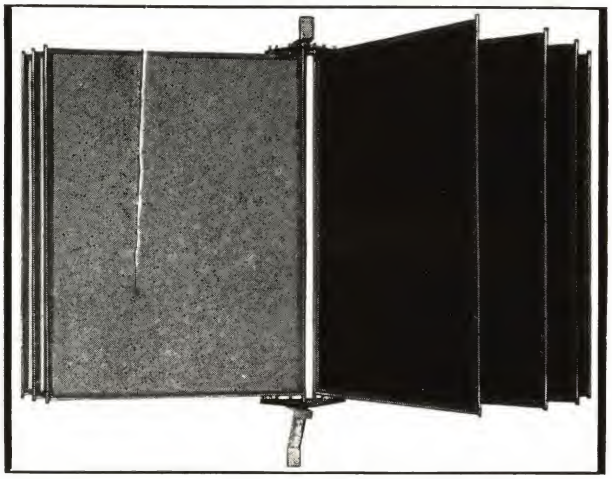
	Depth	Length	Height
Overall Size	8 in.	8 ft.	9 ft. 10 in.
2 Blackboards		7 ft.	3 ft.

PEERLESS
SWINGING BLACKBOARD AND BULLETIN BOARD

The swinging panels enable the teacher in spare time to prepare in advance any questions, problems, examples, etc., and keep them from being seen until the desired time. An abundance of reference material may be kept instantly available in a neat and orderly arrangement, but out of sight when not needed.

There are seven wings or leaves (14 surfaces) each 36 in. wide by 42 in. high. When half the wings are open to each side a maximum space of 76 in. is required, and a minimum space of 38 in. is required when all wings are turned to one side. The height required is 44 in. exclusive of the wall brackets. When folded to one side the maximum distance from the wall is 9 in.

Fillers for wings are either SLATOPLATE Blackboard, cork veneered mounting board, or a combination of both as may be desired.

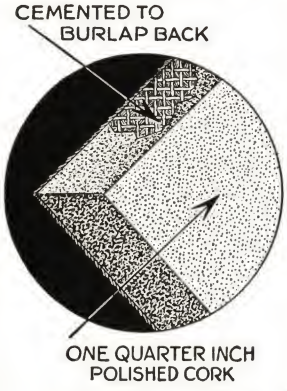


No. 70—Peerless Swinging blackboard with 14 blackboard surfaces, weight 150 lbs.

No. 71—Peerless swinging blackboard and bulletin board with 7 blackboard surfaces and 7 bulletin board surfaces, weight 150 lbs.

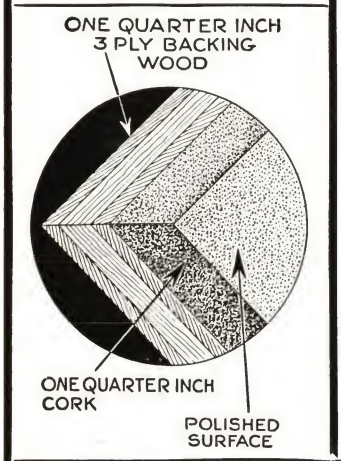
BULLETIN BOARDS AND DISPLAY RAIL

FOR SPECIFICATIONS REFER TO PAGE TWELVE



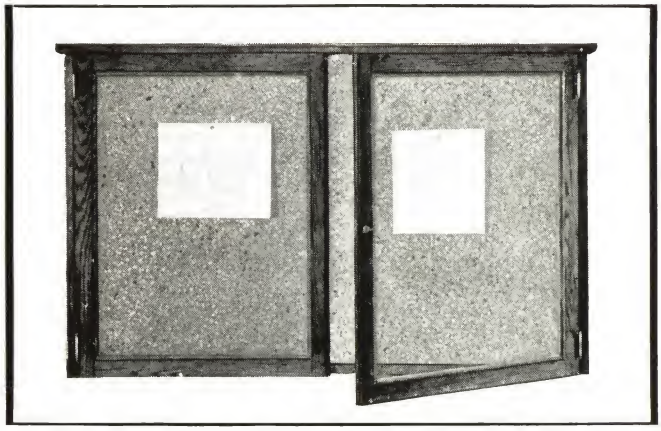
SIMPLEX
CORK BULLETIN BOARD

Made of the best quality compressed cork one-quarter in. thick, polished surface, cemeted to heavy burlap backing. SIMPLEX Bulletin Board is especially adapted for installation on smoothly and evenly finished walls. It may be had in any width up to 72 in. and any length up to 20 ft., without joints. Fractions of an inch in width or length are charged for on the basis of a full inch. The colors are tan and dark green. The shipping weight is 1 lb. a sq. ft.



DUPLEX
CORK BULLETIN BOARD

Made of the best quality compressed cork one-quarter in. thick, cemented to one-quarter in three-ply wood panel back. DUPLEX Bulletin Board may be attached directly to the studding or grounds. The walls back of it need not be smoothly finished. The overall thickness is ½ in. DUPLEX Bulletin Board may be had in any size up to 48 in. in width and 8 ft. in length. Fractions of an inch are charged for on the basis of a full inch. The colors are tan and dark green. The shipping weight is 2 lbs. a sq. ft.

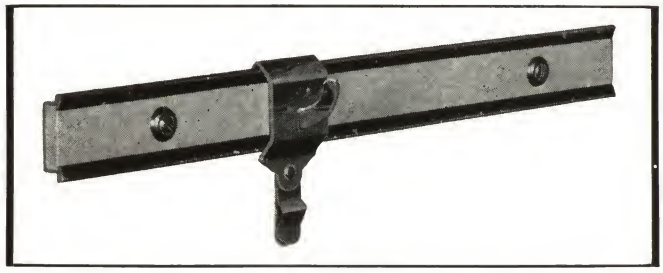


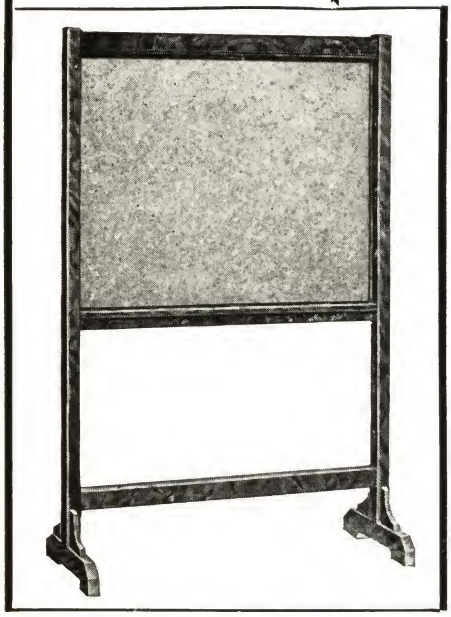
CABINET BULLETIN BOARD

Furnished in two sizes, with double doors as illustrated and also in smaller size with single doors. Made of plain oak finished school brown. Posting surface is ¼ in. SIMPLEX Cork mounted on ¼ in. 3-ply wood. Doors fitted with locks and double strength clear glass.

No. 200—Two doors, as illustrated, 48 in. wide, 30 in. high.

No. 100—Single door size 24 in. wide, 30 in. high.

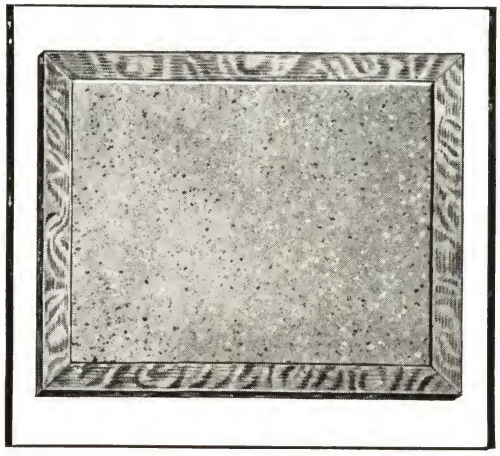




PEERLESS
HIGH STAND BULLETIN BOARD

At Left

Frame and stand built of selected oak, finished school brown. Double faced bulletin board. Posting surface 34 inches high by 44 inches wide on each face. Bulletin board ¼ inch polished cork on each face mounted on 3 ply wood core. Size over all 72 inches high, 48 inches wide.



PEERLESS DISPLAY RAIL

Peerless Display Rail provides for neat display of maps, bulletins, pictures, specimens of pupils' work, etc., without defacing walls, blackboards, or blackboard mouldings. Displays may be suspended on Peerless Hooks, spring clips, or fastened by thumb tacks. Hooks support map cases and the heavier objects and may be attached anywhere along the rail without moving other displays or exhibits.

The Rail is formed out of 16-gauge rolled steel. The track is double thickness; thus more than ample strength and stability are provided. It may be attached to wood or steel blackboard trim, or directly to the plastered wall. Furnished in any even foot length to 12 feet for easy installation. The finish is statuary bronze enamel. The cork insert lining is ¾ in. wide, ¼ in. thick, and runs the full length of the rail.

FRAMED BULLETIN BOARD *At Right*

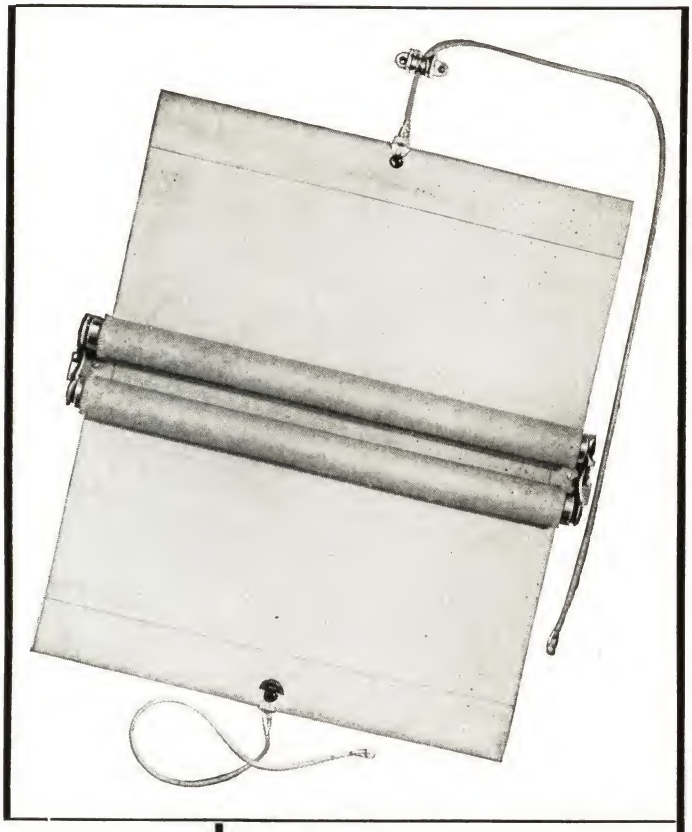
Posting surface made of cork mounted on substantial built-up backing. Frame made of selected white oak 1 in. thick and 2 in. wide, finished school brown. Five stock sizes as below. Other sizes, special order.

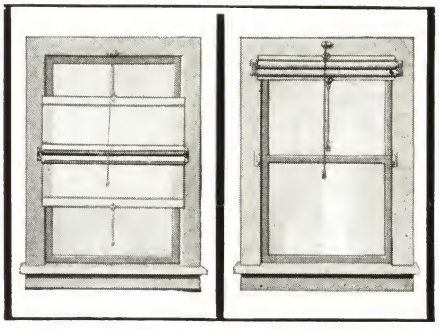
No.	Size Over All
0	12 x 18 inches
1	18 x 24 inches
2	24 x 36 inches
4	36 x 48 inches
6	36 x 60 inches

WINDOW SHADES

SIGHTSAVER DOUBLE ROLLER SHADE FOR PERFECT LIGHT CONTROL

Windows equipped with SIGHTSAVER double roller demountable fixtures and SUPERTEX fabrics are fitted for proper light control and ventilation. Actual use in hundreds of buildings has demonstrated their effectiveness. They save the school children's eyes and admit fresh air without draft. Prevention of eyestrain is one of the most important reasons for the demand for SIGHTSAVER fixtures. They are instantly adjustable to shade any part of the window, whether they are steel or wood sash, casement, or of the tilting type. The shades are held firmly in position so that they do not flap or become torn. SUPERTEX shade fabric possesses exceptional translucency and light diffusing qualities. It effectively kills sun glare by allowing only a soft, mellow light to filter through into the classroom. The whitest, long staple cotton thread is smoothly woven into pliable cloth of uniform texture. The finish is sunfast and weatherproof. SUPERTEX will not stretch, sag or shrink. SIGHTSAVER fixtures are designed for hard constant use such as shades receive in schools, hospitals, and other public buildings. No detail in construction, which would increase their utility and durability, has been overlooked. The ease of adjustment, attractiveness, durability, and positive operation, make SIGHTSAVER fixtures and SUPERTEX fabrics beyond comparison. Architects' specifications furnished on request.





At Left:
SHADE IN POSITION

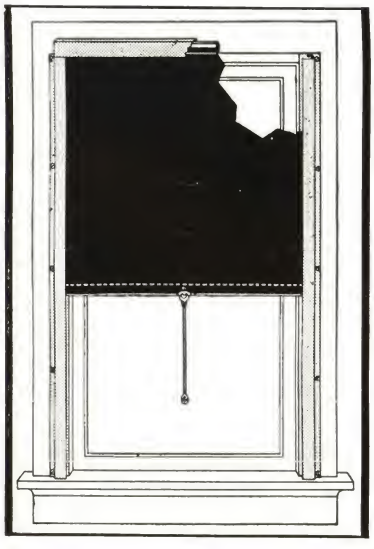
Light coming through the upper third of the window—is the first need in preventing eyestrain. From this source, light rays enter the room at the greatest possible angle preventing harmful glare on books, blackboards and desks.

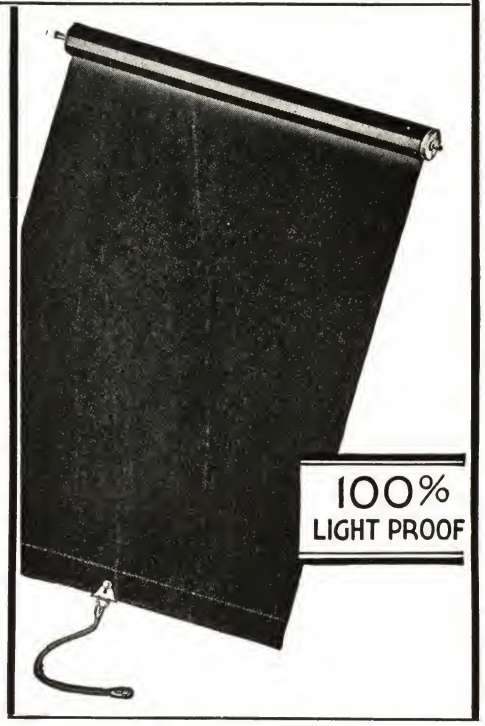
At Right: **SHADE RAISED FOR CLEANING**

This novel feature allows the shade to be removed from its permanent position and raised to the top of the window out of the way for window washing. Simply unhook the fixture at both ends, pull the upper cord, and the shade is out of the way.

SUPERTEX DARKENING SHADE *For Absolute Darkness In Any Room During the Day . . .*

Visual education has greatly increased the demand for an inexpensive and yet effective method of darkening classrooms. SUPERTEX Lightproof Kanvas is specially made for this purpose by forcing black, opaque, waterproof compound into the fabric, thus producing a cloth which is nearly one hundred per cent lightproof. It will not check, crack, or peel with age or exposure to sunlight or moisture and is washable with soap and water. It is made with the black finish on both sides, or black on one side and tan on the other. For best results, black on both sides is recommended.





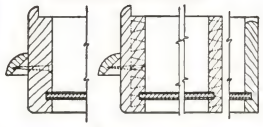
PEERLESS LIGHT ARRESTER

Where absolute darkness is desired the Peerless Light Arrester is an indispensable adjunct to lightproof shades. It positively prevents light from coming in at the top and sides of the shades. The equipment consists of metal channels into which the sides of the shades extend about two inches, with proper steel cross member fastened behind the roller at the top and fitted into the side channels, thus making a complete housing in which the shade operates.

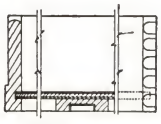
LABORATORY FURNITURE

CONSTRUCTION FEATURES AND ACCESSORIES

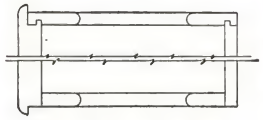
DRAWER CONSTRUCTION



Drawer Construction Showing Dovetailed Front



Drawer Construction of Glued and Dovetailed Types



Top View of Drawer Upper Half Shows Mitre Construction — Lower Half Shows Dovetail Construction

CONSTRUCTION—Beckley-Cardy Laboratory Furniture is constructed in accordance with the highest cabinet-work standards. There are illustrated here many of the construction features which are our standard shop practices. The Company is prepared to follow accurately any special details of construction specified provided in their experience these do not conflict with good construction standards.

WOODWORK—Furniture is constructed of either oak or birch as specified, carefully selected for the particular purpose intended. Where exposed, the wood is entirely free of imperfections and carefully matched to secure uniform grain and color. Oak may be small figure quartered or plain sawed. Birch, where exposed, is of selected Northern Birch.

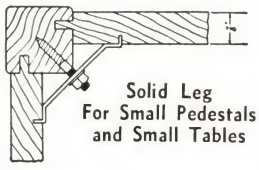
The grading of all lumber is in strict accordance with the rules of the National Hardwood Lumber Association and the National Veneer and Panel Manufacturers' Association.

All woods are thoroughly air-dried for at least 12 months and then kiln-dried to a moisture content of 4½% in modern vapor system curing dry kilns and tempered back to a moisture content of 6% to insure against shrinkage, warping or splitting.

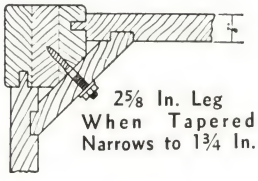
Unless otherwise specified, all wood work is finished in standard school brown.

TOPS—Solid wood strip tops are of birch finished in acid-proof black or natural as specified. Where required, tops and sinks are of first quality alberene. For domestic science tops, the exposed top surfaces can be furnished in Formica, Linoleum or Stainless Steel as selected.

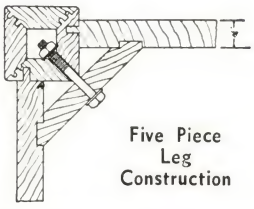
LEG CONSTRUCTION



Solid Leg For Small Pedestals and Small Tables

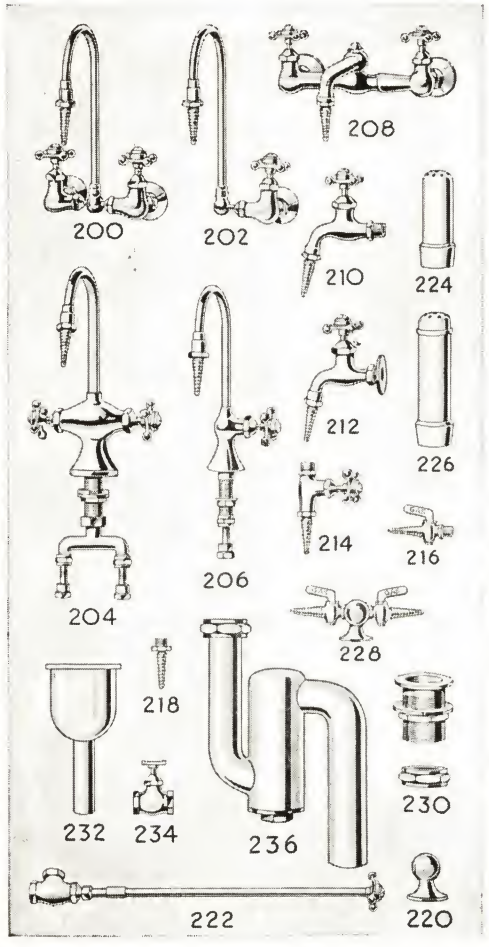


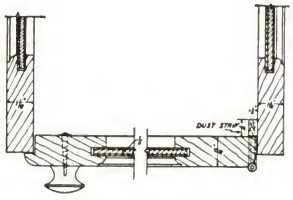
2⅝ In. Leg When Tapered Narrows to 1¾ In.



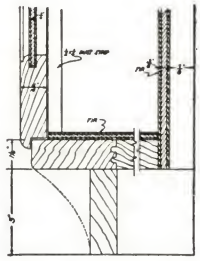
Five Piece Leg Construction

PLUMBING EQUIPMENT

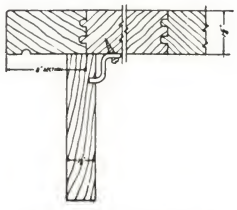




Section Through Door

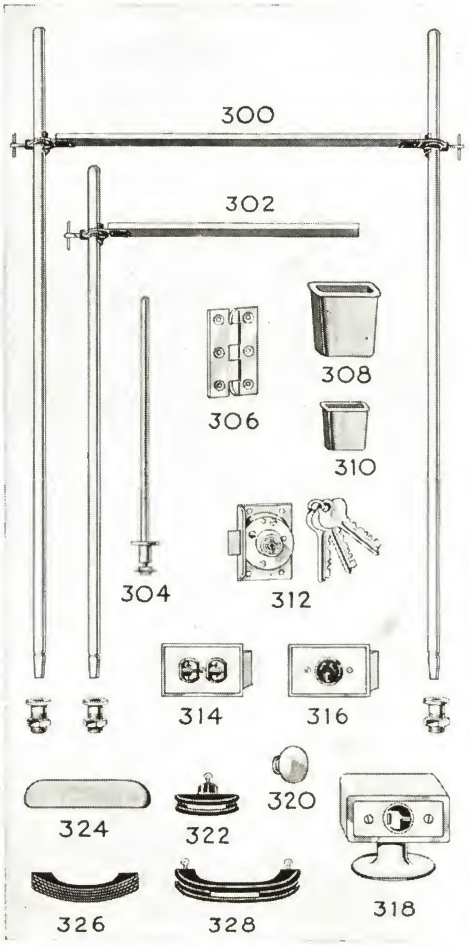


Toe Space, Door and Back Construction



Detail of Table Top

ACCESSORIES EQUIPMENT



INSTRUCTORS' DESKS

It is impossible in the limited space provided to show the many, many special instructors' desks obtainable by slightly changing the various designs. We are, therefore, limiting our suggestions to units which are meeting average conditions in High Schools and Junior Colleges.

The requirements of each individual teacher may be met by rearrangement of cupboard and drawer location, and changing sinks and other equipment. The teacher's ideas can be incorporated in any suggested design listed, to provide equipment to meet the exact requirements. For this purpose, we maintain a staff of engineers whose experience is available to all those having problems.

We will gladly quote on instructors' desks of any type, or on any special designs made of wood or metal or a combination of both. Special designs frequently cost no more than standard units, but their utility and value to the individual instructor are inestimable.



No. 10000 INSTRUCTOR'S DESK

No. 10000 instructor's desk is probably the most popular instructor's desk because it can be adapted for physics, chemistry, biology and general science. It is adequate for most high school laboratory purposes. It is equipped with gas, water and electrical attachments. Drawer arrangement may be changed if so desired. Sink can be placed on either end of table.

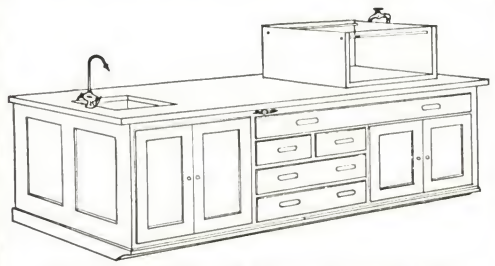
Size of top: Width 30 in., length 60 in., height 36 in.

EQUIPMENT—One double pantry cock, one double gas cock, one set of sink fittings with proper shutoff for each line, one pair of removable upright rods and cross bar, one double electrical receptacle, one master keyed lock.

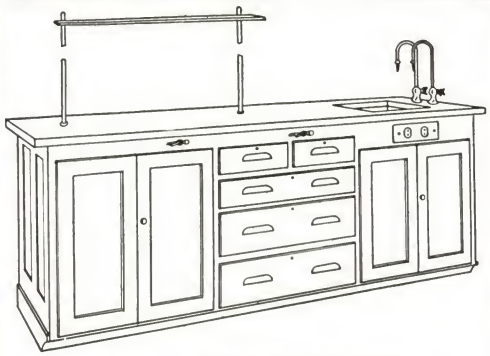
MATERIAL—Oak or Birch wood, 1⅝ in. thick birch top, built of narrow strips, tongue and groove joints, also furnished with alberene stone or chemstone top as ordered.

CONSTRUCTION—Extra heavy reinforced frame, high-grade cabinet construction, toe space provided.

FINISH—Body, standard school brown; top, black acid-proof finish.



No. 10105 BIOLOGY INSTRUCTOR'S DESK
Material and construction same as No. 10000 illustrated above.
SIZE OF TOP:
WIDTH 36 IN., LENGTH 8 FT., HEIGHT 36 IN.



No. 10100 INSTRUCTOR'S DESK
Material and construction same as No. 10000 illustrated above.
SIZE OF TOP:
WIDTH 30 IN., LENGTH 8 FT., HEIGHT 36 IN.



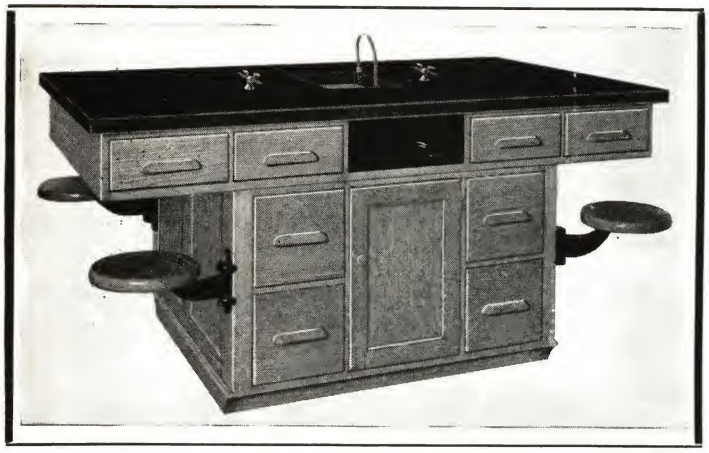
No. 10010 INSTRUCTOR'S DESK
Material and construction same as No. 10000 illustrated above.
SIZE OF TOP:
WIDTH 30 IN., LENGTH 60 IN., HEIGHT 36 IN.



No. 10005 INSTRUCTOR'S DESK
Material and construction same as No. 10000 illustrated above.
SIZE OF TOP:
WIDTH 36 IN., LENGTH 60 IN. HEIGHT 36 IN.

PHYSICS and GENERAL SCIENCE TABLES

TYPICAL ILLUSTRATIONS—DRAWER ARRANGEMENT MAY BE CHANGED TO MEET INDIVIDUAL REQUIREMENTS



No. 10310 STUDENTS' TABLE

This very popular table is designed for chemistry and physics made to accommodate sixteen students working in sections of four students each. Large individual drawers are provided for student use. Cupboards for general apparatus are large and roomy. Table equipped with swing stools as illustrated, or without stools if so desired. Toe space at floor line as shown in illustration. Drawers fitted with master keyed locks.

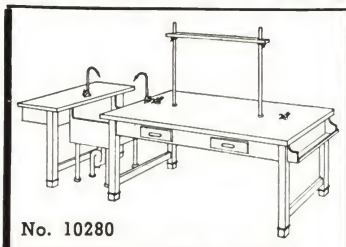
Size of top: Width 48 in., length 6 ft. 3 in., height 36 in.

EQUIPMENT—One disappearing pantry cock, one set pipe fittings and water shutoff, two double gas cocks, one set pipe fittings and gas shutoff, one alberene stone sink with trap and plumbing to floor line.

MATERIAL—Oak or Birch, wood top 1⅝ in. thick, built up of narrow strips, tongue and groove joints. Also furnished with alberene stone top or chemstone top as ordered.

CONSTRUCTION—Extra heavy reinforced frame, high-grade cabinet construction, may be had with or without toe space at floor line.

FINISH—Body, standard school brown; top, black acid-proof finish.



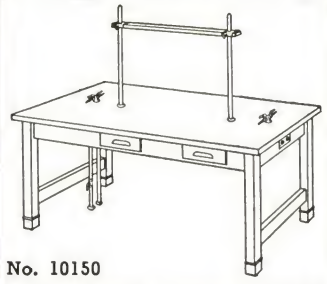
No. 10280
STUDENTS' SCIENCE TABLE
By placing this table end to end with sink between, accommodations are provided for eight students at one time. Table can be used for various sciences, physics, biology, chemistry or general science. Workmanship and material same as No. 10310.
Overall length of two tables placed end to end, including sink:
WIDTH 42 IN., LENGTH 13 FT. 4 IN. HEIGHT 36 IN.



No. 10210
COMBINATION SCIENCE TABLE
Workmanship and material same as No. 10310.
SIZE OF TOP: WIDTH 42 IN., LENGTH 6 FT., HEIGHT 36 IN.

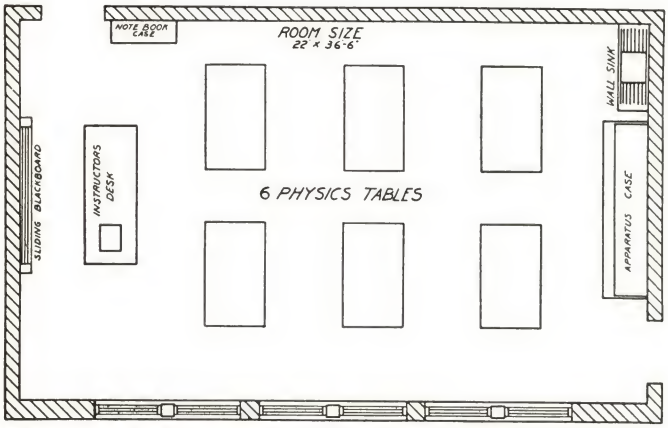


No. 10270
STUDENTS' SCIENCE TABLE
Workmanship and material same as No. 10310.
SIZE OF TOP: WIDTH 42 IN., LENGTH 6 FT. 3 IN., HEIGHT 33 IN.

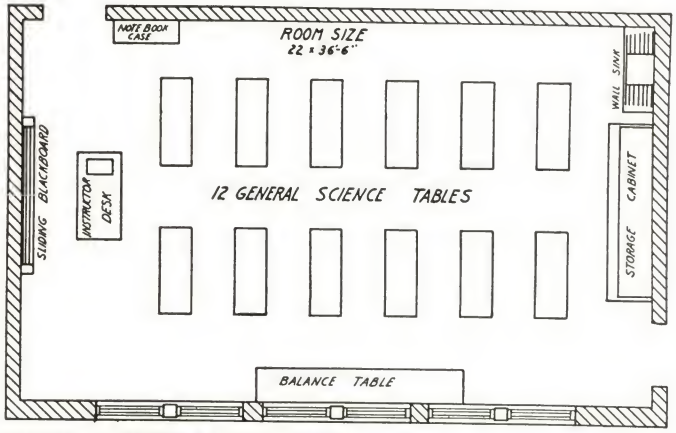


No. 10150
FOUR-STUDENT PHYSICS TABLE
Workmanship and material same as No. 10310.
SIZE OF TOP: WIDTH 42 IN., LENGTH 6 FT., HEIGHT 30 IN.

TYPICAL ROOM PLAN SUGGESTIONS



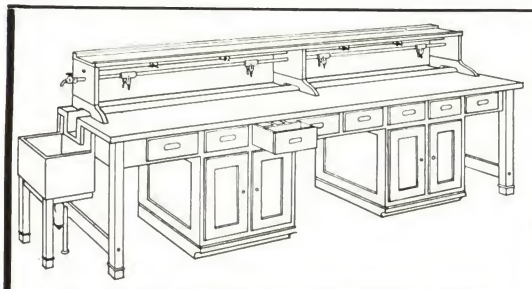
THE PHYSICS LABORATORY—The room plan shown above provides excellent accommodations for 24 students working at one time. While very complete, this layout is also economical. Arrangement shows placement of six and four student tables, instructor's desk, apparatus case, double drainboard sink, notebook case and sliding blackboard. Illustrated above are several popular physics tables designed to meet group study conditions which may be arranged to meet every high school and college requirement. Equipment may be changed, added or removed and table sizes altered, locks may be added where not shown or left off as desired, book compartment drawers and cupboards rearranged. Our engineering staff will gladly redesign any equipment listed or design new equipment to meet all conditions, and to solve any difficult problem that may be presented.



GENERAL SCIENCE LABORATORY—In this general science laboratory plan the two student tables facing in same direction are featured. Working space for twenty-four students, working at one time, is provided. While this plan suggests an ideal arrangement, it must, of course, be altered to meet local conditions. There are conveniently located the following: large storage case, double drainboard sink, wall table, notebook case, sliding blackboard and large instructor's desk. Space permitting, this plan can hardly be improved upon. However, our engineers will be very glad to help you solve your problems if they are given the opportunity. They will suggest alterations in design which will adapt each piece of equipment to meet your particular requirement.

CHEMISTRY LABORATORY

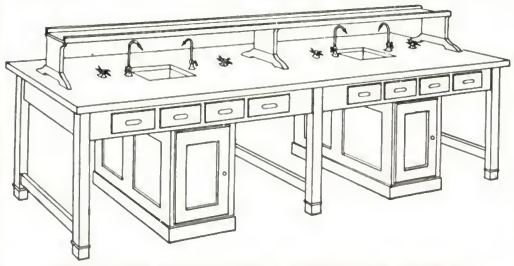
TYPICAL ILLUSTRATIONS—DRAWER AND CUPBOARD ARRANGEMENTS ALSO EQUIPMENT MAY BE CHANGED TO MEET INDIVIDUAL REQUIREMENTS



No. 10420 STUDENTS' CHEMISTRY TABLE

This wall table offers the advantage of utilizing all available space because it may be used at the end or the laboratory in addition to the regular center type tables. Accommodates eight students working in sections of four each. Workmanship and material same as No. 10410.

SIZE OF TOP:
WIDTH 27 IN., LENGTH 12 FT., HEIGHT 36 IN.

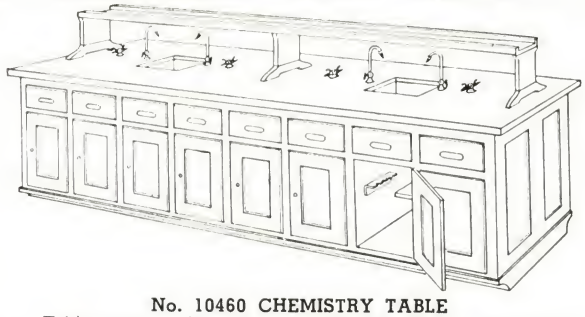


No. 10440 STUDENTS' CHEMISTRY TABLE

Table arranged for sixteen students working in two sections of eight.

Workmanship and material same as No. 10410.

SIZE OF TOP:
WIDTH 48 IN., LENGTH 12 FT., HEIGHT 36 IN.



No. 10460 CHEMISTRY TABLE

Table arranged for sixteen students working in two sections of eight. Same general construction as No. 10410. One large drawer and cupboard for each student.

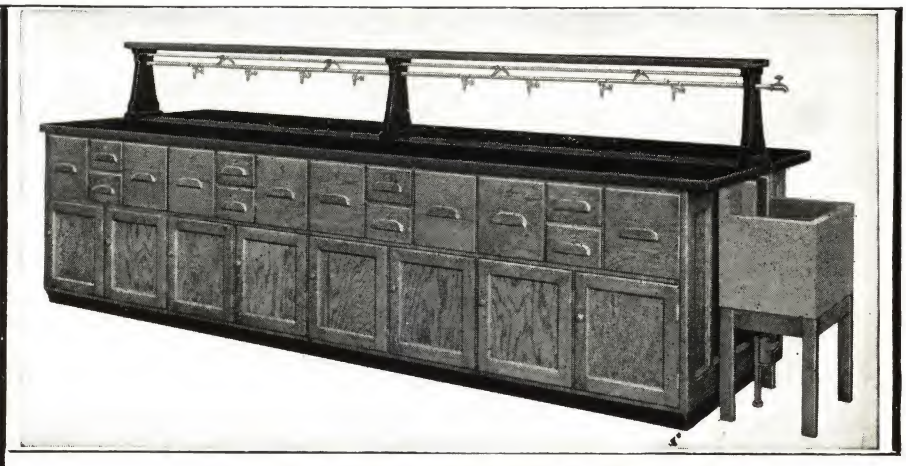
SIZE OF TOP:
WIDTH 48 IN., LENGTH 144 IN., HEIGHT 36 IN.



No. 10550 FUME HOOD

This hood is one of the most effective for high school use, substantially constructed, all joints absolutely tight, built of either oak or birch as ordered. Exterior finished standard school brown, silver bronze interior. Top can be had made of either birch acid-resisting finish or alberene stone as ordered, sliding door hung by monel metal sash cord. Counterbalanced door and ends fitted with D.S.A. glass. Entire back, interior of upper section and both ends lined 12 inches with Transite. Equipped with one double gas cock with piping to floor, gas shutoff at floor line, remote control shutoff valve.

OVERALL SIZE:
WIDTH 48 IN., HEIGHT 90 IN., DEPTH 31 IN.



No. 10410 STUDENTS' CHEMISTRY TABLE

One of the most popular tables for chemistry departments in high schools. Table has continuous plumbing from one set of floor outlets, with center trough full length of table so that student always has easy access thereto. Table has general cupboards for storage apparatus and private drawer for each student. It accommodates sixteen students working in two sections of eight students each. Drawers and cupboards fitted with master keyed locks. Can also be had without locks.

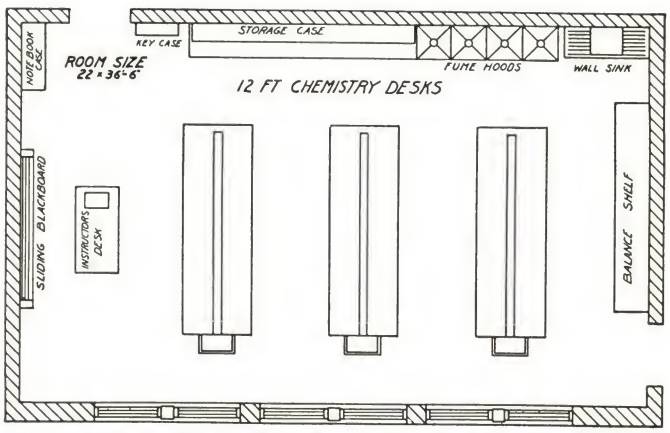
Size of top: Width 48 in., length 12 ft., height 36 in.

EQUIPMENT—Four double gas cocks, one set of gas pipe to floor line with shutoff, four water cocks and plumbing with water shutoff at floor line, one alberene stone sink with trap and plumbing to floor line.

MATERIAL—Oak or Birch, wood top 1⅝ in. thick, built up of narrow strips, tongue and groove joints. Also furnished with alberene stone top or chemstone top as ordered.

CONSTRUCTION—Extra heavy reinforced frame, high-grade cabinet construction, toe space provided in front of cabinets.

FINISH—Body, standard school brown; top, black acid-proof finish.

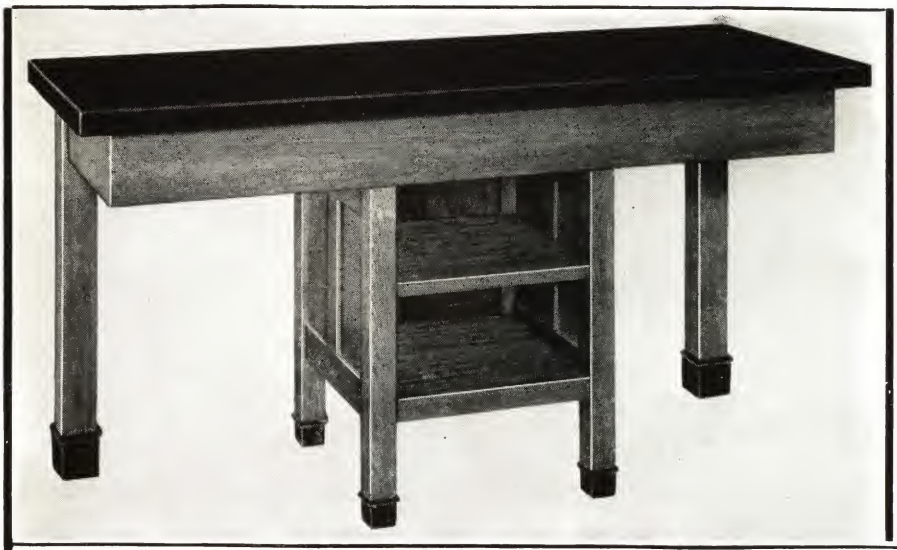


TYPICAL ROOM PLAN SUGGESTIONS

THE CHEMISTRY LABORATORY

In the plan above the twelve-foot type tables are featured, each table accommodating eight students working at one time. These tables may be displaced by six four-student combination science tables thus providing working space for twenty-four students in smaller groups all working at same time. This plan may be further altered to meet any particular requirement. Equipment problems submitted to our engineers will receive prompt and careful attention.

BIOLOGY EQUIPMENT

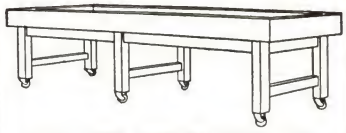


GENERAL—Equipment illustrated can be had in either oak or birch, extra heavy reinforced frames, high-grade cabinet construction, finished in standard school brown unless otherwise specified. Table top has carbonized black acid proof finish, laboratory sinks are alberene stone. Every detail in construction, finish and equipment has been carefully checked to insure durability and satisfaction.

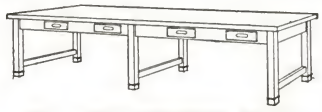
NO. 10650 STUDENTS' TABLE—This popular table is adaptable to any science by adding necessary equipment, and for classroom or recitation use. Center pedestal has two large book compartments. Built of either oak with birch top or birch throughout. Top finished black acid proof, body standard school brown. Top 1⅝ inches thick, built up of narrow strips, tongue and groove joints. High-grade cabinet construction, legs fitted with cast metal shoes. Size of top: Width, 24 in.; length, 60 in.; height, 30 in.



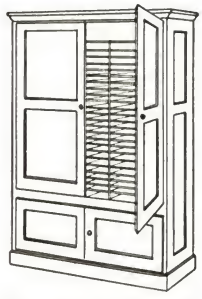
NO. 10883 DISPLAY CASE
Overall size: Width 5 ft., height 6 ft., depth 24 in.



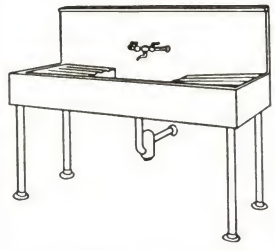
NO. 11000 GERMINATING BED
Adapted for use in both biology and agricultural departments.
Size of bed: Width 24 in., length 8 ft., height 24 in.



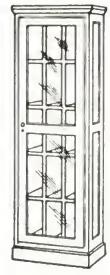
NO. 10710 STUDENTS' TABLE
Size of top: Width 42 in., length 11 ft. 5 in., height 30 in.



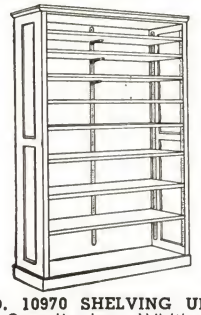
NO. 10900 NOTEBOOK CASE
Overall size: Width 16½ in., length 36 in., height 78 in.



NO. 11050 LABORATORY WALL SINK
Overall size: Width 21 in., length 60 in., height 48 in.



NO. 10940 MICROSCOPE CASE
Overall size: Width 30 in., height 84 in., depth 24 in.



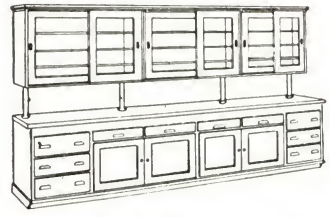
NO. 10970 SHELVING UNIT
Overall size: Width 60 in., height 78 in., depth 12 in.



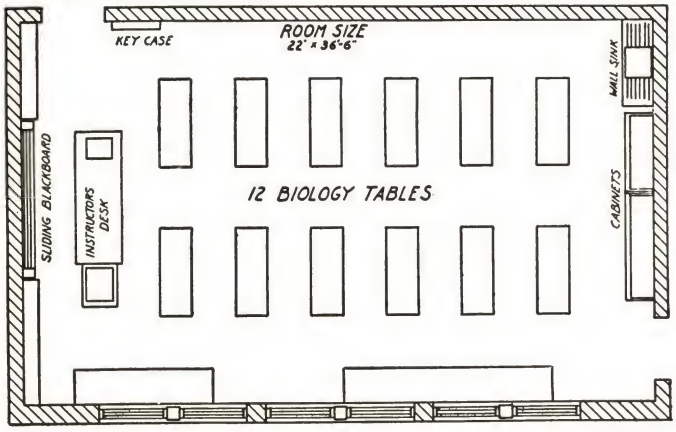
NO. 10750 STORAGE CASE
Overall size: Length 8 ft., depth 24 in., height 80 in.



NO. 11100 AQUARIUM
Size of table: Width 30 in., length 36 in., height 54 in.



NO. 10950 WALL TABLE AND HANGING WALL CASE
Overall size: Width 24 in., length 15 ft., height 78 in.



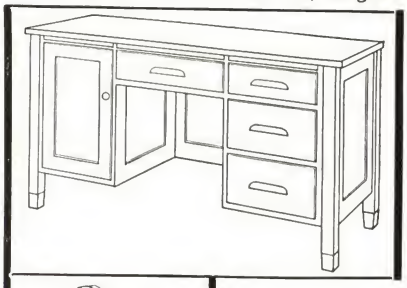
THE BIOLOGY LABORATORY—This plan shows twelve two-student tables accommodating twenty-four students working at one time, all facing in the same direction. In addition to student tables, the room accommodates without crowding a large storage case, large combination storage and display case, fifteen-inch shelf under window, germinating bed, notebook case, two wall cupboards, sliding blackboard, large instructor's desk, movable aquarium and double drainboard stone sink, which makes a complete well balanced room. This layout has been adopted exactly as shown in a great many instances and has always proved satisfactory. The arrangement, however, can easily be changed or equipment altered to meet individual requirements. Our engineers will appreciate an opportunity to discuss conditions and assist in solving customer's problems.

DOMESTIC SCIENCE

No. 11159 DOMESTIC SCIENCE TABLE *(At Right)*

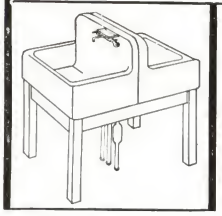
This table is arranged for four students working at the same time, and without doubt, our most popular table. Each student has ample working space. Table is equipped with two drawers and a bread and meat board for each student. Illustrated without swing seats; however, table may be had with seats if desired. Made of oak or birch as ordered, body finish standard school brown, or enameled in any desired shade as ordered, top natural birch. Tables may be had with tops having working surfaces made of inlaid linoleum, sheet rubber, stainless steel, monel metal, formica, or porcelain enameled steel.

Size of top: Width 45 in., length 60 in., height 31 in.



No. 11300 INSTRUCTOR'S DESK *(At Left)*

Provides ample space for materials, records, etc. Substantially constructed of either oak or maple as ordered, body finished standard school brown, top birch natural finish. Table may be had without cupboard in right pedestal or without drawers in left pedestal or without both. Size of top: Width 24 in., length 60 in., height 32 in.



No. 11370 DOUBLE SINK *(At Left)*

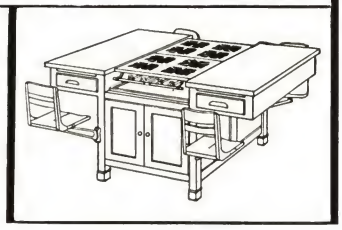
A free standing sink supported by substantial frame made of either oak or birch finished standard school brown. Consists of two high back sinks fitted with high-grade plumbing. Can be furnished in either porcelain or cast iron enameled. Allover sizes of 2 sinks as shown:

No. 11370. Two cast iron sinks 30 in. long, 40 in. wide.
No. 11370A. Two cast iron sinks 24 in. long, 40 in. wide.
No. 11370B. Two porcelain sinks 30 in. long, 40 in. wide.
No. 11370C. Two porcelain sinks 24 in. long, 40 in. wide.

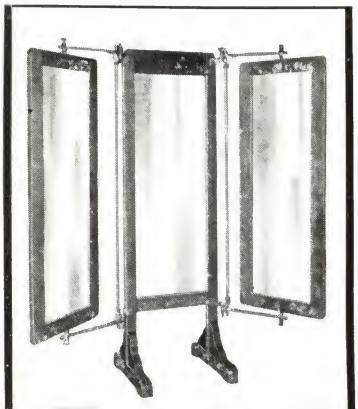


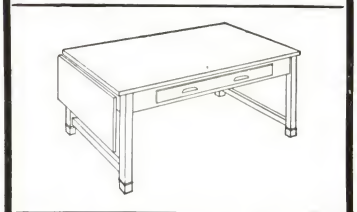
No. 11250 DOMESTIC SCIENCE TABLE *(At Right)*

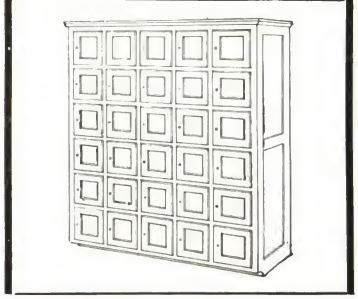
Accommodates four students working at a time. Stoves set flush with top, meat board provided for each student. Made of oak or birch as ordered, high-grade reinforced cabinet construction, finished standard school brown. Tops are birch finished natural. May also be had in two-student size. Overall size: four student—width 44 in., length 66 in., height 32 in.



SEWING







No. 11550. STUDENTS' SEWING TABLE *(At Right)*—Built of either oak or birch as ordered. Finished in standard school brown. Extra strong frame. Eight roomy drawers are provided, and are equipped with master keyed locks if desired. Legs are fitted with cast metal shoes. Size of top: Width 42 in., length 6 ft., height 30 in.

No. 11750. TRIPLICATE MIRROR—Built of selected oak or birch as ordered. Mirrors are finished French plate heavily silvered. Equipped with revolving bronze brackets.

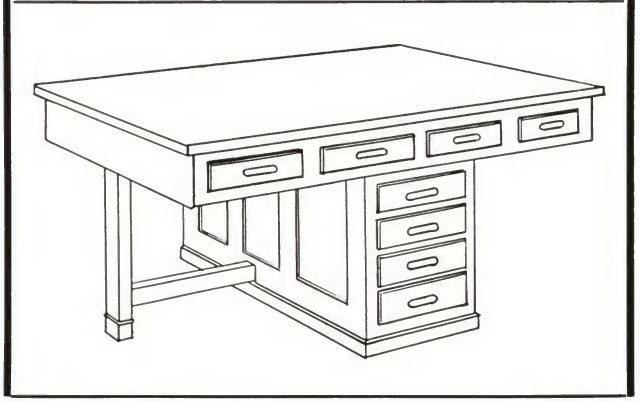
Overall size 74x74 in. Size center mirror 18x52 in. Two side mirrors 16x52 in.

No. 11700. CUTTING TABLE *(At Left)*—This extension leaf table is a necessity in the sewing room, drop leaf is securely hinged to top and supported by two metal brackets. Table is substantially constructed of either oak with birch top, or birch throughout as ordered. Top finished natural, balance of table standard school brown.

Size of top without drop leaf: Width 42 in., length 72 in., height 30 in. Drop leaf 21 in. long.

No. 11860. STUDENTS' STORAGE CASE *(At Left)*—Provides storage space for 30 students. Each compartment is fitted with master keyed lock. Substantially constructed of either oak or birch as ordered, finished standard school brown. Overall size: Width 72 in., height 78 in., depth 24 in.

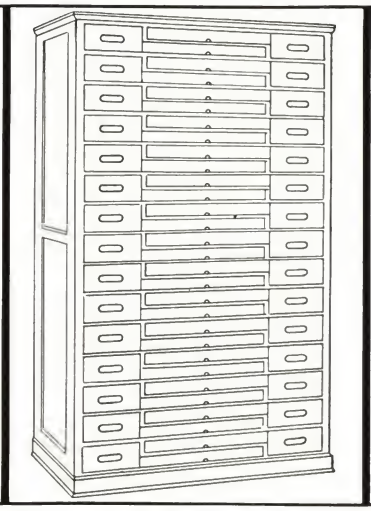


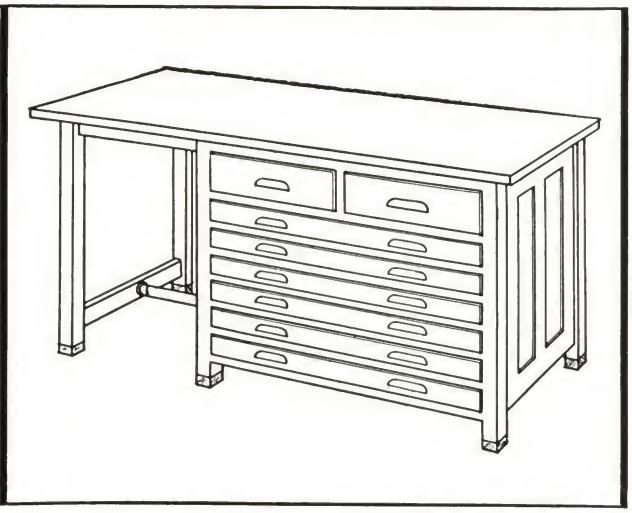


No. 11620 STUDENTS' TABLE—Four student sewing table, private drawers provided for each student. Built of selected oak or birch as ordered, top is birch, high-grade cabinet construction throughout. Body finished standard school brown, top finished natural. Size of top: Width 42 in., length 72 in., height 30 in.

MECHANICAL DRAWING ART and COMMERCIAL DEPARTMENT









No. 12130 STUDENT'S DRAWING TABLE

Six-student table, top is adjustable. Table has six private drawers equipped with master keyed locks, and one locker with six drawing board compartments. Table has metal shoes and iron foot rest. Made of oak or birch finished standard school brown.

Size of top: Width 36 in., height 40 in., depth 28 in.

No. 12200 ART TABLE

Above: Substantially built of either oak or birch as ordered, finished standard school brown, top of birch reinforced to prevent warping, has instrument drawer, legs fitted with brass ferrules. Size of top: Width 20 in., length 34 in., height 30 in.

No. 12170 DRAWING-BOARD AND INSTRUMENT CASE

Provides space for 30 sets of drawing instruments and 30 drawing boards. Compartments accommodate drawing boards 20 in. wide and 26 in. long. Each drawer is equipped with master keyed lock. Drawing board compartment is automatically locked when drawer is closed. Size of top: Width 48 in., height 80 in., depth 22 in.

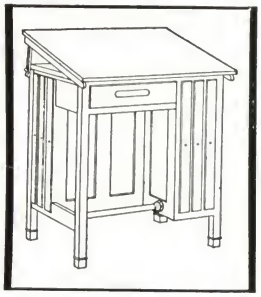
Material: Oak or Birch.
Finish: Standard School Brown.
Construction: High-grade cabinet construction.

No. 12150 DRAWING INSTRUCTOR'S DESK

The large top provides ample space for instructor's work and drawings. Top may be either stationary or adjustable. Drawers are exceptionally roomy, thus providing excellent filing space for finished work and materials.

Size of top: Width 34 in., length 72 in., height 34 in.

MATERIAL—Oak or birch.
FINISH—Standard school brown.
CONSTRUCTION—Extra heavy, reinforced frame, high-grade cabinet construction.



No. 12110 STUDENT'S DRAWING TABLE *(At Right)*

Six-student table, very convenient arrangement for storing drawing boards and instruments. Each compartmet is equipped with master keyed lock. Made of oak or birch finished standard school brown. Legs fitted with metal sockets, and iron foot rail.

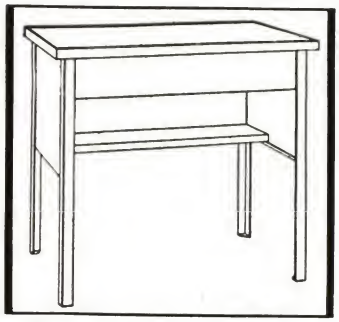
Size of top: Width 36 in., height 40 in., depth 28 in.



No. 12120 STUDENT'S DRAWING TABLE *(At Left)*

This table is substantially built, can be furnished in either oak or birch, finished standard school brown. Table has adjustable top and iron foot rail.

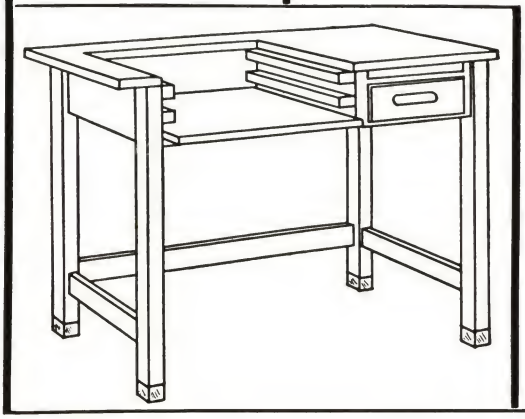
Size of top: Width 36 in., height 40 in., depth 28 in.



No. 12350 STUDENT'S DESK *(At Left)*

An outstanding desk for the Commercial Department in either high school or college. Built of heavy gauge steel, frame is reinforced, panels are cold rolled body stock, top 1¼ in. 5 ply either oak, birch or inlaid linoleum banded edge as ordered. Top finished standard school brown, metal parts brown. Roomy book shelf placed at knee height under top.

Size of top: Width 24 in., length 36 in, height 30 in.



No. 12400 TYPEWRITER DESK *(At Left)*

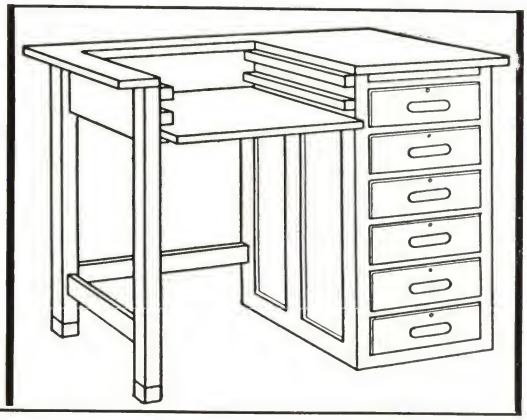
Substantially constructed of either oak or birch as may be desired, finished standard school brown. Typewriter bed has three adjustments which permit the typewriter to be raised or lowered three inches. In high position, top may be used for Commercial Class.

Size of top: Width 22 in., length 36 in., height 31 in.

No. 12455 SIX-STUDENT DESK

Arranged with private drawer space for six students with master keyed locks on each drawer. Typewriter may be raised or lowered three inches. Large tablet arm shelf above drawer section. Substantially built of either oak or birch. Finished standard school brown. Legs fitted with brass ferrules.

Size of top: Width 22 in., length 36 in., height 31 in. *(At Right)*

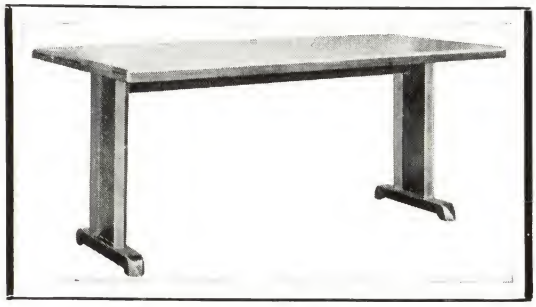


LIBRARY FURNITURE



NO. 12524 LIBRARY TABLE—Full quarter sawed oak finished standard school brown, substantially constructed, five ply top 1½ inches thick, extra heavy crossbanding, edges veneered, 2¾ inch legs fitted with brass ferrules. Table may also be had in birch and with linoleum top if desired.

Dimensions		Width	Length	Height	Weight
No. 12524	Size of Top	34″	60″	30½″	140 lbs.
No. 12524-A	Size of Top	36″	72″	30½″	175 lbs.
No. 12524-B	Size of Top	32″	52″	30½″	100 lbs.



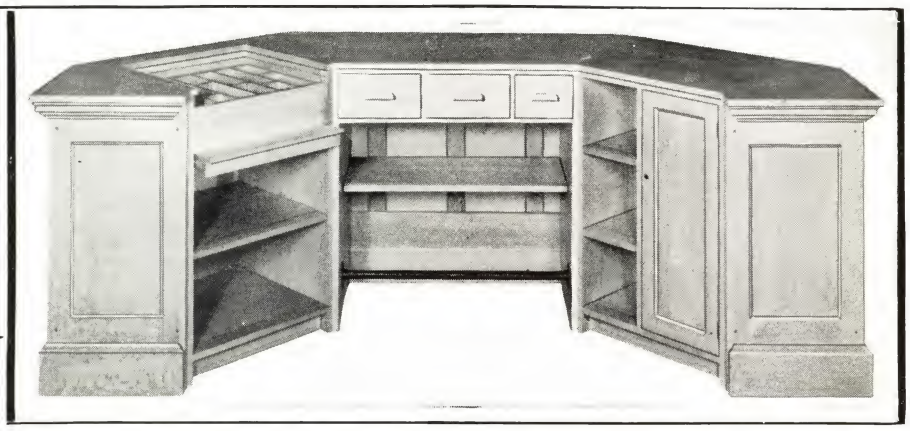
NO. 12550 LIBRARY TABLE—The steel panel table for the library is rapidly gaining in popularity. Tops are 1½ inch, banded edge, made of either oak or birch as ordered, finished in standard school brown, legs are heavy gauge pressed steel finished in brown, heavy wood stretcher lengthwise under top securely fastened to legs adds strength and rigidity; legs are set to allow leg room on all sides. Tables can be furnished in various heights from 24 to 30 inches.

Dimensions	Width	Length	Height
No. 12550	30″	60″	24″ to 30″
No. 12550-A	30″	72″	24″ to 30″
No. 12550-B	36″	72″	24″ to 30″

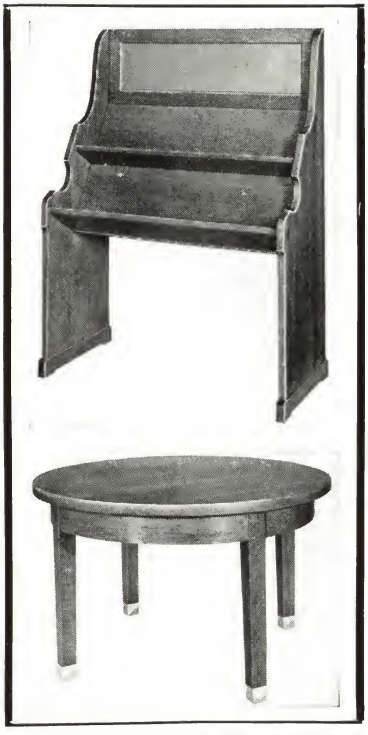
NO. 12530 LIBRARY TABLE *(At Right)*

Full quarter sawed oak finished standard school brown, or in birch as ordered, five ply top, 1½ in. thick, extra heavy crossbanding, edges veneered, 2¾ in. legs fitted with brass ferrules. Table can be had with linoleum top if desired.

Dimensions	Diameter	Height	Weight
No. 12530	42″	26″ to 30″	150 lbs.
No. 12530-A	48″	26″ to 30″	180 lbs.
No. 12530-B	60″	26″ to 30″	260 lbs.

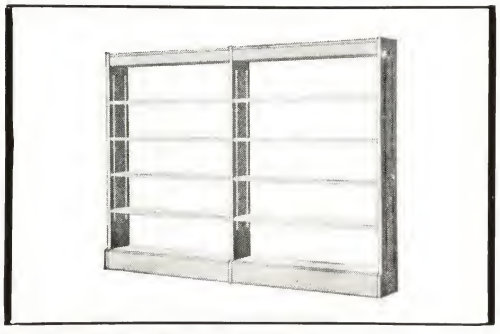


NO. 12500 LIBRARY CHARGING DESK—This semi U shaped charging desk is conveniently arranged. Charging trays, drawers, cupboard and shelves provide every possible facility for the librarian. Right wing of desk front is fitted with drop door for storage of pictures, maps, etc. Center pedestal has cash drawer and two drawers with movable partitions. Left pedestal has six charging trays with partitions, flush cover slides into grooves under charging tray compartment. Iron pipe foot rest provided and toe space in wing sections. Cupboard in right wing fitted with lock. Top is five ply banded edge quarter sawed oak, body quarter sawed oak, finished standard school brown. This desk may also be had in birch, if desired. Overall size: Width, 47 in.; length, 9 ft. 6 in.; height, 39 in.



NO. 12750 DISPLAY CASE *(At Left)*

This book display case affords an excellent way of displaying new books. Large bulletin board above display rack provides space for announcements, book reviews, notices, etc. Average capacity 55 to 60 volumes. Substantially constructed of quarter sawed oak or birch as ordered, finished standard school brown. Overall size—Width, 42 in.; height, 60 in.; depth, 18 in.



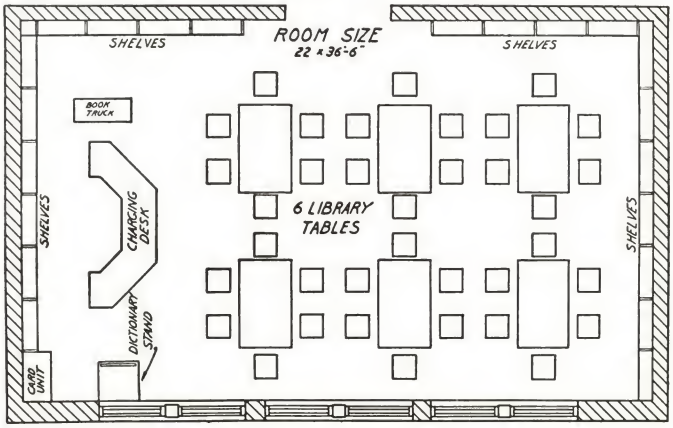
NO. 12600 LIBRARY SHELVING

Most satisfactory equipment for book display and storage. Built on unit principle in 3 ft. units. Can be set end to end and added to or rearranged as may be desired. Shelving is substantially built of oak or birch as ordered, securely braced to insure rigidity.

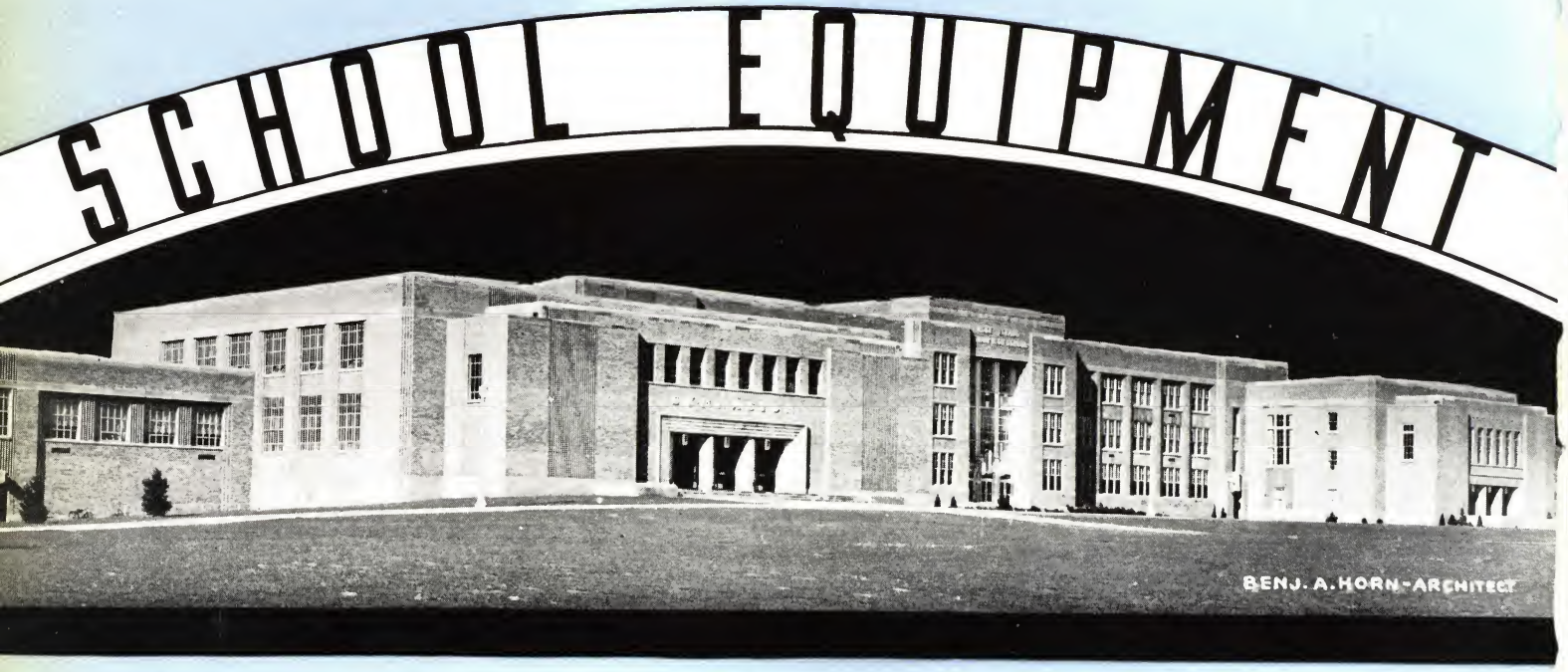
DIMENSIONS—Overall size: Length 3 ft., depth 8 in. and 10 in., height 5 shelves 58 in., 7 shelves 82 in.

TYPICAL PLAN FOR SCHOOL LIBRARY

This typical library layout is adaptable to almost any room of similar size by rearranging shelving to fit wall spaces. Plan shows six tables accommodating six students each. Large charging desk, dictionary stand, card cabinet unit, book truck and twenty-one three foot book sections; any of these book sections may be replaced by magazine display and storage insert sections. The charging desk, tables, chairs and shelving are built to harmonize. Tables are movable thus allowing rearrangement as may be required to accommodate changing conditions. Charging desk in this plan is located to make supervision easy and permit charging and discharging books without disturbing readers. Our unit shelving and interchangeable parts make rearrangement easy, both wall shelving and free standing shelving may be had in two heights. Special design of charging desks, tables, chairs, shelving and other equipment can be furnished. Our engineering staff will gladly make new designs and submit other layouts on request.



BECKLEY-CARDY COMPANY CHICAGO



PAGE	
3	CLASSROOM SEATING
9	ASSEMBLY CHAIRS
10	OFFICE FURNITURE
12	BLACKBOARDS
14	BULLETIN BOARDS
15	WINDOW SHADES
16	LABORATORY FURNITURE
23	LIBRARY FURNITURE

CATALOG NO. 118

SECTION 21

CONTINUED ⟶

BREEZE CORPORATIONS, INC.

BOOKSTACK DIVISION
41 South Sixth Street
NEWARK, NEW JERSEY

TELEPHONE
Mitchell 2-4585

BREEZE METAL LIBRARY EQUIPMENT

The Breeze Corporations, Inc., was organized in 1926. The Bookstack Division of this corporation is one of the leading manufacturers of complete bookstack installations, and lists among its projects one of the largest if not the largest stack installation in this country. Particular reference is made to our contracts with the United States Treasury Department for stack work in the Archives Building at Washington, D. C. An inspection of these installations, we feel confident, will convince one of our ability as designers, engineers, fabricators and erectors in this field of manufacturing.

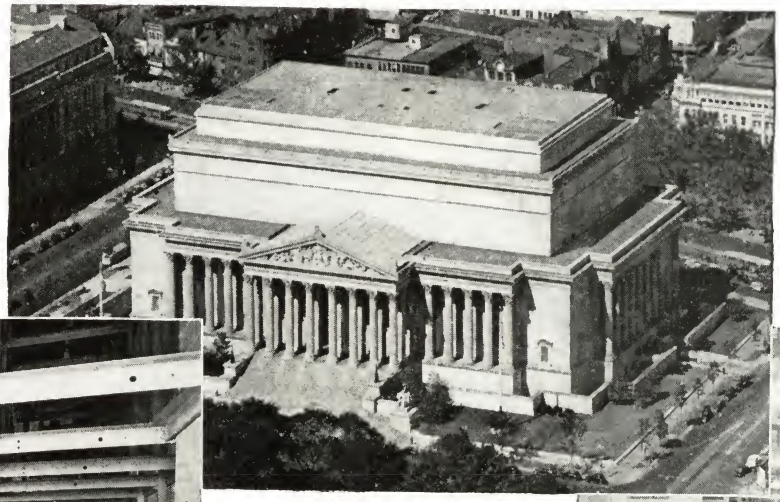
In one plant located in Elizabeth, New Jersey, we operate a large sheet metal working plant equipped with the latest types of sheet metal working machinery.

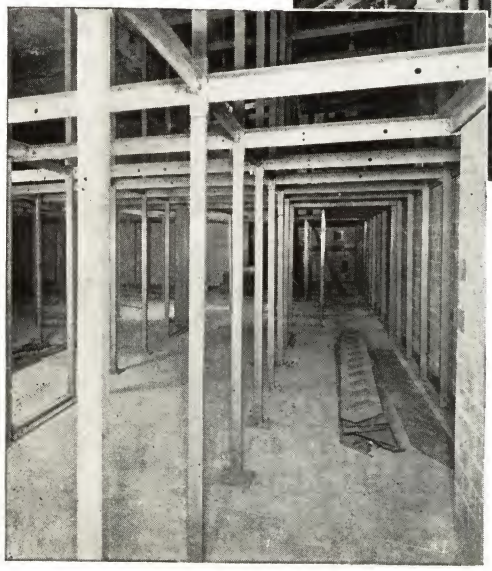
We employ a large and competent staff of experts—men trained specifically in all phases of this work. This organization includes men of twenty years' experience in bookstack construction on many of the largest bookstack installations in this country.

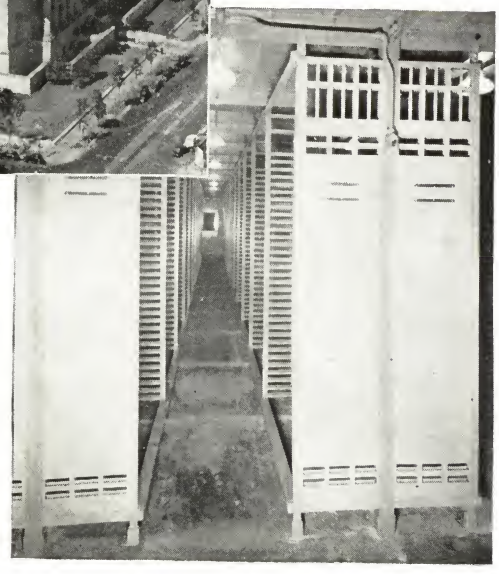
The Breeze Corporations, Inc., manufactures and completely erects bookstacks consisting of columns, uprights, shelves, floors, stairways, conveyors, book lifts and all other accessories ordinarily required in this work. The services of the Engineering Department are available in planning any type of installation.

Bookstack construction ordinarily is not confined within standard limitations as to design and plan. There are certain component parts, such as shelves, columns, etc., which are generally used in every installation. The plan and structure necessarily vary in different types of buildings.

Generally, stack construction follow along regular sizes and dimensions of various stack parts. For convenience in computing the amount of stack necessary, the capacity for both single-faced and double-faced ranges, based on stacks 7 or 7½ ft. high, with seven rows of shelves, —six adjustable and one fixed—the table at the top of the following page has been prepared.







In the new Archives Building, Washington, D. C., twelve million pounds of Breeze Stack Equipment have recently been installed.

On the left is shown part of the supporting framework of the Breeze Stacks.

On the right is pictured a section of the Breeze Stack partitions.

Capacities of Breeze Stacks for Single And Double Faced Ranges

Kind of books	Volumes per foot of shelf	Volumes per lineal foot of Single-faced range	Volumes per lineal foot of Double-faced range	Recommended width of shelves, in.
Circulating	10	70	140	8
Fiction	9	63	126	8
Economics	9	63	126	8
General Literature	8	56	112	8
Reference	8	56	112	8, 10
History	8	56	112	8, 10
Technical and Scientific	7	49	98	8, 10, 12
Medical	6½	45½	91	10
Law	6	42	84	8
Public Documents	6	42	84	8
Bound Periodicals	5½	38½	77	10, 12

Typical Sizes and Dimensions

We list below the sizes and dimensions of Breeze Stacks as generally specified:

Stack Heights—7 and 7½ ft.

Main Aisles—2½ to 5 ft. or more.

Stack Ranges—

Widths—Single-faced for books, 8¾, 9¾, 10¾ and 12½ in. Single-faced for newspapers, 18⅞, 22¾ in.

Double-faced for books, 16¾, 18¾, 20½ and 24¼ in. Double-faced for newspapers, 37 and 44¾ in.

Lengths—As required, preferably in even multiples of the shelf length.

Adjustable Shelves—

Widths — For books, 8, 9 10 and 12 in. For newspapers, 18 and 22 in.

Lengths—As required, usually about 3 or 3½ ft.

Thickness — As required by the span and the load.

Fixed Bottom Shelves — Located approximately 2 to 4 in. above the deck.

Deck Floors—Continuous reinforced concrete slab construction; formed steel plate construction; glass slabs, marble slabs.

Electrical Arrangements — Vertical ducts located on end shelf supports, switch boxes located on end shelf supports; horizontal conduits for main feeds, in sizes as required; also for branch feeds.

Data Necessary for Planning Breeze Stack Installations

In requesting lay-out for approval or approximate cost of installation, it is necessary that the following data be supplied:

1. Kind of books to be stored.
2. Number of volumes:
   (a) Present number
   (b) Future number
3. Dimensions of stack room:
   (a) Length
   (b) Width
   (c) Height
4. Type of Stack preferred:
   (a) Bracket type
   (b) Free stacking
   (c) Top braced
5. Capacity and location of conveyor (if any)
6. Capacity and location of book lift (if any)
7. Electrical work (if included)

Sketches or plans indicating building construction and interferences due to radiators, pipe, etc. This type of information is decidedly helpful.

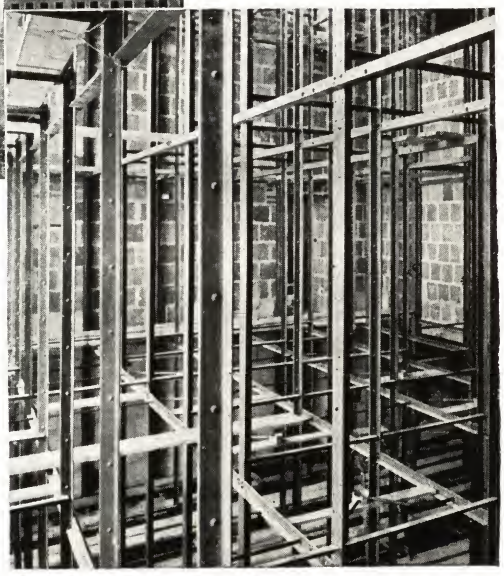




For the recently completed Brooklyn College, Brooklyn, N. Y., Breeze Stacks Equipment was selected. The foreground of the building above shows the location of the 7-tier stack.

On the left is pictured a section of the Breeze adjustable Bracket-type Stack with closed ends.

On the right is shown the stack supporting framework.



HAMILTON MANUFACTURING CO.

TWO RIVERS, WISCONSIN

MODERN LABORATORY FURNITURE—THREE STYLES TO CHOOSE FROM



The Standard Line

Instructor's Table No. L-108 in Standard Line construction is an all-wood table. Furnished in oak or birch; finished in school brown or to match sample; top of black welded fibre finished Ebonite. Any Hamilton Laboratory Table, Desk, or Case can be furnished in this style.



The Steelwood Line

The Instructor's Table No. L-108 in Steelwood construction features lead-coated, steel drawers with wood fronts, Hamiline top, bronze hardware, black ceramic sink, and birch exterior. Finished in school brown or to match sample. Any Hamilton Laboratory Table, Desk, or Case can be furnished in this style.



The Moderne Line

The Instructor's Table No. L-108 in the Moderne Line features flush panel construction, curved corners, birch exterior, Hamiline top, black ceramic sink, hardware in black oxidized finished bronze or black moulded plastic. Any Hamilton Laboratory Table, Desk, or Case can be furnished in this style.

A Complete Line

The complete Hamilton Line includes equipment for instructors, general science and biology departments, physics laboratories, home arts and industrial arts departments, chemistry laboratories and seats, sinks, storage cases, tables, and fume hoods.

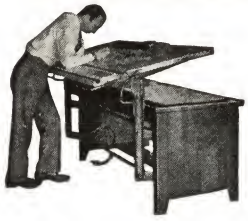
Free Planning Service

Our creative planning service is designed to help you meet and solve all your problems connected with the planning of room layouts and equipment budgets.

Consult Hamilton and accomplish re-equipment at greater economy.

MODERN DRAFTING FURNITURE

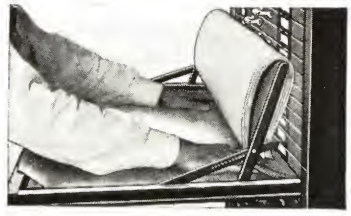
Hamilton Auto-Shift Drawing and Reference Tables



These have the new counterbalanced, "full-floating" drawing board. Top is adjustable to any desired height or slant quickly and easily—it is practically automatic. Each table has a 36x60-in. reference surface which is used by the man in front of the table.

Hamilton-Calumet Shallow Drawer Units

Filing is easy with shallow drawer units because *each tracing is as accessible as the top sheet,* with the *new patented tracing lifter.* Complete protection for valuable tracings, at a very low unit cost. Each shallow drawer hold 100 tracings.



Hamilton Steelwood Drawing Tables



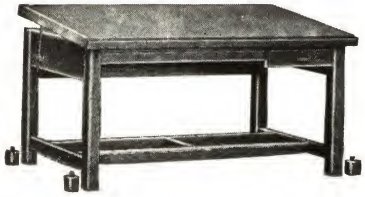
The first major improvement in 4-post drawing tables combines best features of steel and wood construction. Welded steel framework insures permanent rigidity, joints that can never become loose, and freedom from annoying repairs.

Hamilton-Calumet 5-Drawer Units

Offer perfect protection to semi-active tracings. Each drawer equipped with a black coated canvas drawing protector to keep tracings free from dust and prevent curling.



Hamilton Wood 4-Post Drawing Tables



The standard of the world. These tables are efficient, rigid, accurate—tops are smooth and square. They are modern in appearance, with *all corners rounded.* Low in cost.

Hamilton Ideal Drawing Tables

Low-cost pedestal drawing tables. They are sturdily built of the best seasoned wood, adjustable in height and in slant.



JEWEL ELECTRIC & MFG. CO.

INCORPORATED IN ILLINOIS IN 1916

4311 Ravenswood Avenue

CHICAGO, ILLINOIS

JEWEL COLOR CHANGE ELECTRIC FOUNTAINS



No. 565 Jewel Patented Color Change Fountain

We manufacture a very large line of Jewel Electric Fountains. Small portable fountains for homes, or larger sized color change fountains for inside or outside use, about fifty different styles to choose from. Jewel Electric Fountains are all self-contained and do not require any water connection, as a circulating pump direct connected to an electric motor is built into the fountain and this continually circulates the water. Our fountains are excellent humidifiers, and cubes of ice cool the atmosphere.



To architects and contractors we recommend the large outside Color Change Fountains on large display jobs where something beautiful and different is desired, as the many changing colors projected up through the center lens of the Color Change Fountains lend beauty and enchantment to any small lake or pool while in operation in the evening.

We recommend our Jewel Electric Fountains for hotels, fine residences, clubs, and theatres. We own ten exclusive patents on electric fountain designs. Our fountains are very popular in Florida, California, Long Island, and large estates all over the country. Our patented color change rotor is placed behind large outside waterfalls giving wonderful color combinations. Illustrations shown herewith are our No. 551 Color Change Fountain, and our No. 565 Pool Color Change Fountain.



Jewel Musical Fountains are attracting architects as they are entirely new. Musical attachment is directly under the fountain on the stand; but inside the container in our pool fountains. While the beautiful Color Change Fountain is operating, mellifluent classic music comes up from the fountain. At least twenty beautiful musical selections of any kind may be played. Owners of fine homes enjoy displaying this fountain to their guests.

Our Engineering Department can get up any special fountain design for architects or contractors if you give us your requirements. Send for catalog and specification sheets on our fountains.



No. 551 Jewel Patented Color Change Fountain

Over Half a Century of Dependable Service

MEMORANDA

BROCHURE

ON PLANNING AND EQUIPPING THE MODERN LIBRARY FOR SCHOOL OR COMMUNITY



by Gaylord

Gaylord Library Notes

PRESENTING INFORMATION OF INTEREST TO THE ARCHITECT, SCHOOL BOARD AND LIBRARIAN ON PLANNING A SCHOOL OR COMMUNITY LIBRARY

THE IMPORTANCE OF A LIBRARY IN COMMUNITY LIFE

While libraries are more or less taken for granted in the large cities and towns, the number of people in the United States not served by libraries is appalling. The Community Library, the County Library, the Regional Library of various types and extensions from large libraries are all trying to alleviate this condition. The School Library in the smaller communities is also taking an increasingly important place in the community life.

The community which lacks a library or is without access to one is handicapped, not only in educating its adults in general recreational reading but also in the pursuit of special cultural interests. The library acts not only as a place to store books but through modern library practice the information in the books is classified and indexed so that it is readily accessible to the reader. A trained librarian is as necessary as the books, and should be responsible for the proper administration of the library system.

THE LIBRARY IN THE SCHOOL

In late years the school library has assumed a very important position in modern school practice. With the trend to centralization of rural school districts, affording the erection of central schools, it has been possible to provide and properly equip the necessary library in such schools. This would have been prohibitive in cost under the old decentralized plan. Boards of Education now take an active interest and are able to secure the necessary funds to properly equip the central school library. As the school is the heart of the community, so the library is the heart of the school. It is the depository of facts for all courses, the pivot from which cultural activities of the school radiate.

In some towns where there is no public library, the school library is open two or three nights a week for the public. This gives the taxpayers an opportunity to use the building and see how their money has been spent. Those who have no children are benefited and their interest in the school increased.

MODERN TRENDS IN ARCHITECTURAL PLANNING

The architectural trend in modern school design has been to make the school library the focal point for school study. This applies to the elementary as well as the higher grade schools. With the expanding of the functions of the school library in teaching methods, the library has been made more important in the plans.

The architect has seized upon the library as the one room beside the auditorium where an interesting architectural treatment can be added with slight expense. The trend is to make the library more attractive and homelike and to eliminate the severe atmosphere of the classroom with its laboratory appearance. This has had a considerable influence on the attitude of the children from an educational as well as disciplinary standpoint. School boards, superintendents and librarians should plan the equipment of the library with the architect so that the furniture may tie in with his design.

Library specialists know what furniture is needed and what technical equipment should be installed according to the size of the library and the number of pupils in the school. Gaylord Bros. manufactures furniture for library use only and maintains a staff of library experts who are glad to cooperate with the architect and the superintendent on the necessary fittings and their design.

LIBRARY STUDY HALL AND SUPERVISORY CONTROL

Many school libraries are now showing the transition from the old-time study hall to the modern high school library of today. Where there is an adequate, properly planned library there should be no need whatever for a large study hall. Only small study halls or home rooms are required. In order to carry out the "Unit Method" of teaching, it is necessary for the student to do his studying where he has access to many books. Then, too, a student can think more clearly surrounded by books in a library atmosphere than he can at a cramped desk in the old-time study hall. The library should be a room so attractive and full of interest to him that he will be drawn to it, rather than a place which he shuns, or to which he goes under compulsion.

GAYLORD BROS., INC.
STOCKTON, CALIFORNIA . . . SYRACUSE, N. Y.

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SCHOOL LIBRARY RECOMMENDATIONS OF THE A. L. A.

By permission of the American Library Association the following recommendations are quoted from its publication, "Planning the School Library":

"The Reading Room. This should be sufficiently large to accommodate for any full period 10 to 25 per cent of the school's enrollment, the large percentage being applicable to the school of 500 or under. In the very small school (100 or less) the minimum capacity should be equal to that of the average classroom. A convenient estimate for the floor space needed is 25 square feet per reader.

"Conference, Class and Lecture Rooms. In any but the very smallest library, at least one conference room should be provided. Larger libraries will provide from one to six extra rooms, depending on the size of the school and its methods of work.

"Librarian's Workroom. No matter how small the library, this should be provided. It may vary in size from a small alcove to a commodious workshop, but it should never be left out.

"Open Wall Shelving. Not over 7 feet high in the senior high school and 5 feet in the elementary school. Every available foot of wall space should be shelved with radiators placed under windows to save space. All shelving should be adjustable, using metal screw pins for wooden shelves. The regulation size for shelves is 3 feet by 8 inches, but there may be a limited number of sections with shelves 3 feet by 10 or 12 inches to accommodate large reference books or magazines. In computing shelf capacity, 8 volumes per linear foot is a safe estimate.

"Furniture. The junior or senior high school will provide reading tables (size 3 x 5 feet, some 28 and some 30 inches high)—variety may be obtained by occasionally substituting round tables for rectangular ones, or adding reading benches or settees—suitable chairs, librarian's desk or desks with drawers for vertical filing, card catalog and shelf list cases, pamphlet cases, legal size vertical files, magazine rack, newspaper rack, display bookcase, book truck, and at least one bulletin board.

"The school librarian should be your best adviser. Employ a well-trained one before you start building. Put her in touch with your architect and let them work together. Consult also with the supervisor of libraries in your state department of education, the librarian of your state, county or city library, or with the American Library Association, 520 N. Michigan Avenue, Chicago, Illinois."

WOOD, IDEAL FOR LIBRARY EQUIPMENT

Most librarians prefer that their library equipment should be made of wood. It gives the effect of warmth, restfulness and stability; of homelike rather than institutional surroundings.

Wood will take any finish the architect desires, to match the trim of the room, or to give a pleasing contrast between the furniture and the woodwork. Wood also offers a wider range for special ideas or for individual requirements than most other materials of reasonable cost.

Book shelving made of wood is easily adjustable—a most important requirement and an advantage appreciated by every librarian.

OAK, MAPLE AND VARIETY OF FINISHES

Oak, in either light or dark shades, has been used for many years and still is used for replacements.

The present general trend for the newer libraries is toward maple and we find the change is welcomed and appreciated. The color and smooth, hard surface of maple lends a charm of mellowness to library furniture, even when the equipment is newly installed. It makes the library look entirely different from a study hall or class room.

It may be finished in the natural maple in several different shades to harmonize with knotty pine trim, also in a walnut, mahogany or "School Brown," a finish that blends well with finishes of the woodwork used in many schools.

WHEN THE LIBRARY SHOULD BE PLANNED

The proper time for making a complete layout of the library and its equipment is before the general floor plans have been finally decided. An expert in library equipment can be of real service at that time and often can make considerable savings in future costs if consulted early enough. Very often, the suggestion of changing the position of a door or a partition, by as little as two feet, has been the means of adding two additional tables seating twelve more students, an important consideration. Making use of shelving, for enclosing book or conference rooms, has often saved the cost of a permanent plastered partition and made the library more flexible.

If an outline plan of the proposed library is submitted to us, we will, without charge or obligation, make a layout showing the proper equipment for the special requirements of that library.

Many architects and librarians have availed themselves of this service and have later expressed their appreciation of it.

The former, as well as the present Director of School Buildings and Grounds Division of the State Education Department of New York have expressed their appreciation of our cooperation in this type of consulting work.

COVER DESIGN

Pittsford Community Library
Pittsford, New York
James B. Arnold, Architect

AT RIGHT

Children's Room of the New York Society Library, New York City. The light walls and dark mahogany furniture form a pleasing contrast.

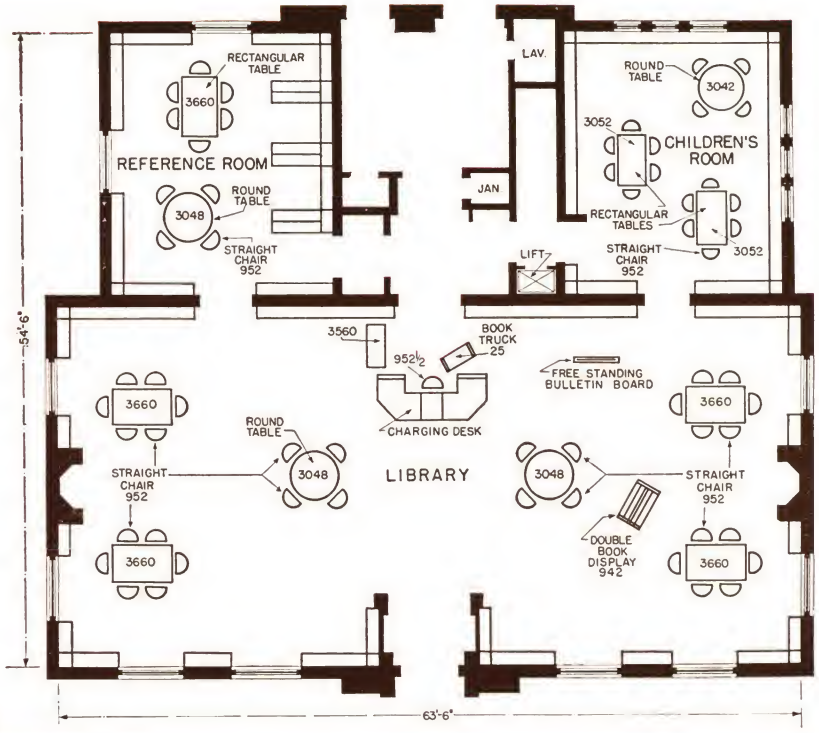




Young—Rodes Library, Danville, Kentucky—Charles F. Cellarius, Architect, Cincinnati, Ohio

Seating Capacity — Adult Room — 32
Children's Room — 16
Reference Room — 10

Book Capacity — Adult Room — 6,500
Children's Room — 1,500
Reference Room — 3,500



When this library was opened in January, 1938 it was pronounced by its visitors the most complete for its size of any library in Kentucky.

The Windsor chairs are particularly appropriate in this library. The turned legs of these chairs are matched by those of the tables, the book display case and the leg base of the catalog case. The sitting height charging desk is the sectional type with fittings adapted to this particular library.

In the Reference Room, which contains many rare and valuable books, are Windsor arm chairs and round tables; here also are colorful window hangings and oriental rugs, making an attractive room of dignity and charm.

All of the interior woodwork is of natural maple. The library furniture is of maple with a special antique finish. The two fireplaces (one at each end of the main reading room), the window draperies, the lighting all combine in creating the pleasing atmosphere so distinctive in this library.

GAYLORD BROS., SYRACUSE, NEW YORK



Knickerbacker Junior High School Library, Lansingburgh, Troy, New York—Irwin W. Whittemore, Architect (Licensed Professional Engineer)

Seating Capacity — 92

Book Capacity — 6,900

This shows what can be accomplished when the architect, the school superintendent, the librarian and a Gaylord representative cooperate in working out every detail of today's school library. The happy result meets all requirements and ties in perfectly with the school curriculum.

Most important are the proper lighting features, the treatment of floor and ceiling, the settees and console table, the window draperies—all contributing to the complete arrangement and resulting in an atmosphere of relaxation conducive to study.

The shelving is of the sectional, adjustable type, with dimensions corresponding to library standards. This allows for expansion and changes as the book collection grows—features not found in built-in shelving. Specially designed uprights and crowns for the shelving match the attractive furniture. Bulletin boards are hinged on the face; back of these are shelves for storage.

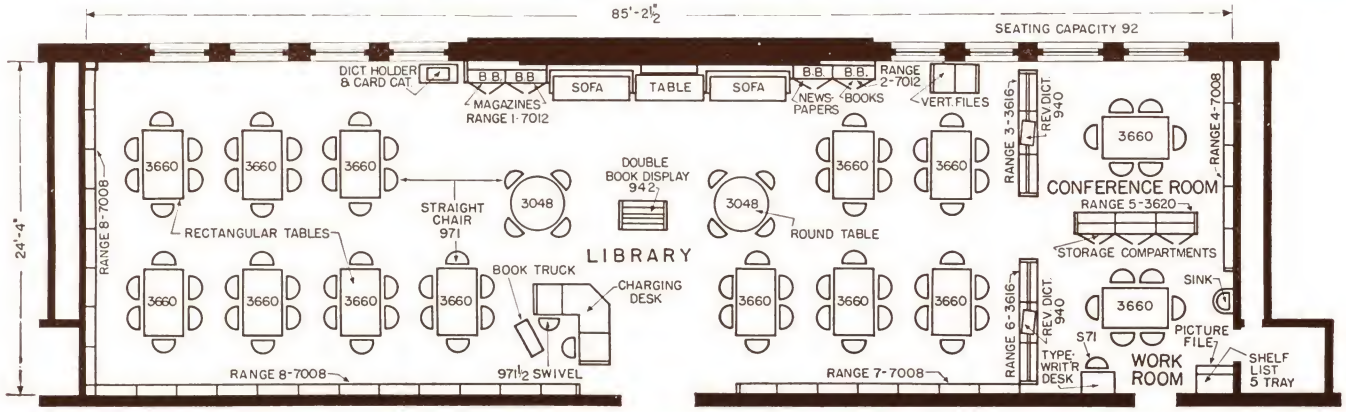
The Charging Desk is correctly located near the entrance. This permits a check of entering students and also provides complete supervision of the entire library.

Work Room And Conference Room—Much has been said and many opinions have been offered concerning these two rooms. If a library has plenty of space and money for equipment, then by all means a separate work room should be included. The Superintendent and Librarian in Lansingburgh felt that since the work room is used so little during school hours it should be combined with the conference room, thereby giving double service.

A screen bulletin board adds to the appearance of the room and at the same time shields the wash basin. One low counter separates the work room from the conference room. Cupboard doors with locks are provided for the storage of supplies.

Large rubber-cushioned chair glides are used to protect the floors and eliminate noise.

All furniture and shelving in this library are made in the same interesting design—following simple lines, with fluted edges for trim. It is constructed of selected maple with a warm, mellow finish; and completely installed by experienced Gaylord craftsmen.



SPECIALISTS IN LIBRARY FURNITURE



Whitesboro Central School Library, Whitesboro, New York—Archibald F. Gilbert, Architect, New York City

Seating Capacity — 90
Book Capacity — 10,000

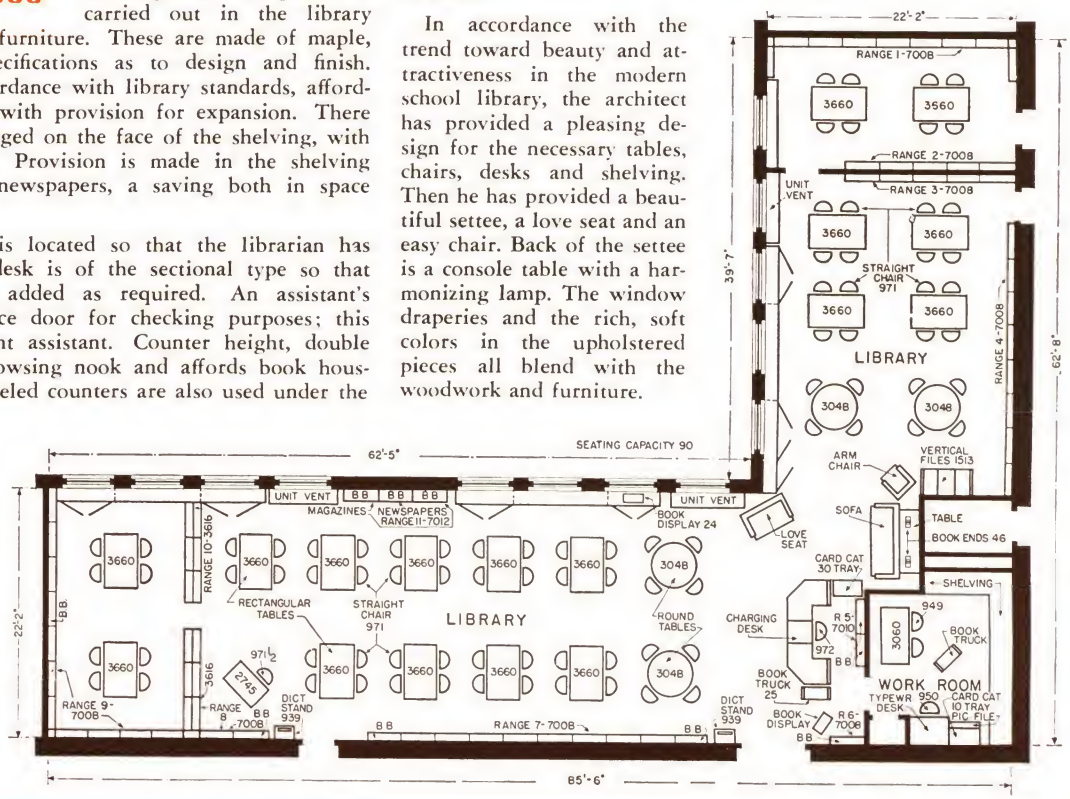
The Whitesboro Central School Building is of colonial design, so this period is carried out in the library trim, paneling, shelving and furniture. These are made of maple, following the architect's specifications as to design and finish. The shelving is made in accordance with library standards, affording maximum book capacity with provision for expansion. There are fifteen bulletin boards hinged on the face of the shelving, with storage space back of them. Provision is made in the shelving sections for magazines and newspapers, a saving both in space and expense.

The desk in this library is located so that the librarian has complete supervision. This desk is of the sectional type so that additional sections may be added as required. An assistant's desk is placed at the entrance door for checking purposes; this is taken care of by a student assistant. Counter height, double faced shelving provides a browsing nook and affords book housing on both sides. Special paneled counters are also used under the windows, enclosing all heating and ventilating units.

To the right of the charging desk is a spacious conference room where groups of pupils may work on debates and plays; or this room may be used for a seminar or as an office.

At the left and easily accessible from the charging desk is a work room provided with basin, running water, work table, and typewriter desk. Here also are a shelf list file, a correspondence file and spacious storage shelving with a deep shelf for use in the repair of books.

In accordance with the trend toward beauty and attractiveness in the modern school library, the architect has provided a pleasing design for the necessary tables, chairs, desks and shelving. Then he has provided a beautiful settee, a love seat and an easy chair. Back of the settee is a console table with a harmonizing lamp. The window draperies and the rich, soft colors in the upholstered pieces all blend with the woodwork and furniture.



GAYLORD BROS., SYRACUSE, NEW YORK

Seating Capacity — 69

Book Capacity — 7,000

All furniture is made of maple with special finish and fluted trim. Chairs are also of maple, the straight chairs having the same fluted design. The chairs in the periodical room are a special type of Windsor with turned legs and turned spindles.

The charging desk is of the sectional type, assembled with units to fit the needs of this particular library with its long, narrow reading room. Seven center sections and one corner section are joined together making a desk 17 feet 7¼ inches long. There are two ranges of shelving at the rear of the desk on either side of the entrance to the workroom.

In the reading room the tables are 60 inches long, each with four chairs at the sides, leaving ample aisle space. In the periodical room the rectangular tables are 90 inches long, providing seating space for eight. The round tables in both rooms are 48 inches in diameter, seating four. In the foreground of the periodical room is an individual study table and chair.

The office has a specially equipped librarian's desk and chair, a rectangular table, Windsor chairs and two ranges of shelving.

In addition to the wall shelving, two double sections of 20-inch counter height shelving were extended from the wall toward the center of the room. This shelving provides additional storage space and separates the general reading room from the periodical room.

In the periodical room the shelving was especially designed for the display of magazines and periodicals. The sloping top has a 3-inch angle and extends in a continuous strip around three quarters of the room. Horizontal shelves adjusted to 4-inch spacing were placed below to care for magazines not on display. This range is 40 inches high and is fitted beneath the window sills; radiators are grilled.

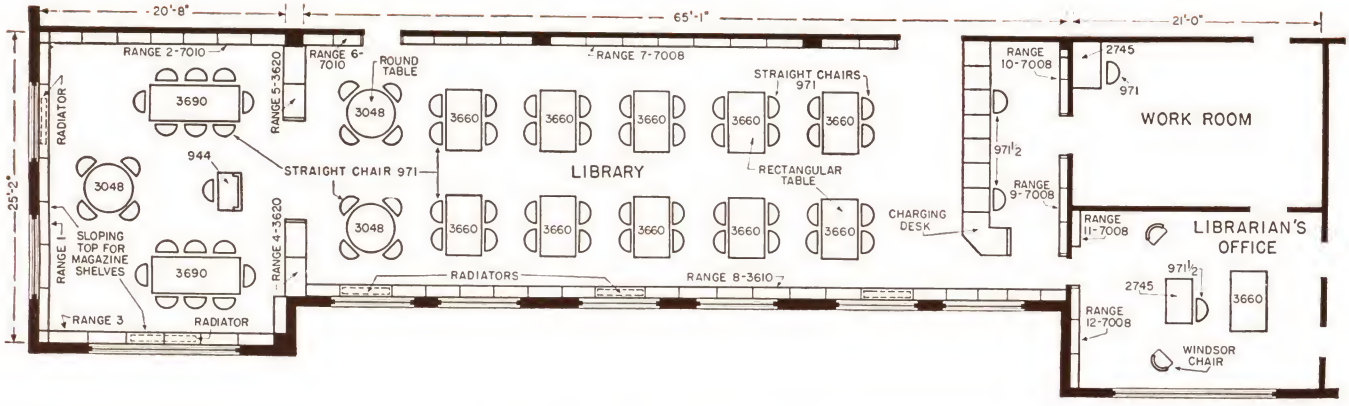


Junior College Library, Portales, New Mexico—O. F. Walker, Architect, Lubbock, Texas

The periodical section of the library, separated from the long reading room by counter height shelving.



The main reading room with the charging desk at the farther end of the room; behind this desk are the librarian's office and the workroom.

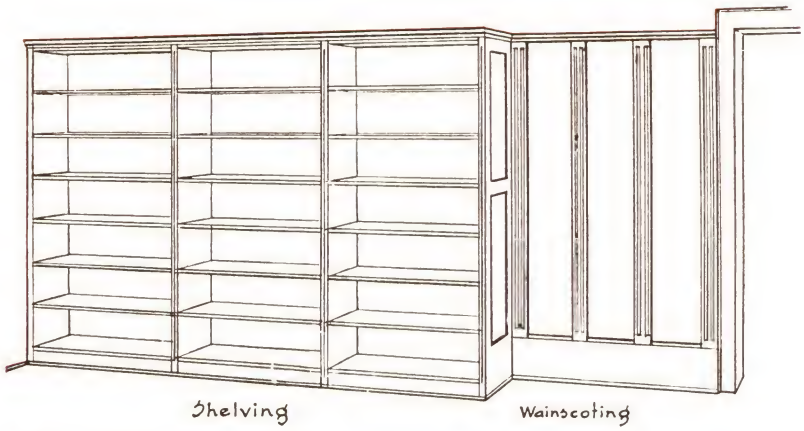


"GAYLORD MAPLE" SHELVING, CHARGING DESKS . . .

In selecting furniture for a library three major factors should be kept in mind—simplicity, durability and beauty. Standard equipment, which will conform with the necessary technical library procedure, should be used; however, a wide variation in design, wood and finish may be obtained with no sacrifice of the working efficiency of the library as a whole. It should be kept in mind also that changes or new features may be desired later, and that room for expansion in desks, shelving and seating capacity should be considered.

Maple, with its variety of finishes and special designs for the exterior of the various items of furniture, solves the problem of those who want "something different" in a library and makes possible a room that is informal and attractive.

Most of the specially designed furniture on pages 8 and 9 has been planned around the No. 971 chair, (shown on page 9). These pieces are made of maple and carry the same fluting design as that used on the chair.

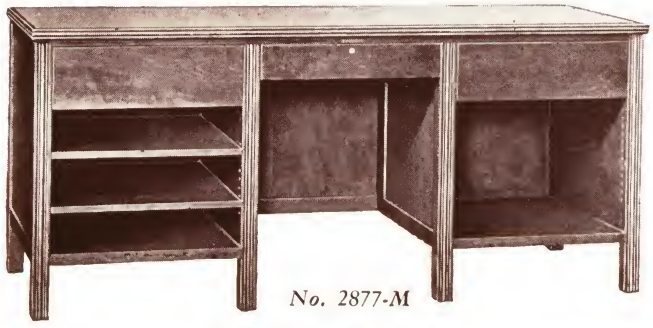


This shelving and wainscoting tie in together. Gaylord Bros. makes the shelving and cooperates with the architect so that the general contractor may carry out the same design on the wainscoting and trim of the room.



No. 936-M

The Magazine Rack with its six compartments will hold about fifty-two periodicals of various sizes. It is made of maple and also designed to match the No. 971 chair (opposite page).



No. 2877-M

Solid Charging Desk

This desk is designed for a library where a small charging desk is needed, yet one equipped for library use.

In each pedestal there is a top drawer; in one of these are two removable crosswise trays for book cards, in the other are trays for catalog cards. Below both these drawers are open shelf spaces. The center drawer is equipped with lock and convenience tray. The base may be either open or closed; the open base is illustrated.

The desk is made of maple with fluted trim. It may also be made to conform to a special design of the architect.

Length—77 inches Height—32½ inches Depth—28 inches



No. 104-M

Lounge Chair

For a browsing room, alcove or corner, one or more lounge chairs or a lounge chair and davenport, together with small tables, form a pleasing combination and one that is found in many libraries.

The chair frame is of maple, and cover material may be selected to harmonize with the general color scheme of the library.



No. 521-M

A maple Book Table in a colonial design will just fit into some special place and makes a pleasing note in furniture grouping.



No. 540-M

Maple Settees in various colonial design with upholstery to harmonize with the color scheme of the room form the nucleus for attractive corners in many libraries. A long table with lamps and books may be placed behind the settee, or a book table (illustrated at left), floor lamp and one or two arm chairs may be grouped around a sofa or settee.

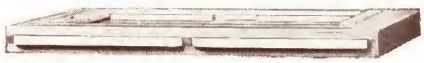
. . . CATALOG CABINETS, TABLES, CHAIRS, ETC.



No. 3500



No. 3505



No. 3501



No. 3510

Horizontal Units for Card Catalog Cabinet

A cabinet made of these horizontal units lends itself most effectively to the demands of simplicity, economy and flexibility in a library. The cabinet may be built up with a leg base, a five, ten or fifteen card tray section and a top; this makes a free standing piece of library furniture. Five, ten or fifteen tray units may be added as there is need for more card catalog drawers. The units of catalog trays make possible the expansion of the catalog case to any desired size.



No. 3500-M
No. 3510-M
No. 3502-M
No. 3524-M

Catalog and Picture Combination Vertical File Unit

For a small catalog the trays in units of five, ten or fifteen trays may be combined with a two-drawer vertical file unit (with top and leg base). The large drawers may be had in correspondence or legal size; in them are housed the picture, clipping or information file or they may be used for correspondence. This combination is made of maple with fluting on the top and legs; it may be obtained in any desired finish and trim.



No. 3660-M
Rectangular Table

These tables are made in various sizes. The standard sizes are 36 by 60 or 90 inches, 25, 28 or 30 inches high.

Built up, five-ply top, 1½ inches thick, with heavy edge band ⅜ of an inch thick, tongued and glued to core and mitered at four corners. Tenoned aprons enter in grooves provided in the legs. The legs are built up and faced with heavy veneer to show graining on all sides. Heavy steel hanger and bushings are used to connect legs to top and aprons.



No. 3048-M
Round Table

Round tables have a top diameter of 42, 48 or 60 inches and are 25, 28 or 30 inches high.

Built up legs with maple on four sides are connected to top and apron by steel hangers and held in place with large machine screws; these enter into steel bushings anchored within the leg construction.

Apron is built up from seven-ply to form curve of correct radius. Top is built up five-ply banded with ⅛ inch banding to the edge.

All tables are shipped knocked down for safe transportation.

The tables illustrated above are made of maple with fluting on legs to correspond with the "Gaylord Maple" furniture shown. A variety of finish and design is also obtainable for these tables.



No. 971
"Gaylord Maple" Chair



No. 971-A
"Gaylord Maple" Arm Chair



No. CSA
Arm Chair



No. 952
Windsor Chair

These illustrations show some of the most popular chairs. Various other types are also available.

GAYLORD WOOD BOOK SHELVING AND . . .

The Gaylord Wood Book Shelving made in the "unit" style meets library requirements completely and satisfactorily.

It is equally suitable for new libraries and for rearrangement of established libraries.

Flexibility—This shelving can be fitted easily into almost any available space, whatever its size and shape, either against a wall or entirely detached. It may be readily adjusted to changes and to requirements for more book space. Attractiveness, strength and rigidity are combined in its design.

The standard shelving unit is 3 feet wide, constructed to that one unit with two paneled ends makes a complete case; or several units may be joined with partitions between them and only one pair of paneled ends, providing for a range of any desired length.

Knock-Down Construction—This makes the assembly and installation of Gaylord Shelving a simple matter and changes are made easily. The different heights and depths available offer a complete variety for any shelving need, yet the standardization of dimensions makes it possible to add to sections or ranges at any time.



No. 5212-M
5 Foot 2 Inch Shelving
(Backs, as shown, constitute an added feature and must be specified)



No. 3612
Counter Height
Shelving—with Modifications

Threaded nuts and bolts are used for intermembering one section with another, and the paneled ends are equipped with steel bushings, into which steel bolts engage. A screw-driver is the only tool necessary when assembling or dismantling this shelving.



Rear View



With Book Trough Top

Standard Shelving—This is furnished in heights of 3 feet 6 inches, 5 feet 2 inches and 7 feet. Shelves are made in the following depths: 8, 10, 12, 16, 20 and 24 inches ¾ inch thick. Shelving is made with and without back as desired.

The shelves are made of narrow pieces of white wood glued together and edged with the same wood that is used for the framework. This construction prevents warping. Shelf pin holes are accurately spaced, and threaded steel shelf pins are used to support the shelves.

All shelving is carried in stock in oak and maple, matching standard finishes in library furniture. It is also made to order in any special finish or design to correspond with other equipment.

Counter Height Shelving—This may be single or double faced and may be used as a substitute for partitions, setting off browsing nooks, conference or work rooms or an entrance. Thus this shelving gives a double utility as it adds to the available book space as well as forming a partition.

One or more of these sections may be equipped with regular book shelves, magazine shelves, storage cupboards or with combinations of these. The top of a section may be flat, sloping or in the shape of a trough for book display, thus adaptable to a wide variety of uses.

The units of standard shelving are furnished open or with backs, as illustrated above. Counter height shelving may be open or have panelled backs, as illustrated. If backs are desired, they should be included in specifications—also whether plain or panelled.



1. 2. 3. 4.

No. 7012
Range of 7 Foot Shelving with Newspaper Rack, etc.

At the Left: Special Arrangements in Standard Wall Shelving.

1—Locked Compartment—A section with glass doors that may be locked is sometimes desirable for valuable books.

2—Magazine Section—Current issues of magazines lie flat on the sloping shelves, with immediate past issues on the straight shelves below. Older magazines are housed on shelves back of bulletin boards, conserving space.

3—Rack for Newspapers—This arrangement provides for newspapers and a bulletin board with shelf space behind it.

4—Section with regular book shelf arrangement.

. . . SECTIONAL CHARGING DESKS

The Sectional Charging Desk with the linoleum top, originated by Gaylord Bros. is one of its best items of service to the library field. This unit type of desk may be adapted to libraries of any size. It has all the advantages of the unit type of construction so well known in catalog cabinets and vertical files.

A charging desk may be started with one or two sections and then additional sections may be added later for expansion as needed.*

Another advantage of this desk is the interchangeability of the units containing the various types of inside equipment—drawers, shelves, cupboards, card files, etc. These units may be rearranged or changed at any time to meet the individual requirements of the library.

This flexibility of the sections from one position to another, and the detachable ends (which may be attached to any one of the sections), make changes possible when desired without any replacement of units.

Oak and maple are used for this desk; the finish, the trim, and the panel detail may be made to conform with any special design or to match other library furniture. Bases are recessed on inside to allow toe space: outside may be equipped with marbelized rubber base to prevent marring if desired.

A few desks showing possible combinations of sections are shown on this page.

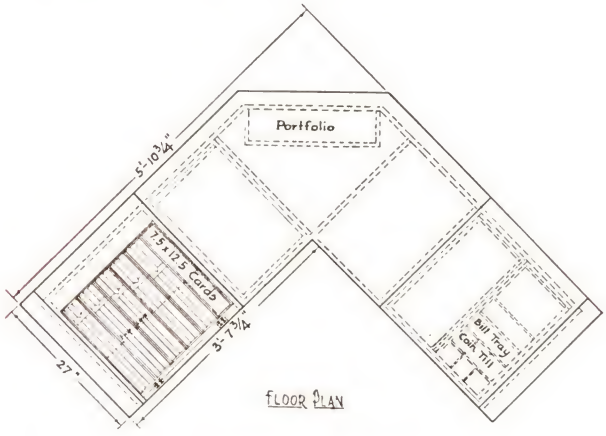
**All Charging Desks are made in either sitting height (32½ in.) or standing height (39 in.)*



Sectional Charging Desk—Four Units with Ends
Sitting Height—32½ inches



Sectional Charging Desk—Three Units with Ends
Standing Height—39 inches





Inside View of Sectional Charging Desk, showing convenient arrangement of space —Floor Plan at left



Inside View of Desk with one Corner and One Center Section
Sitting Height—32½ inches



An Adequate Desk for the Small Library—Sitting Height



OFFICES

Syracuse, New York, is the home of Gaylord Bros.' main office and two manufacturing plants — one for making general supplies, the other for library furniture.

The western branch office and factory are located at Stockton, California. From here supplies and furniture are shipped to California, Oregon, Washington, Idaho, Utah, Nevada, Montana, Wyoming, Colorado, Arizona, New Mexico, Texas, also Alaska, the Hawaiian Islands, the Philippines and the Far East.

OTHER PRODUCTS

For forty-two years Gaylord Bros. has been manufacturing library supplies and selling direct to libraries of all types — public, school, college, special, institutional, etc. Among these supplies are all kinds of catalog cards, book cards and pockets, printed forms, magazine and pamphlet covers, publicity supplies, book repair materials and the Electric Automatic Charging Machine.

Gaylord Bros. is known throughout the library world for the high quality of its merchandise, for new ideas in library equipment and for promptness in filling orders.

This specialized library service is an accommodation to which the customer is entitled and which he receives when he buys from Gaylord Bros.

GAYLORD BROS., INC.

LIBRARY SUPPLIES AND FURNITURE

STOCKTON, CALIFORNIA . . . . . SYRACUSE, NEW YORK

MITCHELL MANUFACTURING COMPANY

3030 West Forest Home Avenue
MILWAUKEE, WIS.

MITCHELL ALL-PURPOSE FOLD-O-LEG TABLES

Reduce furniture and equipment investment with Mitchell Fold-O-Leg Tables. While they have the folding advantage, they are just as strong and rigid as more expensive stationary tables.

It is easy to see why Fold-O-Leg Tables provide 25% greater seating capacity—save 300% storage space. Note that leg units have no sharp edges or projections—designed to eliminate knee interference—that the table is only 2½ in. thick when folded.

Made in complete range of sizes with choice of thick 5-ply fir veneer, Tempered Masonite Presdwood, or Linoleum tops.

This All-Purpose Table is used by scores of customers among them schools, churches, colleges, hotels, clubs and lodges, institutions and municipalities who have found it eminently satisfactory.

Other Products

MITCHELL MANUFACTURING COMPANY has been manufacturers of steel products for over forty years and also manufactures a complete line of Swimming Pool and Beach Equipment, Playground Apparatus, and Sanitary Dairy Barn Equipment. Write for information.

Specifications of Steel Legs

Made of welded high carbon steel tubing welded into one unit with steel folding brace. Single jacknife locking assembly with compression spring lock permits folding and opening of legs with one hand. Simple attachment can be furnished for converting brace from folding to stationary type. Smooth metal plugs prevent marring of floors. Finished in brown enamel. Convenient sizes in 21, 24, 27, or 30 in. heights.

Specifications of Standard Table Tops

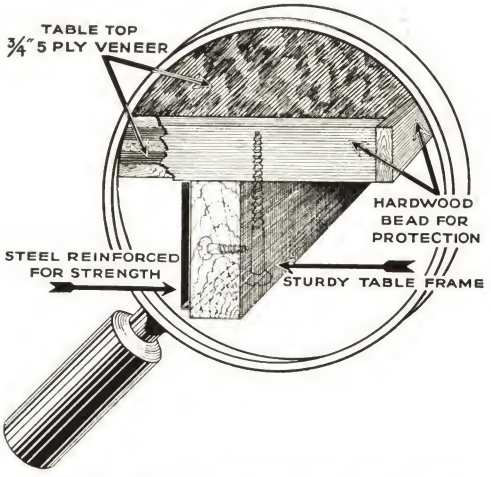
Made of ¾-in. 5-ply clear fir veneer with ¼-in. gunwood banding, glued and nailed to edges for protection. Apron made of select yellow pine, 1⅝ in. deep by 1⅛ in. wide, mitered at the corners and attached to top with screws. Long members of apron lined with steel on tables over 6 ft. long. Wood parts finished with light oak stain. Tops sealed, sanded and varnished.

Specifications of Masonite Table Tops

Same as standard tops except that ⅛-in. Tempered Masonite Presdwood is securely glued to the 5-ply fir veneer and ¼-in. Masonite band is glued and nailed to the edges. All wood parts finished in light oak stain, sealed, sanded and varnished. Masonite top has a rich brown color finished with wood primer and wiping varnish.

Specifications of Linoleum Table Tops

Same as standard tops except that ⅛-in. desk grade Linoleum is glued to the 5-ply fir veneer. Edges protected with ¼-in. gumwood banding. All wood parts finished in light oak—sealed, sanded, varnished. Color of linoleum, Armstrong No. 20 Brown—finished with Benwax.



Strength and Rigidity Are Built Into Fold-O-Leg Tables

Notice the construction—how the strong apron is securely attached to the top—how the apron is braced and reinforced with a steel strip for added strength which prevents sagging. The hardwood band around the entire 5-ply veneer top protects it against damage.



25% Greater Seating Capacity



Table is merely laid on its side and both steel leg units are folded into recessed top. It becomes a compact unit, easily handled, in only a moment's time.

300% Saving in Storage Space

REMINGTON RAND INC.

LIBRARY BUREAU DIVISION
BUFFALO, N. Y.
BRANCH OFFICES IN PRINCIPAL CITIES

STEEL BOOKSTACKS AND LIBRARY EQUIPMENT SPECIALISTS SINCE 1876

Products and Services

Steel Bookstacks	Wood Book Shelving
Museum Cases	Stack Equipment
Magazine Racks	Furniture
Card Catalog Cases	Administrative Systems
Charging Desks	Library Systems
Tables and Chairs	Consulting Service

A Complete Library Equipment and Consulting Service

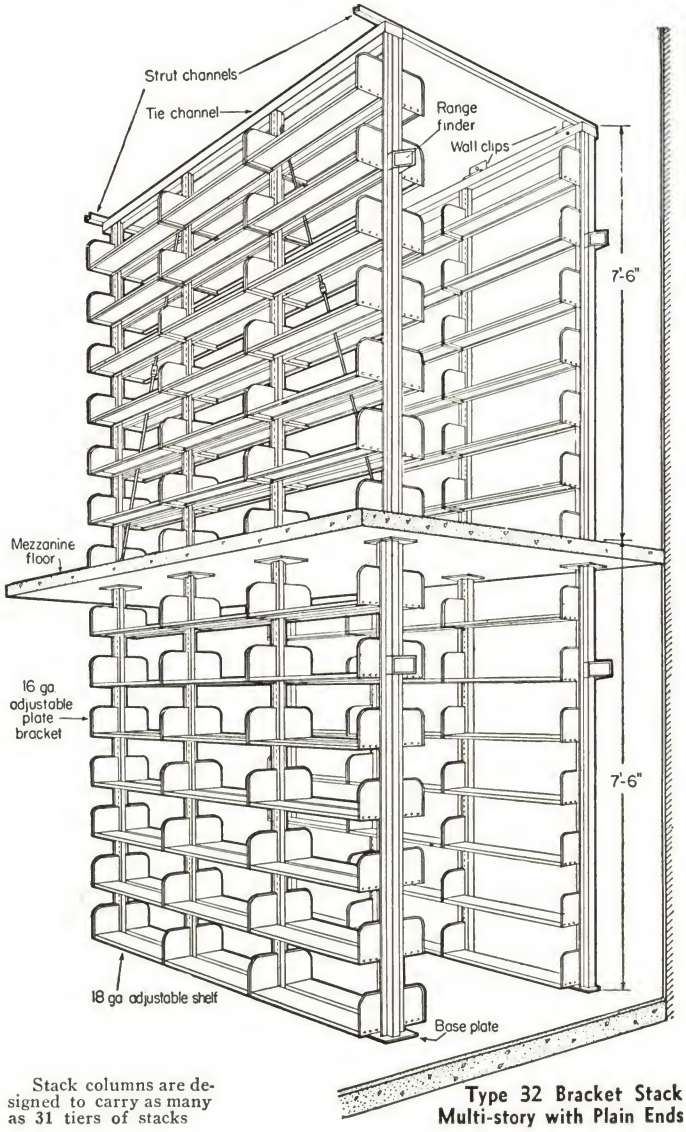
The Library Bureau Division of Remington Rand offers to architects a complete, specialized service on library planning and equipment. Experience has proved that the full value of such service can be realized only if it is rendered continuously from the time when projects are in the "sketch" stage through to the making of working drawings. Constant contact with library administrators in all sections of the country and a thorough study of present and possible future trends, have developed an experience which is authoritative and dependable.



University of Denver, Denver, Colo.

A Few Prominent Installations

Carnegie Library, Atlanta, Ga.
Public Library, Austin, Texas
Boston Public Library
Franklin and Marshall College
Indianapolis Public Library
Los Angeles County Medical Society
Mellon Institute of Industrial Research, Pittsburgh, Pa.
Northwestern State Teachers' College, Alva, Okla.
Rutgers University
University of Chicago
University of Denver
University of Louisiana
University of Missouri
Syracuse University
Smith College, Northampton, Mass.
St. Thomas College, St. Paul, Minn.
State Normal College, Cape Girardeau, Mo.
New U. S. Supreme Court Bldg., Washington, D. C.

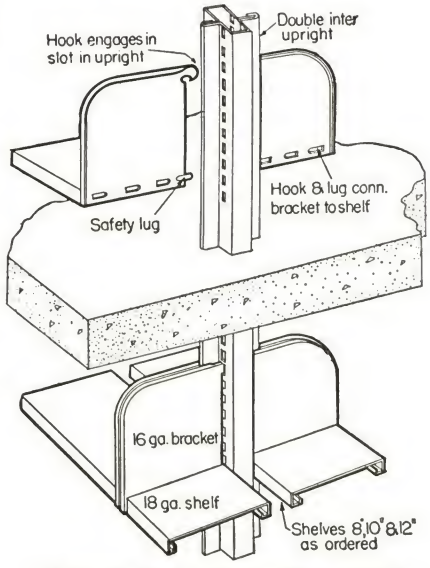


Stack columns are designed to carry as many as 31 tiers of stacks

Type 32 Bracket Stack
Multi-story with Plain Ends

Engineering Principles

Library Bureau Type 32 multi-story bracket stacks, with concrete floors, are entirely self-supporting. They can be erected before or after the building walls are in place and can be entirely insulated from the building walls in so far as the transmission of vibration, strain, etc., is concerned. On the other hand, the floors can be tied to the building walls, providing additional lateral ties and aiding materially in wind bracing. The stack decks are reinforced concrete extending continuously over each level. Electric light conduits are concealed within the concrete.



Detail of Double Intermediate Upright
Showing Shelf and Bracket Connection

STACK STANDARDS

Shelving Data

To estimate the *approximate* book capacity of a stack room one tier high (no allowance for stairways and lifts) multiply the number of square feet in the room by 20. The table below is worked out on this basis for one tier only. Example: If a room is approximately 55 ft. long by 40 ft. wide, it will hold about 44,000 volumes (see arrows).

A typical library requires shelving proportioned as follows:

85%—8 in. deep; 13%—10 in. deep; 2%—12 in. deep or deeper for flat folio or newspaper housing.

Width of Room →	Length of Room ↓ 30	35	40	45	50	55	60
30	18,000	21,000	24,000	27,000	30,000	33,000	36,000
35	21,000	24,500	28,000	31,500	35,000	38,500	42,000
40	24,000	28,000	32,000	36,000	40,000	44,000	48,000
45	27,000	31,500	36,000	40,500	45,000	49,500	54,000
50	30,000	35,000	40,000	45,000	50,000	55,000	60,000
55	33,000	38,500	44,000	49,500	55,000	61,000	66,000
60	36,000	42,000	48,000	54,000	60,000	66,500	72,000

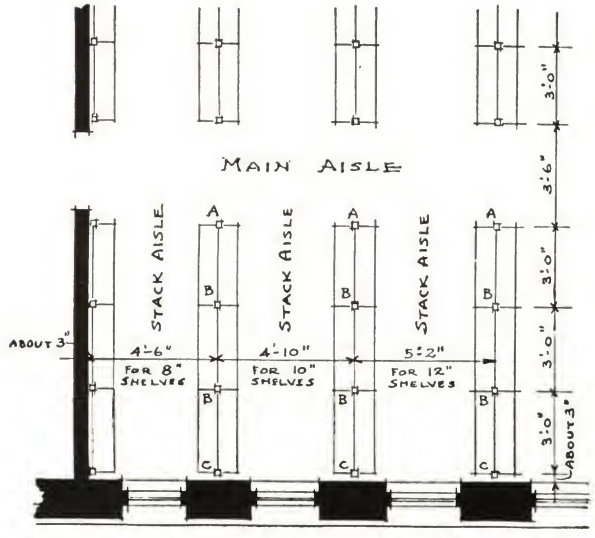
	Volumes per foot of shelf	Depth of shelf in inches
Fiction—Economics	9	8
General Literature	8	8
Law	5	8
Medical	6½	8
Public Documents	6	8
Reference—Scientific—Technical	7	10
Bound Periodicals	5½	10

Stack Measurements

As far as possible, range lengths should be multiples of 3 ft. on centers of uprights. See plan below for spacing of ranges.

Standard stack tiers are 7 ft. 6 in. high, measuring from top to top of deck floors. This height allows sufficient head room under the light fixtures in the stack aisles. Stack heights more than 7 ft. 6 in. are sometimes required to meet varying building conditions.

Deck floors are reinforced concrete (minimum thickness 3 in.), glass (¾ in. thick), marble or slate (1¼ in. thick).



TYPICAL PLAN OF STACK RANGES

Stack Weights

Shelf load, including books, shelves, brackets, and uprights, averages 30 lbs. per cu. ft.

Floor loads, per square foot, gross area including weight of floor framing:

Reinforced concrete floors—38 lbs. per sq. ft.
Same, with floor covering—41 lbs. per sq. ft.
Glass floors on steel frame—18 lbs. per sq. ft.
Marble or slate floors on steel frame—26 lbs.

For column loads, assume 60 lbs. per sq. ft. of aisle area for live load, and reduce the figure 5% for each deck below the top deck.

The following table of loads is for Library Bureau 8-in. double-faced bracket stacks, spaced 4 ft. 6 in. apart on centers, and signifies total loads at the bases of the uprights for stacks with concrete floors (7 ft. 6 in. height, floor to floor) with a reduction of 5% for each floor from the top down. Weights include bookstacks, books, floors (dead load), and live load.

TABLE OF LOADS

A = Typical aisle end upright. B = Typical intermediate upright. C = Typical wall end upright.

Number of tiers	Load on Column "A"	Load on Column "B"	Load on Column "C"
1	450 lbs.	900 lbs.	450 lbs.
2	2236 lbs.	2900 lbs.	1450 lbs.
3	3950 lbs.	4840 lbs.	2420 lbs.
4	5590 lbs.	6740 lbs.	3370 lbs.
5	7175 lbs.	8640 lbs.	4320 lbs.
6	8700 lbs.	10450 lbs.	5225 lbs.
7	10210 lbs.	12240 lbs.	6120 lbs.
8	11690 lbs.	14000 lbs.	7000 lbs.
9	13170 lbs.	15780 lbs.	7890 lbs.
10	14650 lbs.	17560 lbs.	8780 lbs.
11	16130 lbs.	19330 lbs.	9665 lbs.
12	17615 lbs.	21100 lbs.	10550 lbs.

See plan at left for location of these typical uprights.

Wood Library Furniture

Library Bureau wood furniture, in stock or special designs, is expressly made for library use. Special design shown below.



Wood Library Furniture in Library of Agnes Scott College, Decatur, Ga.

MEMORANDA

W. & J. SLOANE

CONTRACT DIVISION

Sole Distributors in the United States of RedyRef Telephone Book Racks

575 Fifth Avenue, NEW YORK, N. Y.

For Our Catalogs on Mantels and Movable Partitions, see File Index

REDYREF RACK

A Broad Basic Idea for Handling Books of Reference

Description

With RedyRef's patented swivel mechanism, a telephone book may be opened with a flip of the finger, and later swung into place. RedyRef racks are usually furnished in mahogany or walnut finish. The binder covers are of attractive, durable material, conveniently indexed. Estimates furnished on request for special construction, finishes or sizes for any type of rack or table using the RedyRef principle.

RedyRef Patented Principle

The RedyRef principle is covered by a basic patent comprising the following elements in combination: (1) A plurality of binders to hold directories, adapted to swing about their centers on a pivot; (2) A pivot rod passing transversely through the backs of the binders intermediate the ends thereof for supporting and permitting the binders to swing around said pivot; (3) A casing and support for rod so that a directory when mounted on said device is normally suspended from rod inside the casing and may be swung to a position outside of casing whereby the directory is supported by its pivot and adjacent parts of the device in position for use.

Caution to Architects

It is obvious the third element above mentioned broadly covers any structure whatsoever which is designed as a casing for the binders and support for the pivot rod. Therefore, the use of such structure in combination with the other two elements, when not authorized by licensee, constitutes an infringement. The binders, rod and hardware will in no case be furnished separately on initial installations and the casing should not be made a part of any general woodworking or other contract in the expectation of securing the remaining parts separately.

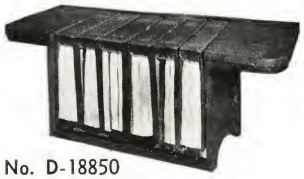
To avoid difficulties and so that we may co-operate to the fullest extent possible, we suggest that all contemplated installations using the RedyRef principle for telephone directories be referred to us at inception.

Stock Models



No. D-495F
RedyRef Floor Rack

Stock Sizes (overall)
5-binders 19¼ in. w., 18 in. d., 37¾ in. h.
6-binders 19¼ in. w., 18 in. d., 37¾ in. h.
Stock Finishes
Walnut or mahogany



No. D-18850
RedyRef Wall Rack

Stock Sizes (overall)
5-binders 30 in. w., 14 in. d.
6-binders 33 in. w., 14 in. d.
Stock Finishes
Walnut or mahogany
(Attach to wall, column, or telephone booth with top of shelf 42 in. from floor.)



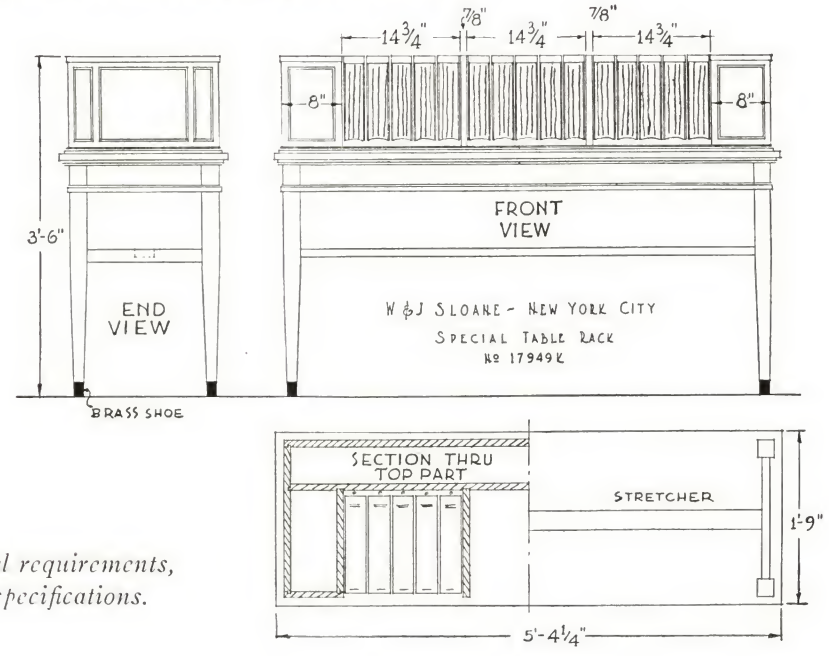
No. D-16322
RedyRef Desk or Table Rack

Stock Sizes (overall)
4-Binders 16⅜ in. w., 17 in. d., 17¼ in. h.
5-Binders 16⅜ in., w., 17 in. d., 17¼ in. h.
Stock Finishes
Walnut or mahogany

The above models can be made special of any wood and to accommodate any number of binders. No. D-18850 can be made with special tops, such as Stainless Steel, Micarta, Formica, or to your specifications

Special RedyRef TELEPHONE BOOK RACKS

Illustrated at the right is but one of the many special types of racks we have made up in the past to meet special requirements and conditions.



Racks Designed to Your Requirements

We will design racks to meet your special requirements, or fabricate them from your drawings and specifications.

FOUNDED 1849

SNEAD & COMPANY

TELEPHONE
DElaware 3-3500

Designers and Manufacturers of Metal Library Bookstacks, Study Carrells, Book Distributors, Stack Aisle Light Reflectors, Rolling Book Cases and Allied Equipment

206 Pine Street, JERSEY CITY, N. J.

For Snead Floor Grids and Snead Partitions, see File Index

Scope of Snead Service



Snead & Company has built stacks for many of the world's great libraries. The original Snead Bookstacks for the Library of Congress with cast iron shelf supports, were completed 40 years ago. Prior to that Snead & Company had been manufacturing metal products for 49 years. Today, we believe, the company is the largest producer of metal stack equipment in the world.

The less costly types of Snead Shelving can be purchased from stock for small libraries, law offices, business offices and book stores, in small units designed to be added to as the need arises. Much of the work, however, is highly specialized and most of the improvements in stack construction have been developed by this company.

Snead Engineers developed the Snead Continuous Deck Floor Construction, the Snead Convertible Stacks and Rolling Cases, the Snead Zig-Zag Ventilating System, the Snead Book Distributor, the Snead Hinged Bracket Shelf, the Snead Stack Carrell Units, and many accessories—including the Snead Aisle Light Reflector for the efficient library.

We will be glad to recommend the most satisfactory type of construction for the problem involved. Since we make all types of stack construction and are not partial to any one type, we are in a position to offer unprejudiced advice. Our facilities are complete for taking charge, under one contract, of every item necessary to equip the stack room of the modern library. Our staff of experts is available for consultation, criticism, and the development of special designs, including catagorical estimates—all without obligation. Whether it be a simple installation of wall shelving or a fifty-tier tower stack—nothing is too small or too large.

Standards and stack data will be furnished gladly on request. Bookstack construction cannot, from its very nature and use, be confined within strict limitations as to design and plan.

But there are certain rules to be observed, if good planning and economy in cost are to be achieved. Consultation with Snead Engineers from the stage of sketch plans through to the taking of final bids will save time and prevent confusion for the architect and the owner or the building committee.

SNEAD BOOKSTACK TYPES

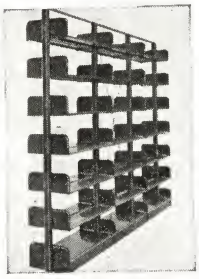


Fig. 1—Snead Free Standing Bracket Stack



Fig. 2—Snead Bracket Stack with Solid Ends

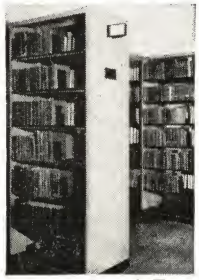


Fig. 3—Snead Type "SS" Standard Steel Stack

Steel Bracket Stacks

This is the least costly type and is made of die-formed sheet steel (*Fig. 1*). It has compact post uprights and projecting shelves. The shelves are provided with end brackets having hooks which engage slots in the tubular uprights or shelf supports and carry the shelves cantilever fashion. Each shelf is readily adjustable without removing the books and without the use of tools. The stack ranges can be installed either free standing or top braced—and can be expanded horizontally by adding more shelf compartments, or vertically by adding a deck floor and additional tiers. Full width ends (*Fig. 2*) and cover plates may be added to secure better protection from dust. Either solid or open bar shelves may be used.

Type "SS" Standard Steel Stacks

This type falls between the Bracket and the Standard Cast Iron Stack in cost and the arrangements for supporting and adjusting the shelves are similar to the latter. The Standard Steel Stack (*Fig. 3*) is supplied for either single or multi-story installations. All members are built on the unit principle with similar parts interchangeable and are delivered completely finished in baked enamel. They are light in weight and are easily handled and erected. Where used in multiple-tier construction the overhead loads are carried by structural steel columns concealed within the shelf supports.

Type "B" Standard Cast Iron Stacks

The Standard type of stack (*Fig. 4*) differs from the Bracket type in that the shelf supports of the former are the full width of the shelves and support the shelves at the four corners. This type is a development of the original stacks used in the Library of Congress. Type "A" and "B" differ in detail but are alike in principle. Type "A" is suitable for multi-tier stacks only, while Type "B" may also be used for single tier installations. The shelves are steel, either solid plate or of the special Snead Open Bar construction. Cast iron ends *(Fig. 5)* may be supplied of a special individual design and finished to harmonize with any decorative scheme.

Type "A" Cast Iron Stacks

In the Snead Type "A" stack (*Fig. 6*) the supporting columns are always made of structural steel shapes to which shelf adjustment strips, provided with horn locks, are attached to carry the rear corners of the adjustable shelves. The front corners of the adjustable shelves are carried by cast iron shelf supports having a rigid I-beam cross section and rows of lugs which engage the front corner pins of the shelves. These shelf supports are spaced away from the structural columns at the proper distance to carry 8, 10 or 12-inch shelves. The shelves, including the bottom fixed shelves, may be of either the special Snead Open Bar construction or the plain solid plate type.

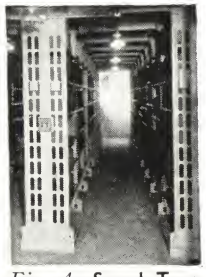


Fig. 4—Snead Type "B" Cast Iron Stack, Colonial End

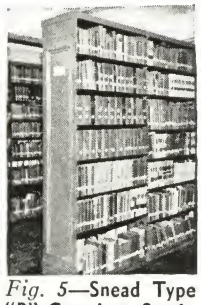


Fig. 5—Snead Type "B" Cast Iron Stack, Solid End

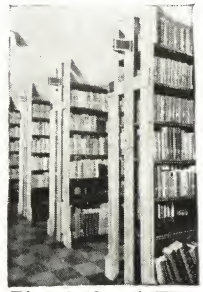
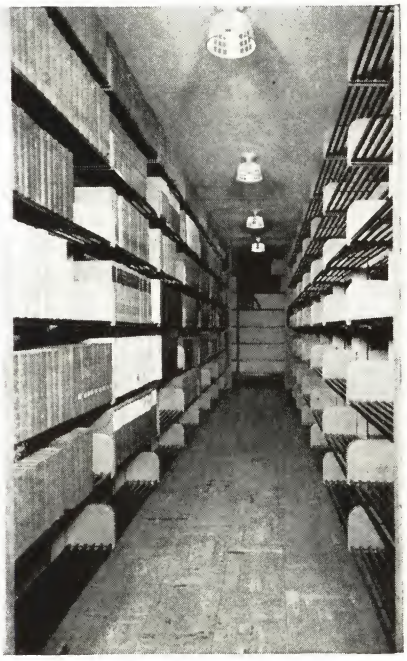


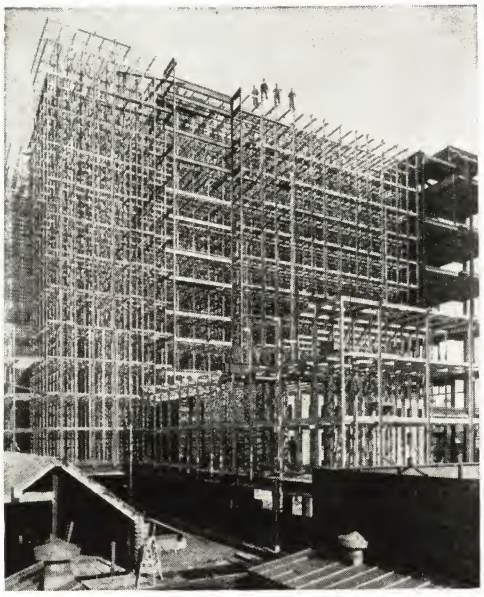
Fig. 6—Snead Type "A" Standard Cast Iron Stack

SNEAD CONTINUOUS DECK FLOORS FOR MULTI-TIER INSTALLATIONS

SNEAD & COMPANY pioneered the continuous deck floor, running under the stack ranges as well as in the aisle, so as to effectively seal one tier from another. This produced a series of plenum chambers from top to bottom of the stack installation and, for the first time, made possible effective heating, ventilating and air conditioning of the bookstack, which are today recognized as essential for proper book preservation. In our earliest installations continuous deck floors were built of steel frame and covered with marble or slate. We then introduced the reinforced concrete slab which has been widely employed for the past six years. Today there is a strong tendency toward continuous steel plate deck floors which gives promise of providing the most practical, attractive and generally desirable result yet attained.



Snead Tubular Bracket Stack with Hinged Open Bar Shelves and Continuous Deck Floor
University of Utah



Illustrating Snead Multi-tier Stack Construction which Supports Library Roof and Braces Side Walls
Sterling Memorial Library, Yale University



Snead Type "SS" Standard Stack with Continuous Deck Floor
Doheny Memorial Library, U.C.L.A.

ZIG-ZAG VENTILATION

Unusual economy and efficiency in library bookstack ventilation is offered by the exclusive Snead Zig-Zag Ventilating System, developed by Snead engineers and installed in the Sterling Law Library at Yale, Myron Taylor Hall at Cornell, and various other modern libraries. Filtered and humidified air lessens deterioration of books and eliminates a large amount of cleaning.

SNEAD STUDY CARRELLS



Snead Study Carrell with Cantilevered Desk and Shelves
University of Arkansas

The equipment of a Snead Carrell is quite simple and consists of a partition provided with reading desk, usually having a drawer, one or more shelves for holding books and an individually controlled light. Low cases containing folio shelving and having flat tops for consultation are frequently provided along the aisle side of a row of cases. Carrell equipment can be made interchangeable with book shelving so as to secure desirable elasticity for readjustment and expansion.

SNEAD BOOK DISTRIBUTORS

Designed to take books speedily and quietly from any stack level to the delivery desk for automatic discharge. It may be arranged to return books from the delivery desk to the stack levels, if desired.

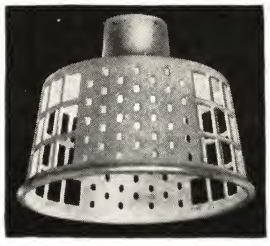
The distributor operates either horizontally or vertically, preferably in one plane. It is simple to operate and absolutely safe even in inexperienced hands. It travels quietly and smoothly, and requires no care except occasional lubrication.

The book carriers, attached to an endless chain, are largely made of polished aluminum to prevent any harm to the books whether carried loose or in containers. The keynote of the whole Snead Book Distributor design is simplicity and a minimum of maintenance attention.

SNEAD STACK AISLE LIGHTING

The Snead Stack Aisle Light Reflector has demonstrated its efficiency in light distribution and control in many libraries. Its superiority has been repeatedly proved where exacting competitive tests have been made with all kinds of stack lighting units. It is low in first cost, unbreakable, simple to install, requires practically no maintenance and permits the ready replacement of burned-out bulbs.

The lighting of a stack room is such an integral part of the bookstack installation that it is often advisable to include it in the bookstack contract.



Snead Stack Aisle Light Reflector

SNEAD ROLLING CASES

These are designed for use where compactness of storage is the prime essential. They usually afford from 50% to 100% more storage capacity than is feasible with the use of ordinary fixed shelving. Rolling Cases are special metal stack units mounted on large wide rollers. When books from these stacks are not needed, the cases stand in a solid bank protected from dust and handling. Each case is pulled out individually. Snead Rolling Cases require no overhead supports or floor tracks, thus saving expense and avoiding floor obstructions. The floor must be smooth, hard and level. The cases may be locked in position either individually or in banks.

If compact storage is not immediately required, but may be desirable in the future, Snead Convertible Stacks are recommended. They consist of unit cases so designed that they may be easily converted into rolling cases at small cost.



Snead Rolling Cases
Toronto Public Reference Library

SNEAD NEWSPAPER STACKS

Newspaper stacks of Snead Type "B" construction are built similarly to the bookstacks except that the uprights are wider and the shelves are set close together so as to hold large books lying flat. Newspaper stacks are also made of Type "A" construction.



Newspaper Stack, Type "B"
Sterling Memorial Library, Yale University

SNEAD STACK ACCESSORIES

SNEAD & COMPANY manufacture a wide variety of bookstack accessories. Further details on any of the items listed will be furnished on request.

- Range finders
- Card frames
- Book supports
- Shelf label holders
- Shelf back-stops
- Sliding reference shelves



Snead Standard Steel Stacks, Type "SS"
Doheny Memorial Library, University of Southern California

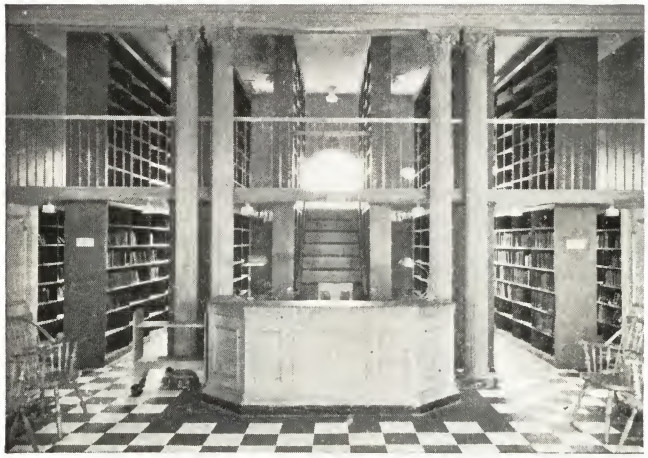
SNEAD EQUIPPED LIBRARIES THROUGHOUT THE WORLD

In practically every part of the civilized world, SNEAD & COMPANY has equipped libraries ranging in size from those having millions of volumes to the smallest private libraries for business and professional use.

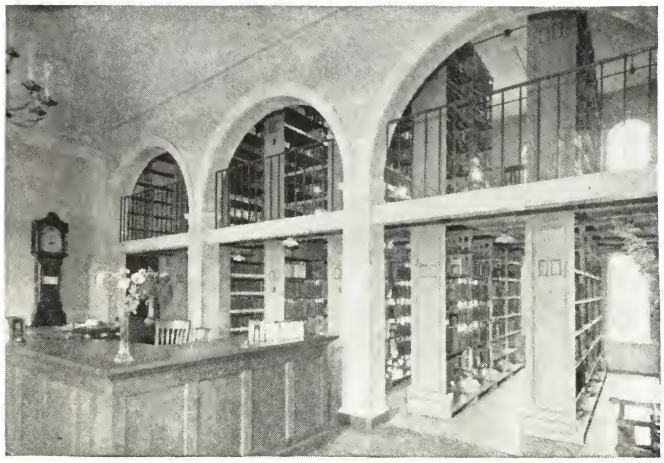
A list of local institutions for any country, state or city will be sent on request.



Snead Free Standing Bracket Stack Showing the Snead Continuous Deck Floor
Public Library, Glens Falls, N. Y.



Snead Standard Stack, Type "SS"
Public Library, Plainville, Conn.



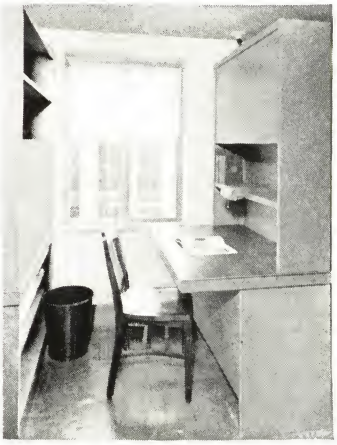
Snead Type "B" Stack with Solid Panel Ends
Public Library, Port Chester, N. Y.



Snead Standard Stack with Decorative Ends, Cornices and Bases
Reis Library, Alleghany College



Snead Type "B" Stack with Solid Panel Ends
Public Library, Great Neck, L. I., N. Y.



Snead Carrell Combining Free Standing Case and Desk



Delivery Desk Station, Snead Book Distributor
University of North Carolina

STACK DATA

Standard Dimensions for Multi-tier Installations

Height—7 ft. 6 in. measuring from top surface of deck floor to top surface of next deck floor.

Aisles—Main: 3 ft. to 5 ft. Range: 2 ft. 6 in. to 3 ft.

Ranges—Lengths: As required, preferably not over 30 ft., in even multiples of shelf length. Depths: *Single-faced*—8¼ in. to 12½ in. for books, 18⅞ in. and 22¾ in. for newspapers. *Double-faced*—16½ in. to 24¼ in. for books, 37 in. and 44¾ in. for newspapers.

Shelves—Lengths: As required, generally 3 ft., not to exceed 3 ft. 6 in. Depths: 8 in., 10 in. and 12 in. for books, 18 in. and 22 in. for newspapers.

Stairs—Straight runs: well length, 8 ft. to 9 ft., 12 to 13 risers; width, 2 ft. 6 in. or more. Return runs: well length, 6 ft. 8 in., 12 risers; width, 5 ft. or more.

Deck Floor—Marble, fine sand rubbed on all exposed surfaces, 1¼ in. thick. Stone substitutes are generally 1¼ in. thick. Reinforced concrete slabs, 3½ in. thick without floor covering. Floor covering: Asphaltum tile, Rubber-tile, cork, linoleum, etc. Total thickness of deck floor, for ordinary span, from top of slabs to bottom of supporting steel framing: 1¼ in. marble, slate or stone, 4⅝ in.; concrete, 3½ in. With the typical concrete deck floor construction no steel framing projecting below the deck ceiling is required.

Unit Stack Weights

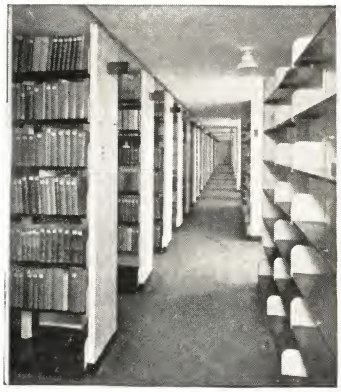
Books—25 lbs. per cu. ft. of ranges.

Stack Construction—8 lbs. per cu. ft. of ranges.

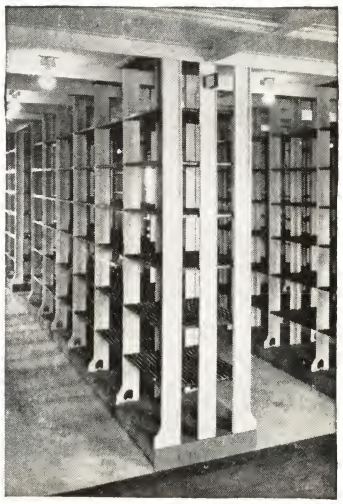
Steel Floor Framing—4 lbs. per sq. ft. of gross deck area.

Deck Flooring—3½-in. reinforced concrete slab, 40 lbs. per sq. ft. gross area. If with floor covering, add 3 lbs. per sq. ft. gross area. 1¼-in. marble or stone, 18 lbs. per sq. ft. aisle area.

Live Loads—100 lbs. per sq. ft. of aisle area to avoid vibration. For column loads, assume 40 lbs. per sq. ft. of aisle area for live load and reduce the figure 5% for each deck below the top deck.



Snead Bracket Stack with Continuous Deck Floor
Sterling Law Library, Yale University



Snead Type "A" Stack
Library of Congress, Washington, D. C.

DATA REQUIRED FOR PRELIMINARY DRAWINGS AND QUOTATIONS

1. Name and address of Library.
2. Reply to the attention of.
3. Kind of books to be housed.
4. Number of volumes (a) Present number. (b) Future maximum.
5. Dimensions of stack room (a) Length. (b) Width. (c) Height.
6. Type of stack preferred
   (a) Bracket type: 1. Free Standing. 2. Top braced.
   (b) Standard types: 1. Type "A." 2. Type "B." 3. Sheet Steel Standard (Type "SS")
7. Do you want a book distributor?
8. Send architect's plans or a pencil sketch showing floor and wall construction and any interference from radiators, pipes, wall cabinets, etc.

HOLMES PRODUCTS COMPANY

Manufacturers of Concealed Beds
21 East Van Buren Street, CHICAGO, ILL.
FACTORY: WOODSTOCK, ILL.

TYPES OF HOLMES BEDS—SPACE SAVERS IN HOMES, APARTMENTS, INSTITUTIONS

ROLLER TYPE—In which the bed folds vertically and can be rolled in any direction and stored in a small closet space. When in use, it can be positioned in any convenient place in the room without conflict with the furniture arrangement.

PIV-A-DOR BED—Folds vertically and pivoted on a closet door jamb and swings into the closet entirely out of sight.

RECESS MODEL No. 7-11—Fixed against a wall in a recess, it folds vertically into small space covered by double swing doors. Where a closet is not available, it may be enclosed with a drapery canopy free standing.

PIVOT RECESS BED—Folding vertically into a recess, the bed is attached to an oscillating arm which throws the bed out clear of the alcove at the same time making it possible to position the bed at any desired angle in relation to the room walls without conflict with the furniture arrangement.

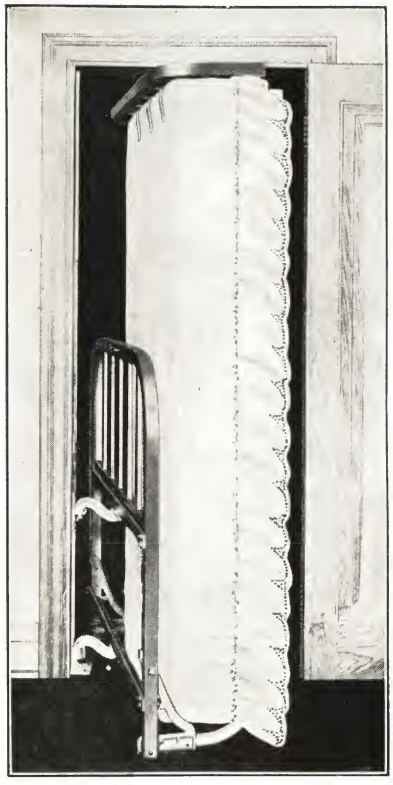
MANTEL BED—Folds vertically sidewise into a low, bookcase furniture type cabinet or recess.

ROLL-OUT RECESS—Folds vertically into a recess but when lowered automatically rolls forward.

PIVOT TYPE—Most economical of space of pivot type installations. It folds vertically and pivots on the center of one of a pair of closet doors. Twin beds are adapted to wide single or narrow triple door arrangement.

NOTE: *Catalog on Types Not Illustrated Sent on Request*

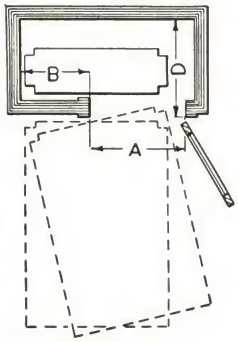
HOLMES PIV-A-DOR BED MODEL No. 55



The One-piece Head Eliminates Much Mechanism

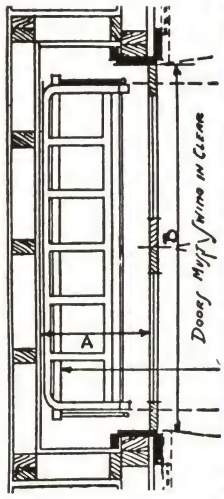
The weight of the Holmes Piv-A-Dor Concealed Bed is supported by a single pivot *in the floor* and swings freely at the jamb. It is so perfectly balanced and so well provided with strong bearings that merely the touch of a finger will easily swing it around through a single door opening.

All the weight is carried on the floor, a form of construction that insures long life.



MINIMUM DOOR AND CLOSET SIZES				
BED	A	B	D	HEIGHT
FULL SIZE BED.....	3'- 0"	2'-4"	3'- 0"	6'-8"
THREE-QUARTER BED.	2'-10"	2'-1"	2'-10"	6'-8"
SINGLE BED	2'- 6"	1'-7"	2'- 6"	6'-8"
SPECIFY END DESIGNS C, 5-F, OR B				

HOLMES RECESS BED MODEL No. 7-11





This is the standard type of recess or wall bed and requires less space for concealment than any model and has fewer working parts. They are fastened to the floor.

The Holmes Standard Recess Bed is ideal for installation in remodeled buildings where it is not possible to build special closets or recesses in the wall. The closet can be built out into the room with two doors that close and conceal the bed.

The bed is fastened directly to the floor by brackets on each side and a canopy rod can be attached to the bed or wall from which drapes or curtains can be hung and completely conceal the bed when a closet is not available.

MINIMUM DOOR AND CLOSET SIZES			
BED	A	B	HEIGHT
FULL SIZE BED.....	1'-5"	4'-10"	6'-8"
THREE-QUARTER BED..	1'-5"	4'- 4"	6'-8"
SINGLE BED	1'-5"	3'- 7"	6'-8"
SPECIFY END DESIGNS C, 5-F, OR B			

Full Coil Springs Are Standard on All Holmes Beds

HOLMES ROLLER TYPE BED—MODEL No. 39

The Original Roller Bed



The Holmes Roller Bed not only saves floor space, but is rolled about so easily that it can be kept in any part of the home or hotel. It can be rolled into a closet, moved into a corner and concealed by a canopy or drapes, or it can be rolled into another room or into a hall where there is space for concealment. It can be placed wherever the air or sunshine is best. Thus a sun room is converted into a sleeping porch by rolling the bed out on it. The bedding is easily aired the same way.

The Holmes Roller Bed is complete with head and automatic foot end, and equipped with special highly resilient full coil springs.

A specially designed safeguard bumper prevents any possibility of damage to furniture, walls, or woodwork. Specially designed, highly polished, perfectly balanced 4½-inch rollers operate smoothly and easily. They are fitted with one set of roller bearings and two sets of thrust ball bearings. These rollers do not mar floors, nor will they damage carpets or rugs.

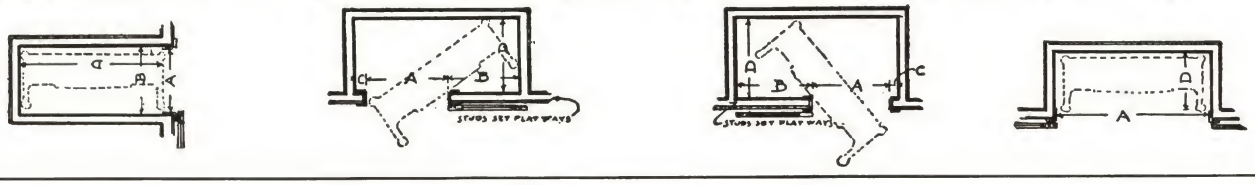
An exclusive feature is the Holmes patented automatic lock which prevents the bed from "jack-knifing" or folding over on top of the sleeping surface when the bed is down.

If no closet space is available, we furnish canopy roads, attached to the bed or to the wall, from which drapes or curtains can be hung. A double rod is used when a valance is desired to conceal the rod when the drapes are pulled to one side, to allow the bed to be lowered.

The Holmes Roller Bed is counterbalanced to facilitate fingertip closing and opening and has less mechanism, such as springs, rods, etc. than similar beds on the market—this assures trouble-free long life.

MINIMUM DOOR AND CLOSET DIMENSIONS

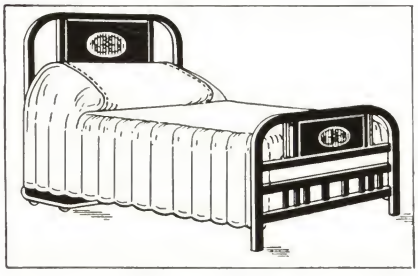
DOOR	FULL SIZE BED			THREE-QUARTER BED			SINGLE BED		
A	B	C	D	B	C	D	B	C	D
2'- 2"x6'-8"	2'- 4"		5'- 0"	2'- 4"		4'- 6"	2'- 4"		4'-0"
2'- 4"x6'-8"	2'-11"	5"	3'- 2"	2'- 6"	5"	2'-11"	2'- 1"	5"	2'-8"
2'- 6"x6'-8"	2'- 9"	5"	2'-11"	2'- 4"	5"	2'- 9"	1'-11"	5"	2'-6"
2'- 8"x6'-8"	2'- 7"	5"	2'-10"	2'- 2"	5"	2'- 7"	1'- 9"	5"	2'-4"
2'-10"x6'-8"	2'- 5"	5"	2'- 8"	2'- 0"	5"	2'- 6"	1'- 7"	5"	2'-3"
3'- 0"x6'-8"	2'- 3'	5"	2'- 6"	1'-10"	5"	2'- 5"	1'- 5"	5"	2'-3"
2—2'- 0"x6'-8"									2'-0"
2—2'- 4"x6'-8"						2 - 0"			2'-0"
2—2'- 6"x6'-8"			2'- 0"			2 - 0'			2'-0"



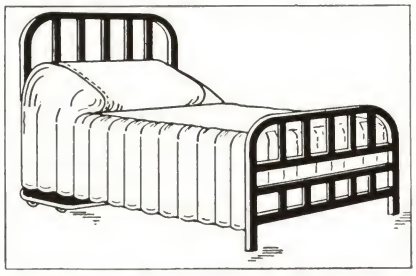
SPECIFY END DESIGNS C, 5-F, OR B

INTERCHANGEABLE STANDARD BED ENDS

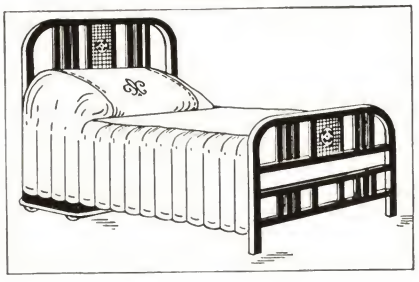
DESIGN C



DESIGN 5-F



DESIGN B



Full Coil Springs Are Standard on All Holmes Beds

MIDWEST CONCEALED BED CORPORATION

Manufacturers of All Types of Concealed Bed Equipment

ATLANTA OFFICE
Percy R. Baker,
1302 Piedmont Avenue

Main Office and Plant, EVANSVILLE, IND.
PHILADELPHIA OFFICE, Jos. M. Baker, 1700 Walnut Street
AGENTS IN PRINCIPAL CITIES

PACIFIC COAST PLANT
L. A. Wall Bed Co.,
LOS ANGELES, CALIF.

FEATURES OF MIDWEST CONCEALED BEDS

The Midwest Line of Concealed beds carries the prestige and refinement of twenty-four years of continuous research and development. These pages illustrate and describe a few of the many features developed by this company during its long experience in this field to add to the comfort of concealed beds.

Bed Ends—Art line tubing 1¾ ins. diameter furnished in variety of designs and finishes.

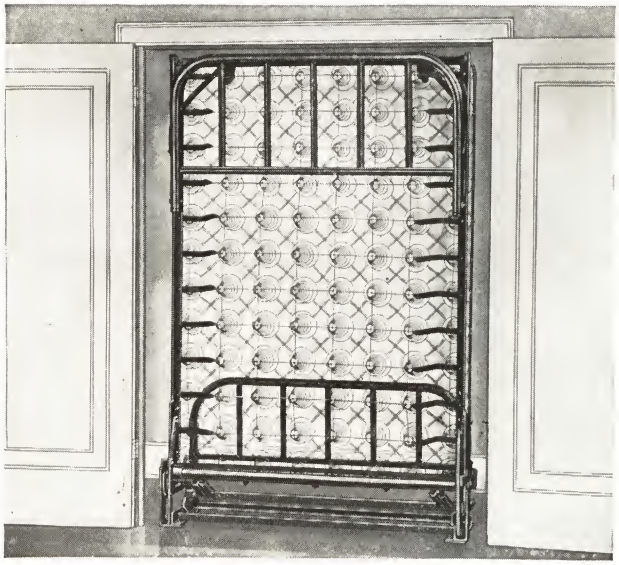
Spring Equipment—Springs are made of high tempered Premier wire tied together with high tempered Premier helicals with ample depth of coils to insure maximum comfort.

Finishes—Standard finishes: Wood brown and hand grained Walnut. Our hand grained wood finishes are beautiful reproductions of natural woods. These artistic finishes represent the handwork of experts. We produce an unsurpassed finish, both in appearance and durability.

Midwest Concealed beds are unusually attractive and durable. In addition to the installations described we manufacture many other distinctly different types that will meet practically any peculiar condition that may arise in the planning of a new building or in the remodeling of an old one.

Catalogue—And full details of the complete Midwest line on application to factory or nearest representative.

COME-OUT RECESS HINGED DOOR TYPE



Come-Out Recess Installation No. 36
Showing bed in recess



Come-Out Recess Installation No. 36
Showing bed lowered with head end out of enclosure

Installation No. 36

Bed is attached to floor in a recess 20 in. in depth from inside plaster line to face of doors. Bed as it is lowered automatically moves forward bringing head portion out of enclosure. Folding feature of head end retains pillows when bed is in upright position. *The come-out recess type is a decided improvement over the stationary recess bed with head portion remaining back in recess.*

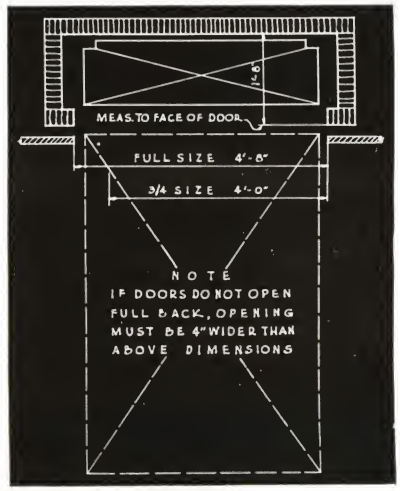
For full size beds the minimum width of opening may be 4 ft. 8 in., providing both doors open full back, otherwise the standard width of 5 ft. 0 in. is recommended. Minimum opening height 6 ft. 8½ in.

For ¾ size beds, opening may be 6 in. less than standard.

For twin size beds, opening may be 1 ft. 4 in. less than standard.

Recess is concealed with a pair of hinged doors. Door height may vary from 6 ft. 8 in. to 7 ft. 0 in.

Note: This installation may be accommodated in a minimum closet depth of 18 in. from inside plaster line to face of doors providing door thickness does not exceed 1⅜ in. and back base board is omitted or set flush with plaster line.



Detail Showing Measurements

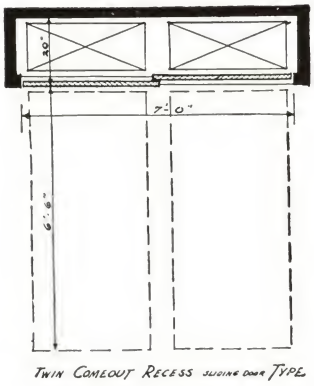
MIDWEST TWIN COME-OUT RECESS BEDS, ROLLING DOOR TYPE

A method of twin bed concealment designed especially for use where only minimum space is available. A special feature of this installation is that the doors may be closed while the beds are in use. Although the space required is small these beds embody all the sturdy features and unusual sleeping comfort of the entire Midwest Line.

Minimum closet depth 20 in. Size of opening 7x7 ft. with two sliding doors each 3 ft. 6½ in. x 7 ft.



Twin Come-Out Recess Installation No. 35, with Beds Concealed



TWIN COMEOUT RECESS SLIDING DOOR TYPE



Twin Come-Out Recess Installation No. 35, Beds Lowered, Recess Closed

MIDWEST PORTABLE CLOSET BEDS—ROLLER TYPE

A scientifically, all-steel-constructed bed designed to occupy a minimum of space, which, being free of all cumbersome mechanism, can be rolled from concealment to desired position in room with but slight effort.

Individual Features—Circular carriage or base construction (no sharp corners) only 20½ in. wide; all contact surfaces fully protected with felt buffer strip.

Exceptional Balance—Solely by tension springs (eliminating excessive weight existing in counterbalance types).

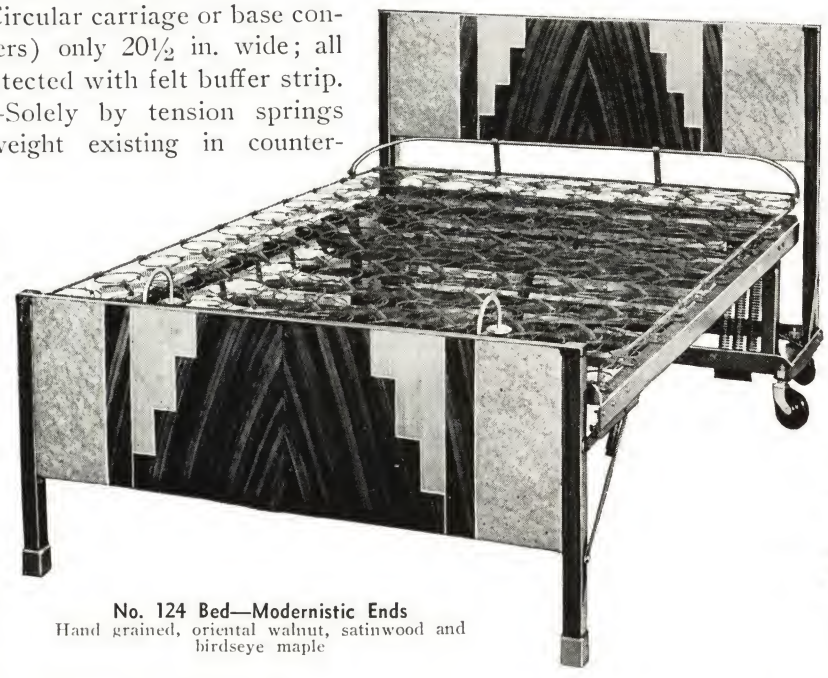
Automatically Controlled Center Swing Leg—A positive guarantee against jackknifing or folding over of head end when bed is in lowered position.

Ball Bearing Casters—Faultless ball bearing "rubberex" casters, 4-in. diameter, insure easy rolling.

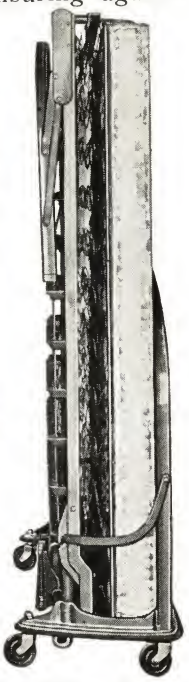
Spring Frames—When raised or lowered, swing well within back line of carriage, insuring against defacement of walls or interior trim.

Over-all dimensions of carriage or base of bed

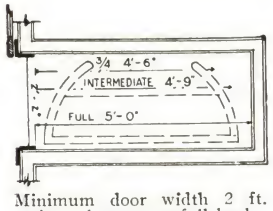
Size bed	Length	Width
Full size.....	4 ft. 10 in.	20½ in.
Intermediate..	4 ft. 7 in.	20½ in.
Three-quarter.	4 ft. 4 in.	20½ in.
Twin.....	3 ft. 7 in.	20½ in.



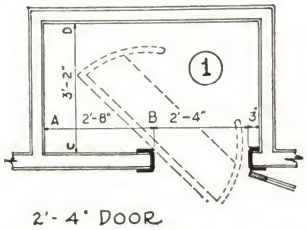
No. 124 Bed—Modernistic Ends
Hand grained, oriental walnut, satinwood and birdseye maple



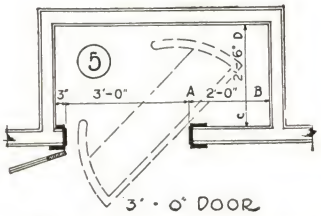
Midwest Bed
Upright position, showing narrow base only 20½ in. wide



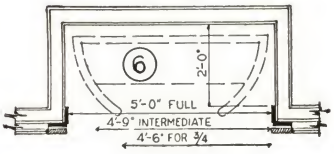
Minimum door width 2 ft. where door opens full back



2'-4" DOOR
Minimum depth of closet in combination with a 2 ft. 4-in. door



3'-0" DOOR
Minimum depth of closet in combination with a 3-ft. door



TWO 2'-6" FRENCH DOORS
One pair of 2 ft. 6-in. doors, minimum depth of closet 2 ft.

Note: All dimensions are based on full size beds. On Plans 1 and 5 for intermediate size bed, closet can be 3 ins. less between A and B and 1½ in. less between C and D. For three-quarter size bed, closet can be 6 in. less between A and B and 3 in. less between C and D. All doors 6 ft. 8 in. high.

MURPHY DOOR BED COMPANY

19 West 44th St. NEW YORK, N. Y.
710 North Wells Street CHICAGO, ILL.
315 North Tenth St. ST. LOUIS, MO.
2459 Grand River Ave. DETROIT, MICH.
OFFICES AND DISPLAY ROOMS IN PRINCIPAL CITIES

A Complete New Line

Pioneer and leader in Concealed Beds, Murphy offers for 1938, a complete new line. Retaining the many features which have made these beds famous in more than a quarter-century of trouble-free service, plus tested improvements, there is now available a selection of smart styles to fit modern buildings.

Two types of Pivot Beds, offset pivot and two-door pivot, two types of Recess Beds and the remarkable Murphy Roller Bed comprise an array with which to meet almost any requirement.

Standard size mattresses are used. Improved ribbon fabric, single or double deck coil or box springs are furnished as desired.

Slumber Luxury at Night

MURPHY IN-A-DOR BEDS

Out of the Way by Day

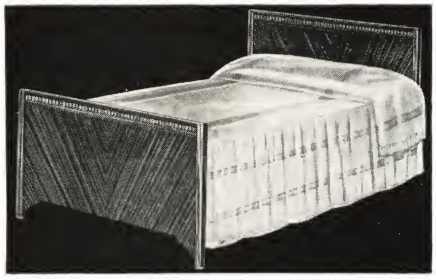
Technical Service for Architects, Builders and Owners

Murphy offices are eager to work with architects, builders and owners in devising the most satisfactory methods for utilizing Murphy products in every type of building.

This service does not presume to trespass upon the field of the architect or builder. It is offered in the belief that accumulated experience of other architects and builders, recorded in the extensive Murphy files, must be of great value.

Murphy technical service involves neither charge or obligation. Write the nearest Murphy office for literature and for suggestions before completing building plans.

Smartness—Utility in These 1938 Murphy Beds



Moderne—No. 11

All "A" Type Murphy Beds are available with any of the new ends shown here. "B" Type Beds may be had only with Styles Nos. 1 and 5.

Rich wood facsimile of unusual fidelity give new beauty to Murphy Beds, beauty that reveals itself when these comfortable beds are drawn down to the floor for use.



Burl Panel—No. 12



Graceline 5 Filler—No. 1 | Jenny Lind—No. 6 | Framed Panel—No. 5 (on "B" Beds Only)

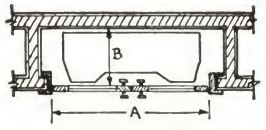
THE IMPROVED MURPHY ROLLER BEDS



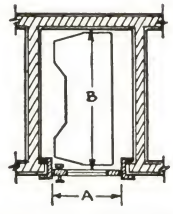
Scientifically designed with minimum number of working parts. Special 4-in. casters with ball bearings on both shaft and axle. Improved locking device holds foot end firmly in position. Base carriage only 23 in. deep when bed is in vertical position. Heavy bumper material around base prevents marring walls or furniture.

May be had in all styles of ends and with either ribbon fabric or coil springs.

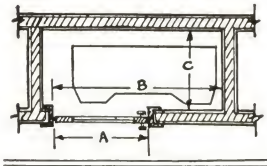
Special spring bottom may be had to meet unusual low-door conditions. Standard sizes are for use with 6 ft. 8 in. doors.



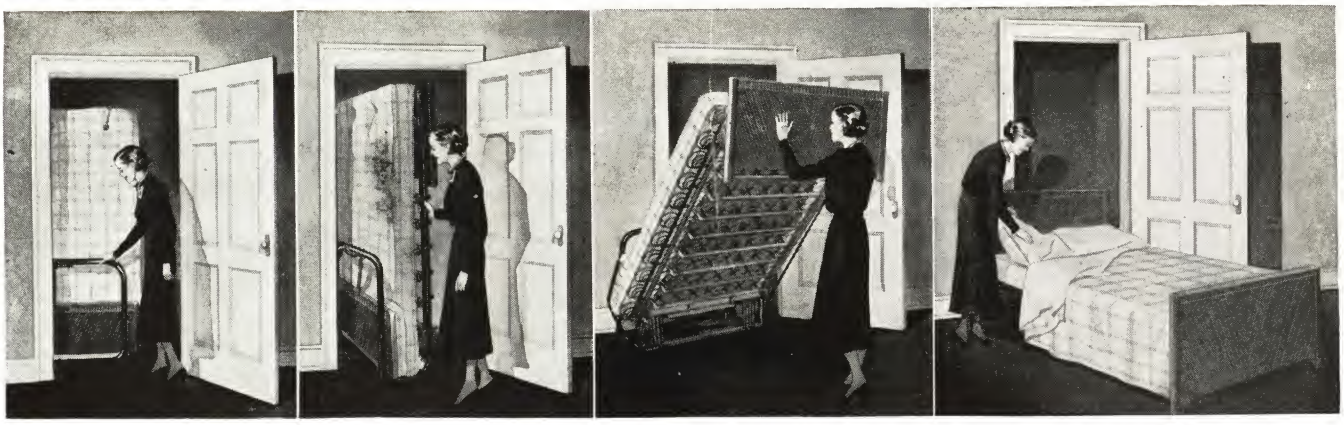
Bed	A	B
4′ 6″	4′ 8″	24″
4′ 0″	4′ 4″	24″
3′ 3″	3′ 8″	24″



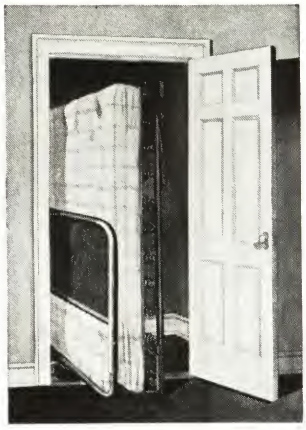
Bed	A	B
4′ 6″	24″	55″
4′ 0″	24″	51″
3′ 3″	24″	43″



Bed	Door	B	C	Door	B	C
4′ 6″	30″	57″	32″	32″	57″	30″
4′ 0″	30″	54″	30″	32″	54″	28″
3′ 3″	30″	45″	25″	32″	45″	24″



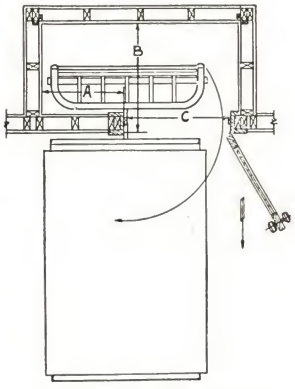
THE FAMOUS MURPHY PIVOT BEDS — NEW MODELS



B Type Pivot Bed
Model 35-2-46

Type A, shown above, was the pioneer. Today, with its refinements, it remains the outstanding concealed bed. This bed is "lowered at the touch of the hand", even by a child, to solid rest upon the floor. At all stages in lowering, the bed remains in perfect balance. It cannot drop or move upward. Available in any of the four standard styles of ends as shown on preceding page, in 39-in. twin, 48- or 54-in. widths. May be had with ribbon fabric, single or double deck coil or box springs. Standard mattresses used.

Type B, shown at the left, is a dependable pivot bed at low cost. While lacking some of the refinements of Type A, it is as easily and safely handled, is equally long-lived, free from any maintenance troubles. Furnished only with Style 1 and Style 5 ends, in brown walnut finish.



TYPICAL INSTALLATION

Bed Ft.	Bed In.	A Ft.	A In.	B Ft.	B In.	C Ft.	C In.
4	6	2	4	3		3	
4	0	2	1	2	10	2	10
3	3	1	9	2	8	2	8



Twin Murphy Pivot Beds

Twin Murphy Beds are available in any of the smart styles of ends shown on preceding page. This illustration shows twin beds brought through one opening with French doors. Optional arrangements permit beds emerging through separate doors. Installation can be made to permit use of one twin bed and one full-sized bed.

The complete Murphy-In-A-Dor Bed catalog shows all sorts of installations for the several types of beds. Write for it.



Murphy Recess Bed — Type A

Most simple and compact concealed bed installation. Fastened to floor in shallow (19 in.) recess. It lowers to floor; does not pivot. Head end is almost in line with recess opening; sleeper's head is out of the recess. May be had in all sizes with any of the ends shown on opposite page.

RECESS DIMENSIONS

4 ft. 6 in. bed	Recess, 5 ft. x 19 in.
4 ft. 0 in. bed	Recess, 4 ft. 6 in. x 19 in.
3 ft. 3 in. bed	Recess, 3 ft. 8 in. x 19 in.

ASHER AND BORETZ, INC.

900 Broadway
NEW YORK, N. Y.

Telephone
ALgonquin 4-8989

ARTIFICIAL LEATHERS FOR FURNITURE AND INTERIOR DECORATION

For those clients who look to you for advice on wall treatment and furnishings, have samples and details about Asher & Boretz pyroxylin-coated fabrics ready for handy reference.

The wide range of brilliant colors that these artificial leathers offer makes possible beautiful and unusual color combinations. A-B super pyroxylin-coated fabrics will not crack or craze — are both water and dustproof, will wear longer, "stand up" under the hardest wear.

May we prove to you that when you are specifying artificial leather there is no "equivalent" for Asher & Boretz pyroxylin-coated fabrics? Sample Books and details will be promptly furnished on request. Write today.

moleather

Hundreds of architects have found they get more striking effects, better service, longer wear and more attractive dining room chairs, bar and terrace furniture and fabrics for wall treatment by insisting upon colorful MOLEATHER. The wide range of colors available makes it possible to match any color scheme harmoniously. MOLEATHER looks better — wears longer — is crackproof — waterproof.

Save for your clients by specifying Genuine A-B MOLEATHER, the *odorless,* water and dustproof artificial leather that won't crack, craze or fade.



SHEENTEX

SHEENTEX is particularly well-adapted for porch and terrace furniture. It is waterproof, washable, *has no odor,* won't crack, peel or crock. It will please clients because it wears longer—"stands up" better. It pleases architects because SHEENTEX's wider range of fast, uniform colors not only make designs outstanding, but harmonizes beautifully with every decorative scheme.

Raw-Tex

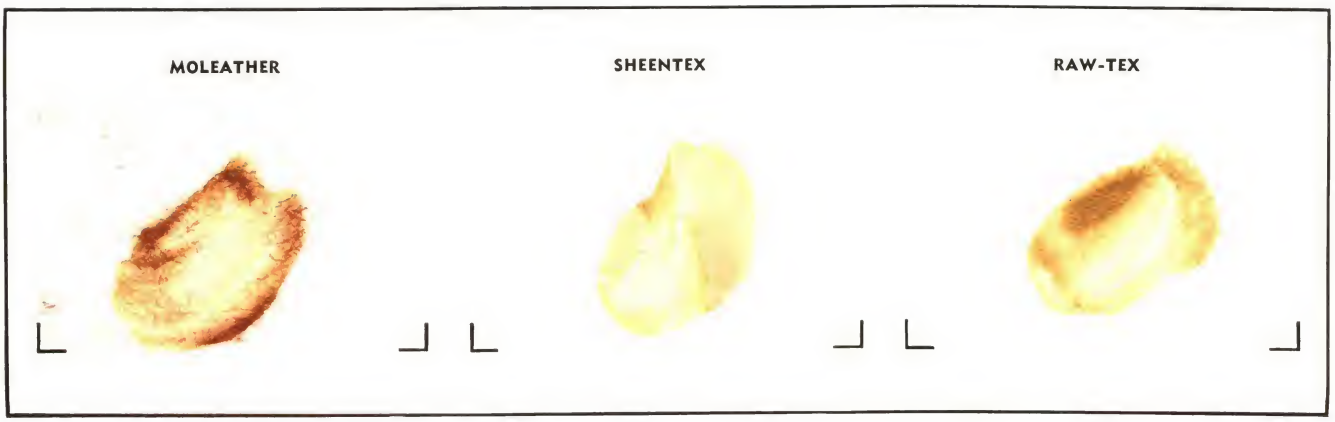
This new, exclusive A-B pyroxylin-coated fabric looks, feels, wears like leather.

Has the finish irregularities and surface markings that distinguish highest quality, antique cowhide.

Is crackproof, washable, waterproof.

Is available in so many fast, brilliant colors that almost any decorative combination is possible.

"Works" better, cuts better, can be easily, beautifully moulded to any design.



BLAW-KNOX SPRINKLER DIVISION

1525 Pennsylvania Avenue
PITTSBURGH, PA.

BLAW-KNOX AUTOMATIC SPRINKLER SYSTEMS

Carefully Planned

Blaw-Knox Automatic Sprinkler Systems are carefully planned to fit the fire hazards of the particular plant. Experienced engineers make a detailed study of each building to be protected. Efficiency and economy in the original installation and low maintenance costs are given careful consideration.

BLAW-KNOX SPRINKLER DIVISION offers full co-operation in making estimates, specifications and Underwriters' approved layouts without obligation.

No matter what the size or type of the plant, BLAW-KNOX SPRINKLER DIVISION invites an opportunity to submit a plan and estimate for a Blaw-Knox Sprinkler System that is guaranteed not only to meet all insurance requirements, but to be scientifically and correctly engineered into your plant.

A well equipped plant, strategically located with railroad sidings right in the plant, provides excellent shipping facilities to any point. All equipment is factory assembled reducing field assembly to a minimum.

Experienced erection crews install Blaw-Knox Sprinkler Systems without interference with plant operations.

Wet Pipe System

This system is used in heated buildings and has the water in the pipes at all times. When fire opens the sprinkler head the water immediately sprays over the fire and extinguishes it.

Dry Pipe System

In unheated buildings subject to freezing temperatures, the piping is filled with compressed air. A dry pipe valve at the base of the system holds the water back. When fire opens the sprinkler head the air is released, the *dry pipe* valve trips and water sprays over the fire and extinguishes it.

Sprinkler Head

The Star Sprinkler Head used in Blaw-Knox Automatic Sprinkler Systems has for its operating element the tried and tested fusible metal. The design of the strut projecting out over the base permits the ascending heat currents to start softening the metal without waiting for the heat to bank down from the ceiling. This assures quick and dependable operation of the sprinkler head. The design of the deflector makes it possible to install the sprinkler in either upright or pendant position.



An Example of Concealed Piping in Connection with a Large Blaw-Knox Sprinkler Installation in the Office and Plant of a Prominent Pittsburgh Newspaper

Blaw-Knox Sprinkler Systems use exclusively the nationally known and universally accepted devices manufactured by the Star Sprinkler Corporation—such as automatic sprinkler heads, alarm valves, dry pipe valves and other equipment.

A FEW REPRESENTATIVE FIRMS USING STAR DEVICES

Cutler-Hammer Company
Tubize Artificial Silk Co.
Warner Bros. Picture Co.
American Car & Foundry Company
Hershey Chocolate Corporation
Ford Motor Company
Brooks Bros. Department Store
Bush Brothers and Company
Industrial Rayon Corporation
Norfolk & Western Railway Co.
P. Lorillard Tobacco Company
Standard Sanitary Mfg. Co.
Mergenthaler Linotype Company
Harrison Radiator Division, General Motors
Commonwealth-Edison Company
Fisher Brothers
Fowler Packing Company
Owens-Illinois Glass Corp.
Shaw-Walker Company

ROCKWOOD SPRINKLER CO.

WORCESTER, MASS.

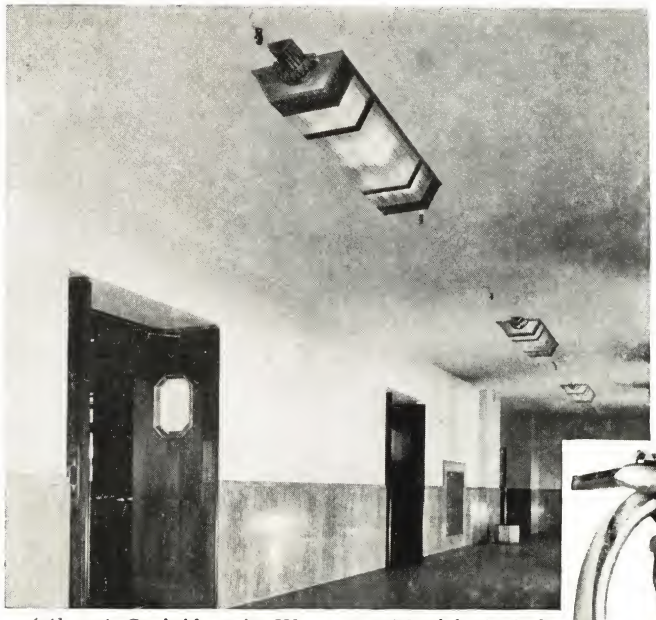
BRANCH OFFICES AND PLANTS

ATLANTA, GA.
AUSTIN, TEX.
BOSTON, MASS.
BUFFALO, N. Y.
CHARLOTTE, N. C.
CHICAGO, ILL.
CINCINNATI, OHIO
DETROIT, MICH.
GRAND RAPIDS, MICH.
INDIANAPOLIS, IND.
MEMPHIS, TENN.
MILWAUKEE, WIS.
MINNEAPOLIS, MINN.
NEW ORLEANS, LA.
NEW YORK, N. Y.
PHILADELPHIA, PA.
ST. LOUIS, MO.
ST. PAUL, MINN.
SAN FRANCISCO, CAL.

Sole Agents for Canada: WORCESTER FIRE EXTINGUISHER CO., LTD., Montreal and Toronto

For Automatic Fire Control for Air Conditioning Systems, see File Index

AUTOMATIC SPRINKLER SYSTEMS FOR ATTRACTIVE BUILDINGS



(Above) Sprinklers in Worcester Municipal Auditorium—installed when building was being erected. Note how piping has been concealed above ceiling

(Below) Here sprinklers were installed attractively in an existing building—Hotel Balsams, Dixville Notch, N. H. New Rockwood ***Sidewall*** *Type Sprinkler Heads keep ceilings clear and permit piping to be concealed. Nineteen different shades of paint blend exposed fittings with woodwork and walls*



New Rockwood ***Sidewall*** *Sprinkler Head — designed for installation along walls or beams to keep ceiling clear of piping. Heads furnished in attractive modern and antique finishes*



(Above) Sprinklers were installed in this room in Wellesley College long after the building was built. Sprinkler heads, finished in antique bronze, have been installed inconspicuously, with piping concealed behind and painted to match beams

(Below) Chapel at Regis College, Weston, Mass. Another existing building skillfully protected against fire by Rockwood engineers without detracting from the character of the surroundings

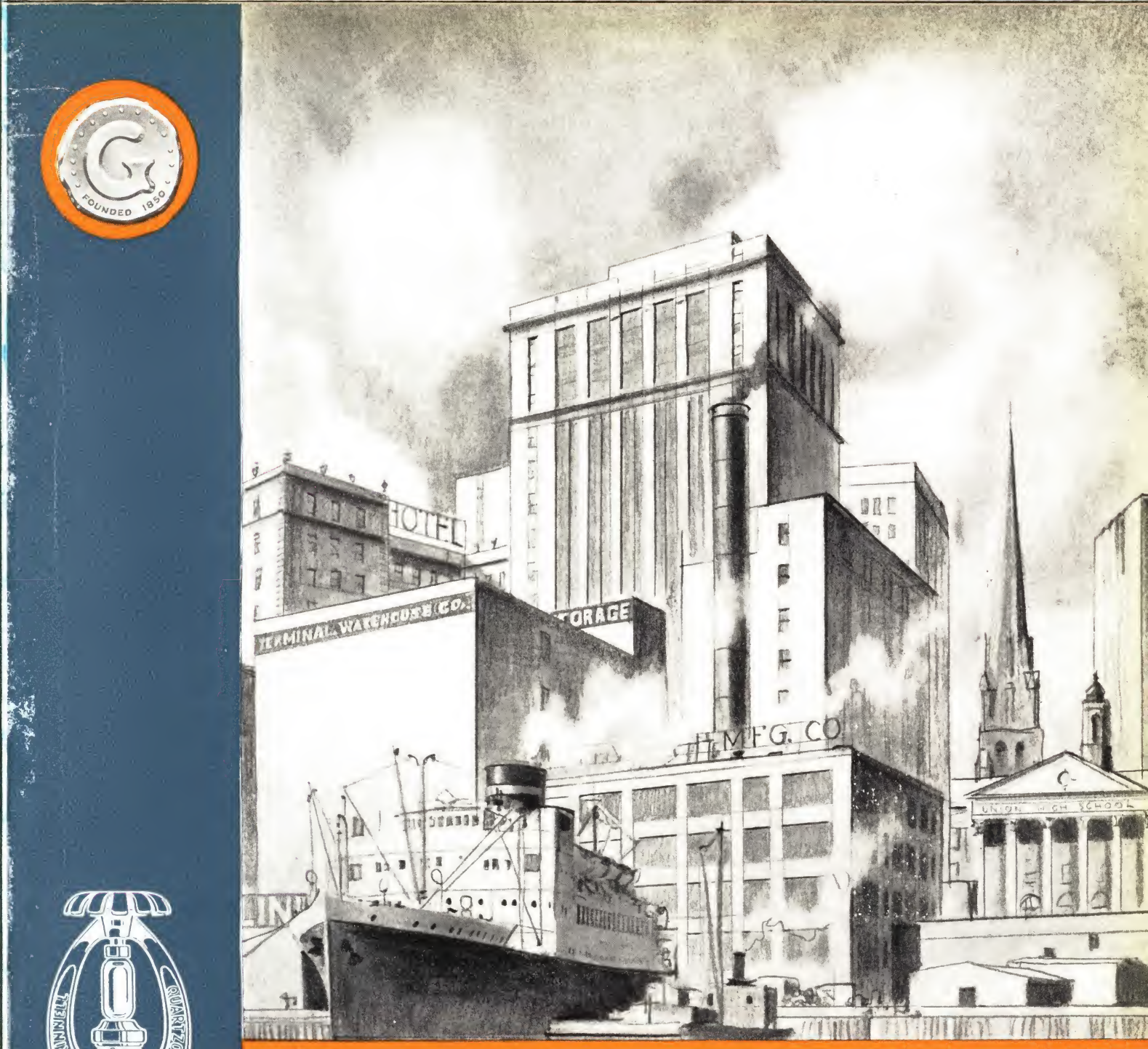




The four views above reflect Rockwood's ability to engineer and install automatic sprinkler systems in schools, colleges, churches, hospitals, auditoriums, institutions, restaurants, hotels and other such buildings having attractive interiors.

Our systems are carefully engineered first to safeguard the lives of the occupants and the permanence of the building itself against fire. Particular care is then taken to make the installation as inconspicuous as possible by concealing piping and blending fittings and sprinkler heads with the interior decorative scheme.

This requires special engineering skill entirely different from that employed in making ordinary sprinkler installations. Our trained engineers located in the branch offices listed above will be glad to assist you in laying out attractive sprinkler installations, providing specifications, estimates and insurance information. Write, wire or telephone our nearest office—no obligation.





GRINNELL

AUTOMATIC FIRE PROTECTION SYSTEMS



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HOW TO PROTECT YOUR PROPERTY FROM





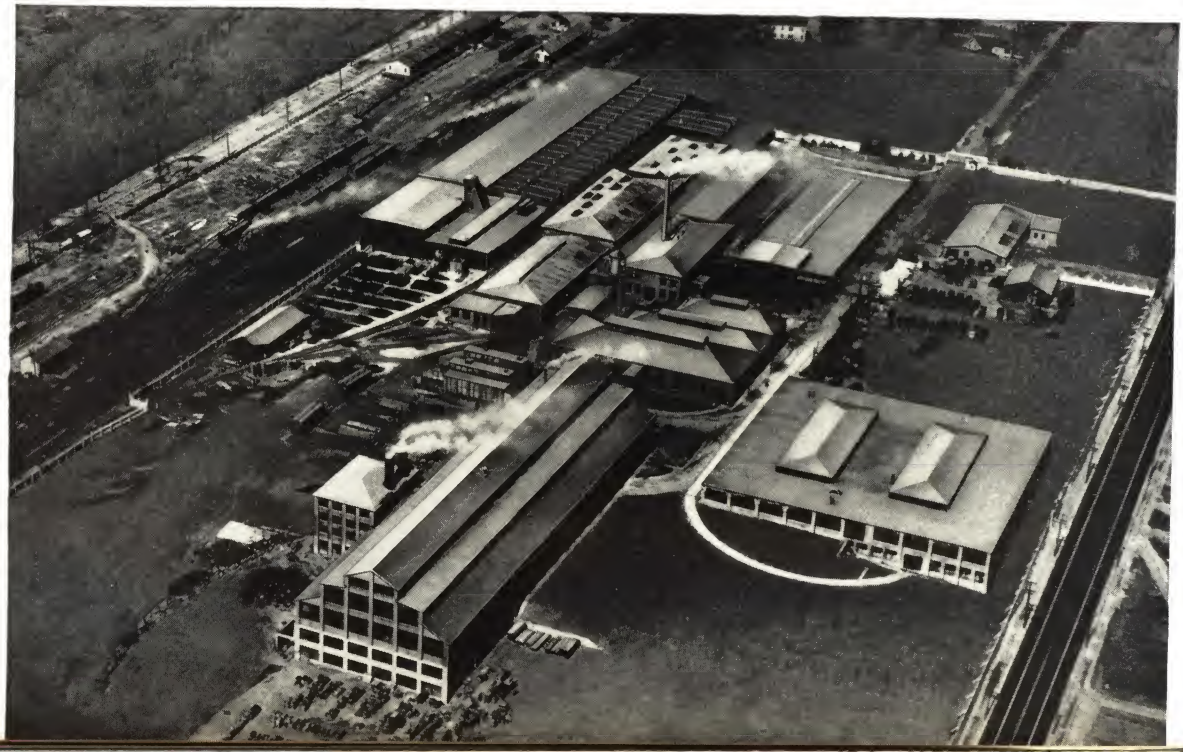
EVER-CHANGING INDUSTRIAL ACTIVITY

Intensifies Fire Hazards

EVER-CHANGING manufacturing methods and processes bring with them new fire hazards. Greater concentration of equipment . . . faster production . . . stocks of highly inflammable synthetic materials . . . warehouses filled with raw or finished materials . . . air conditioning, ventilating and pneumatic collecting and conveying installations, with their intricate duct systems expanding to almost all types of occupancies — all of these multiply the possibilities of fire.

Many executives, entrusted with the safety of life and property, have never experienced a disastrous fire. Too often, their good fortune has built a false sense of security against an ever-lurking menace. They look upon their investment in fireproofing and the annual payment of large insurance premiums as an adequate safeguard. Or, as yesterday's victims of fire once felt, they may feel satisfied that it cannot happen to them.

What would happen if a fire should break out suddenly in your plant or property and, unnoticed and unchecked, gain headway during those first fateful minutes? Can you depend upon the human element to prevent its spread and destruction? *Statistics prove very definitely that you cannot.* . . .



GRINNELL

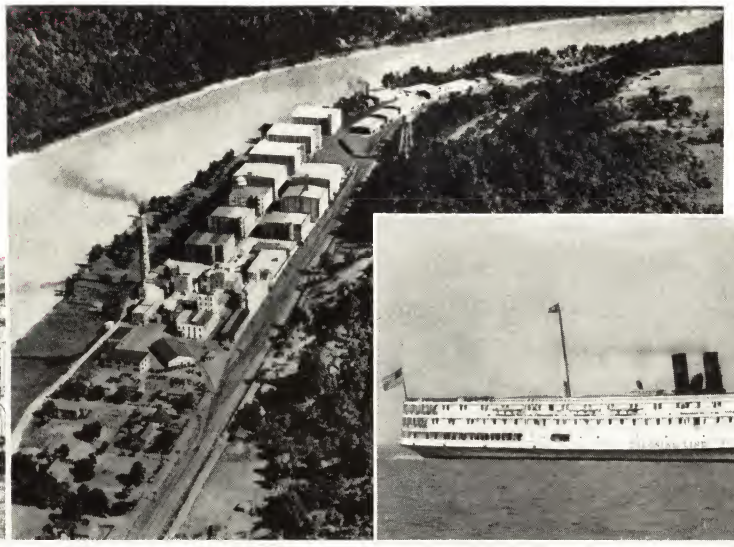
GRINNELL MEETS THE CHALLENGE OF

New Fire Protection Problems

REGARDLESS of plant design, changes in building construction, structures of unusual heights or with tremendous floor areas, there is one sure way to eliminate for all time the possibilities of destruction by fire and resulting disruption of service or production. . . .

Grinnell has solved every one of these baffling fire protection problems. Thousands of industrial plants, commercial buildings and institutions, valued at more than fifty billion dollars, are operating steadily without danger of crippling fires. *Today, the Grinnell Automatic Sprinkler System is recognized as the world's most dependable fire protection agency.*









A GRINNELL AUTOMATIC SPRINKLER SYSTEM *Completes* THE PROTECTION OF A "FIREPROOF" BUILDING

AN ANALYSIS of building construction shows that there are literally thousands of buildings in all parts of the country today that are of ordinary construction—brick buildings with floors, stairways, and interior trim of wood. There are many others which, because of their modern construction of steel, concrete and other incombustile materials, are considered "fireproof."

While the merits of "fireproof" construction are beyond question, all that can be expected from incombustible building materials, in case of fire, is passive resistance. No matter how many of the seventy odd means an architect or engineer may employ to make a structure fireproof, none of them will protect combustible *contents* unless measures are taken to provide protection on the inside. The use of the most up-to-date fire-resistive building materials at best will only *confine* a fire to its room or floor of origin. Inflammable contents of such buildings catch fire and, if the fire is not checked or extinguished, the interior may become a blazing inferno. Walls and supports, weakened by the intense heat, collapse and the building becomes a mass of tangled debris.

When a Grinnell Automatic Sprinkler System is installed, the contents of the building are fully protected. A fire developing in any part of the area protected is stopped at its source—before it can develop to any proportions. Whether a building is of "fireproof" construction or not, a Grinnell Automatic Sprinkler System will protect the building and its contents from fire.





GRINNELL

A GRINNELL AUTOMATIC SPRINKLER SYSTEM KEEPS A GOING BUSINESS RUNNING *Smoothly*

NEWSPAPER HEADLINES vividly told the story of the uncontrollable conflagrations in Chicago, San Francisco, Baltimore and Fall River. Thousands of prosperous businesses, large and small, were wiped out because they lacked proper protection against fire.

Daily there are fires that go almost unannounced but which mean destruction to individual enterprises. Small fires . . . they are usually called. To the business burned they mean lost equipment and records: these are the tangible losses. Many times it is in the intangibles that the loss is more keenly felt — cancelled contracts . . . lost profits on unfinished goods . . . destruction of vital sales and purchasing records . . . customers forced to turn to other sources for goods, never to return . . . trained employees obliged to seek work elsewhere . . . tenants forced to move to other quarters. *No insurance check can ever reimburse its recipient for these losses.*

Of every 100 unsprinkled plants burned in the United States—

43 fail to resume operations

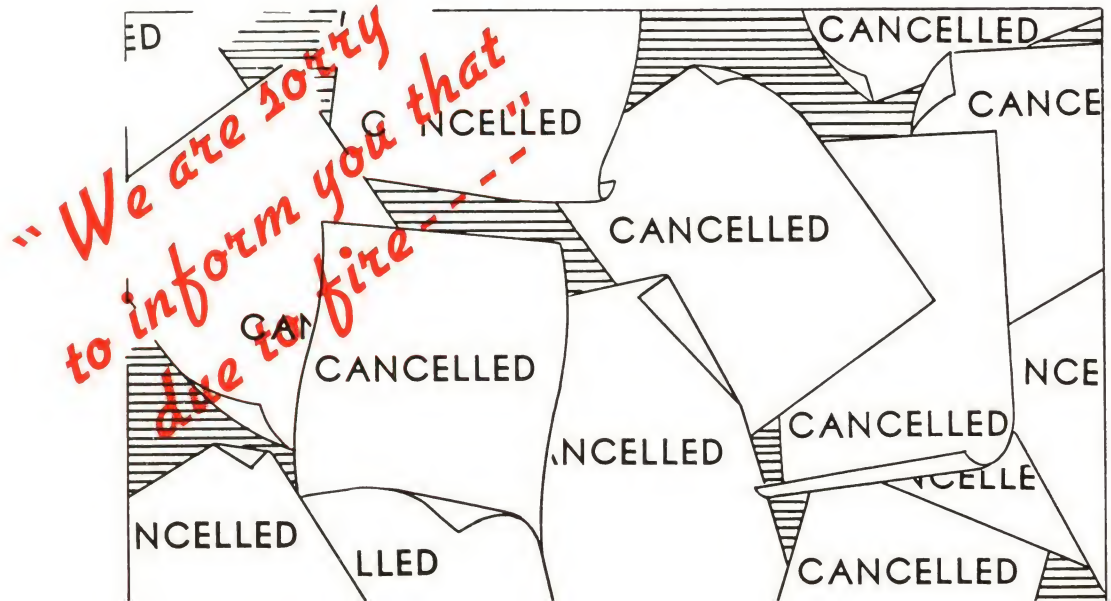
14 suffer reduced credit

17 fail to issue financial statements

26 escape with only a loss of customers

All of this regardless of insurance.

CONTRAST this with the security from business disruption which exists in plants safeguarded by Grinnell Automatic Sprinklers. Should a fire start at any time during the day or night, the Grinnell Automatic Sprinkler head instantly quenches it and simultaneously sounds an alarm, both inside and outside the building. Within a few minutes the sprinkler head opened by the fire is replaced and the system is once again on guard. Losses are insignificant.



HOW A GRINNELL SPRINKLER SYSTEM *affects* INSURANCE RATES

Converts AN EXISTING EXPENSE INTO A CAPITAL INVESTMENT

BY FAR the greatest part of the annual fire loss of this country is paid by business men. The question to be considered then is whether the insurance premiums shall be an ever-existing expense or converted into a capital investment.

Insurance rates are based on fire danger, and the fire danger practically expresses the rate of burning. Obviously, therefore, anything which reduces the rate of burning should reduce the rate of insurance to a corresponding degree.

This is exactly what a Grinnell Automatic Sprinkler System does. With a Grinnell installation, insurance premiums are reduced—sometimes as much as 40% to 90%—because insurance records have shown that with it, the chance of a serious fire is negligible. In many cases, this reduction in the insurance premium is sufficient to return the investment in a sprinkler system within a very few years. After that, the savings are clear gain.

AN ASSET—NOT AN EXPENSE

It is evident, therefore, that property owners who are not protected by a Grinnell Automatic Sprinkler System are actually paying for it without enjoying its protection. With the highly advantageous insurance rate which usually accompanies the installation of a Grinnell Sprinkler System, it is not a question of whether one wishes to incur the installation cost of such a system. Instead it is whether one wishes to divert an item of expense into a capital asset. The following table—also the chart on the opposite page—illustrates this point.

INSURANCE SAVINGS TABLE

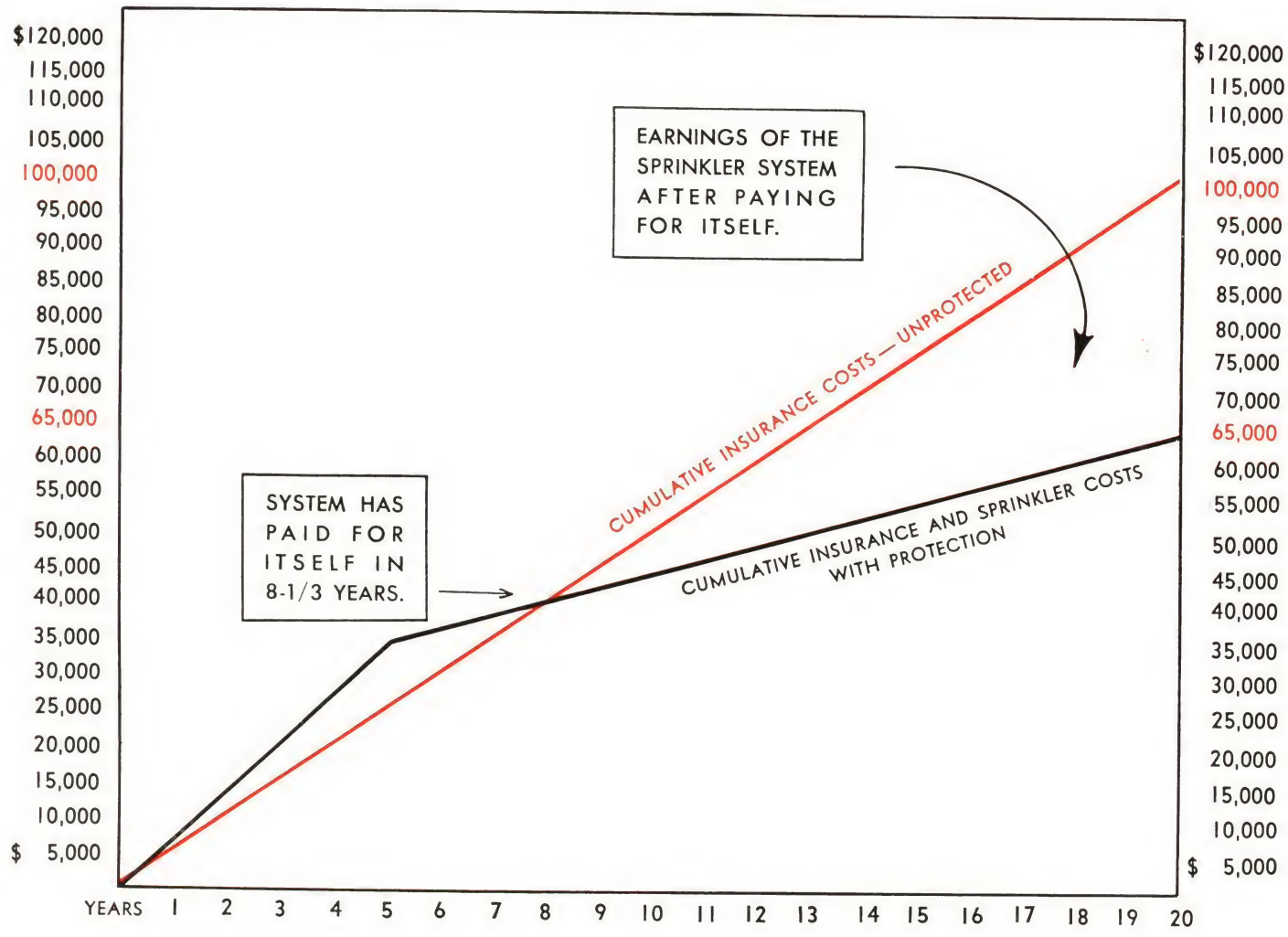
Year	Payments to Grinnell Co.	Insurance Savings	New Capital Required		% Return on New Capital
			Annual	Accumulated	
1	$ 5,000	$ 3,000	$ 2,000	$ 2,000	150%
2	5,000	3,000	2,000	4,000	75%
3	5,000	3,000	2,000	6,000	50%
4	5,000	3,000	2,000	8,000	37½%
5	5,000	3,000	2,000	10,000	30%
End of 5th Yr.	$25,000	$15,000	$10,000		68%

Note: In some instances savings are sufficient to equal entire cost.



GRINNELL

GRAPHIC ANALYSIS *of* INSURANCE SAVINGS



Above is a graphic chart illustrating the Insurance Savings Table shown on the preceding page. The insurance premium on the unprotected property in this particular instance is $5,000 per year. With the installation of a Grinnell Automatic Sprinkler System, the premium is reduced to $2,000 per year, resulting in an annual saving of $3,000 in insurance.

On this basis, the system will pay for itself in eight and one-third years. From that time on, the system saves or earns $3,000 each year. And, during the 20 years from the day the system was installed, it has not only constantly safeguarded the business against loss from fire, but has earned the substantial sum of $35,000 for the owner.

Although this illustration covers a period of 20 years only, the equipment, with proper care, continues to protect the business from fire and assures insurance savings during the entire life of the property.

A FOOL-PROOF SPRINKLER SYSTEM

is never an ACCIDENT!

IT MUST BE PROPERLY PLANNED, PROPERLY INSTALLED

and it must FUNCTION

A MAKESHIFT sprinkler system installation might fail at the all important moment. To be thoroughly dependable a sprinkler system must be properly planned to reach every square foot of a building. Extra coverage is sometimes advisable for the more hazardous areas. Each sprinkler head must receive an ample supply of water the instant it is needed. The system must be fool-proof.

A Grinnell Automatic Sprinkler System includes the famous Grinnell Sprinkler Heads, Fittings (cast iron screwed, long turn and flanged), Dry-Pipe Valves and other special devices—all manufactured and tested in strict accordance with standards set by insurance authorities.

Soundly engineered and skillfully installed a Grinnell Automatic Sprinkler System is always adequate to do its job completely—to meet the strictest insurance standards and requirements—

AND IT COSTS NO MORE.



GRINNELL

Now . . . before fire strikes . . . decide on the Grinnell Sprinkler System best suited to your plant.

GRINNELL'S 7 STANDARDS of SUPERIORITY show why Executives prefer GRINNELL FIRE PROTECTION

GRINNELL'S 7 STANDARDS of Superiority are responsible for the unfailing protection afforded by a Grinnell Automatic Sprinkler System year after year. These 7 Standards are your assurance of the most positive fire protection available. They represent the combined experience of the organization which has been responsible for safeguarding over 50 billion dollars worth of property.

1 SCIENTIFIC RESEARCH ...Since 1882

IN LABORATORIES specially designed for the purpose, Grinnell Engineers have developed and are constantly testing every device which makes up a Grinnell Automatic Sprinkler System.

This intelligent research has been responsible for the major part of all improvements in automatic sprinkler fire protection.



2 GRINNELL ENGINEERING . . .

that "tailors" the System to the Building



EVERY Grinnell installation is "tailored" to fit. A survey of the property is made; use and occupancy requirements are considered. Then the proper type of system is decided upon. It may be the standard Grinnell "Wet-Pipe" System, the "Dry-Pipe" System, or a combination of both. If appearance is paramount, the piping may be concealed as shown at the left. Sprinkler piping may be painted to blend with the color scheme or concealed inconspicuously in the ceiling or side wall trim.

After Grinnell engineers have drawn the plans in strict accordance with the rules and regulations of the Insurance Underwriters, the plans are sent to the nearest Grinnell factory where the pipe is cut and threaded to measurement and the system prefabricated as far as possible. The material is then assembled, carefully bundled and marked for easy distribution. This assures maximum speed of installation—with a minimum of interference to others on the job.

3 WIDE RANGE OF GRINNELL EQUIPMENT

THE component parts of the Grinnell Sprinkler System with the exception of pipe, are manufactured in Grinnell plants . . . under careful and expert supervision. Responsibility for the whole installation is thus centralized, and a Grinnell system is a manufactured unit rather than an assembly of various parts from different sources. This is a factor of utmost importance to any prospective purchaser of fire protection equipment. Complete stocks carried at all plants eliminate delays and assure fast and uninterrupted installation.

Every type of automatic sprinkler system is available through Grinnell. Each installation is engineered to meet specific conditions. A Grinnell engineered installation can be made in every case without resort to makeshifts or untried adaptations.

Pipe Fittings

Pipe Hangers



Alarm Gongs

Alarm Valves

Sprinkler Heads

Indicator Posts

Dry Pipe Valves
Dry Valve Accelerators

4 HIGH QUALITY of GRINNELL PRODUCTS

SOUND business judgment dictates that the best interests of the owner of a Grinnell equipment are paramount. By maintaining the high quality of its products, Grinnell Company consistently serves the customer's best interests and, at the same time, safeguards its own. As all systems are installed by Grinnell installation crews, a sacrifice in quality means an increase in erection costs and service demands—as well as a loss of customer goodwill.

All Grinnell materials are approved by the Underwriters' Laboratories and the Associated Factory Mutual Laboratories. They are under the continuous supervision not only of these Laboratories but of the Grinnell Product Testing Laboratory as well. All installation work is performed in accordance with the rules and regulations of the Insurance Companies and subject to the bureau having jurisdiction.



5 GRINNELL INSTALLATION ... *without Interrupting Normal Routine*

GRINNELL Automatic Sprinkler Systems are installed by Grinnell's own seasoned construction force—with its expert knowledge of what to do and how to do it.

"Tailored to fit" Systems, factory made to blueprint as far as possible, eliminate delays and facilitate erection with clock-like precision on the premises. Efficiency and neatness govern each operation and the greatest care is exercised to avoid disturbing personnel or normal routine within the building.

Our files contain many unsolicited complimentary letters received from owners of all types of property—expressing their admiration of this trouble-free installation service. One of these letters, from a hospital, is reproduced at the right. It is typical of many others from owners in various fields. The fact that Grinnell installation men can so expertly erect equipment where the ill and convalescent demand quiet and rest is evidence of its ability to perform this service in any type of occupancy.

The Lancaster General Hospital
528 N. LIME ST.
LANCASTER, PENNA.
MEMBER AMERICAN HOSPITAL ASSOCIATION
AND
LANCASTER COMMUNITY CHEST

B. FRANK SNAVELY, PRESIDENT
FRANK K. SENER, V-PRES.
HAROLD ADAMS, SECRETARY
GEORGE M. ARISMAN, TREASURER
FRED S. PYFER, ASST. TREAS.
RAY B. HALL, MANAGER

August 3, 1936

The Grinnell Company,
Erie & D Sts.
Philadelphia, Pa.

Gentlemen:

Attention - Mr. Ryan

It would hardly be fair for this hospital to overlook writing you a letter relative to the installation of your Sprinkler System.

When the question arose regarding the installation of a Sprinkler System, there was considerable discussion among the professional staff as to the annoyance to patients during the installation. This matter was discussed pro and con, and finally the Board approved the purchase of your system.

The installation is now complete and as Manager of the institution, and as one who has been present during the entire installation, I am privileged to speak frankly relative to the efficiency of Mr. O. J. Mooney, foreman of the installation crew. These men worked quickly and courteously under Mr. Mooney's direction. With the exception of a little dust, which we very quickly cared for, and a slight bit of noise which could not possibly be eliminated, this installation annoyed no one to any great extent, and we feel that our patients did not suffer to any degree while these men were working.

Naturally a hospital installation is one which would bring forth some comment as to noise and disturbance to patients but your company has trained its foreman and crew to such a degree of courtesy and efficiency that this hospital will highly recommend the work done by your organization in installing your system in other institutions.

Very truly yours,
THE LANCASTER GENERAL HOSPITAL

RBH/n

Ray B. Hall.
Manager

6 GRINNELL RESPONSIBILITY . . .

Protecting over 50 billion dollars' worth of property



WHEN human life and valuable property are at stake, it does not pay to gamble on makeshift fire protection equipment.

Behind every Grinnell Automatic Sprinkler System stand the integrity and responsibility of Grinnell Company, Inc., which has maintained a position of leadership in the field of automatic fire protection for over fifty years.

Grinnell Automatic Sprinkler Systems are installed in industrial, commercial and institutional buildings throughout the world. More than half of the automatic sprinklers in use today are Grinnell Sprinklers. Their task is to protect millions of lives and over 50 billion dollars' worth of property from fire.

7 GRINNELL CONTINENT-WIDE SERVICE . . . *Covering United States and Canada*

REALIZING its responsibility, Grinnell has sought, through the years, to make available a service to its customers as nearly continent-wide as possible by maintaining offices, general foremen or inspectors in all of the principal cities of the United States and Canada. These links in the Grinnell chain of service make it possible to obtain personal assistance, service and information from thoroughly competent sources in safeguarding life and property from the ravages of fire.



WORLD-WIDE SERVICE

Associated with Grinnell in this work of fire protection are Mather & Platt of Manchester, England, who carry the Grinnell name and tradition around the world.

THE CRITICAL PERIOD IN FIRE PROTECTION . . .

The First Few Minutes

THESE few minutes at the start of a fire are worth hours of fire fighting later. What happens during this critical period often determines the safety of human life . . . the fate of a business.

These first few minutes determine whether a successful enterprise will continue its uninterrupted progress or be seriously crippled, perhaps destroyed entirely, by fire.



WITH A GRINNELL AUTOMATIC SPRINKLER SYSTEM . . .

When the fire starts the water starts—and the fire is extinguished. Simultaneously an alarm is sounded inside and outside the building. Since the fire is quickly extinguished, the water is turned off only long enough to replace the opened sprinkler head or heads . . . *and the system is on guard again.*

TYPES . . .

of Grinnell Sprinkler Systems

There is a type of Grinnell Sprinkler System for every fire hazard. Each is designed to provide the utmost in adequate fire protection for specific conditions.

These Systems, briefly described on the following pages, are—

1 • The Grinnell Standard Wet-Pipe System
2 • The Grinnell Standard Dry-Pipe System
3 • The Grinnell Simplex Dry-Pipe System
4 • The Grinnell Mulsifyre System
5 • The Grinnell Open Sprinkler System

THE GRINNELL STANDARD *Wet-Pipe* SYSTEM

FOR USE WHERE TEMPERATURES *Above* FREEZING ARE MAINTAINED

THE Grinnell Wet-Pipe System consists of Grinnell Automatic Sprinkler Heads mounted at proper intervals on a system of piping suspended from the ceiling. These sprinkler heads are manufactured to operate at predetermined temperatures, dependent upon the normal temperatures in the area in which they are installed. The piping system is filled with water and is graded in size to assure adequate water pressure to safeguard the protected areas. It is connected to the main water supply by means of valves, alarms and other devices so that constant water pressure is maintained against the closed sprinklers.

When a fire occurs, the heat generated ascends—causes the sprinkler head above to open — releasing water upon the fire, quickly extinguishing it. If necessary, the next sprinkler takes care of its allotted area in the same manner. Only the sprinkler heads in the immediate vicinity of the fire operate . . . thus reducing water damage to an absolute minimum. Simultaneously, with the opening of a single sprinkler, an alarm is sounded both inside and outside the building. A shut-off valve, plainly marked in a conspicuous place, makes it possible to shut off the water as soon as the fire is out. The heads which have operated may then be replaced: the system is again on guard.



An "exposed" Grinnell Automatic Sprinkler System protects this large warehouse from fire.

THE GRINNELL STANDARD *Dry-Pipe* SYSTEM

FOR USE WHERE TEMPERATURES MAY GO *Below* FREEZING

IN unheated buildings—or in unheated sections such as shipping platforms—the water in a wet-pipe sprinkler system might freeze in winter and defeat the working of the system. The Grinnell Dry-Pipe Sprinkler System overcomes this difficulty: the piping system, instead of being filled with water, is filled with air under moderate pressure, with ample water instantly available (from the outside water supply) upon operation of the Dry-Pipe Valve.

The Dry-Pipe Valve is closed under ordinary conditions but, when a fire occurs, the sprinkler head operates just as in the Wet-Pipe System. The opening of a sprinkler head allows the compressed air in the pipes to escape. This releases the pressure in the Dry-Pipe Valve so that it swings open and permits the water to flow to the opened head. This function is speeded by the Grinnell Dry Valve Accelerator. From this point on, the working of this system is exactly the same as in the Wet-Pipe System—the fire being checked in its earliest stage.



A "concealed" Grinnell Automatic Sprinkler System (Side Wall) safeguards this summer hotel.

THE GRINNELL *Simplex* DRY-PIPE SYSTEM

FOR USE WHERE HAZARDS ARE NOT TOO SERIOUS AND LIMITED WATER SUPPLY IS AVAILABLE

THE Grinnell Simplex Dry-Pipe System was designed to extend the benefits of automatic sprinkler protection to properties where fire hazards are relatively light and where water supplies are limited. Standard sprinkler systems, as a general rule, require a water supply that can be satisfactorily furnished through pipe not less than 6 inches in diameter. The Grinnell Simplex System, however, needs only a ¾-inch tank filling connection which may come from the usual domestic supply.

The successful operation of the system is based on the fact that a very large percentage of fires in sprinklered buildings are extinguished with a few heads. To accomplish its purpose, the Grinnell Simplex System utilizes a pressure tank of sufficient capacity in which water and air are carried under suitable pressure to meet conditions of the particular installation.

The first basic factor contributing to the success of this type of system is the GRINNELL QUARTZOID BULB HEAD. The low operating temperature and extreme sensitivity of this Head endow the system with the rapid response essential to the control of fires with limited water supplies.

The second basic factor is the absence of mechanical moving parts. This absence makes for trouble-free operation. The result is a system in which efficiency is at the maximum . . . and maintenance at the minimum.

Grinnell Simplex Sprinkler Systems are installed in many clubs, schools and sanatoriums where hazards are light. Grinnell Simplex Marine Systems are installed on passenger ships.

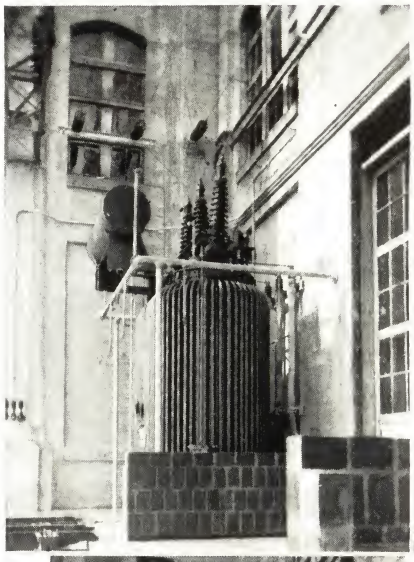


This large Country Club is protected against fire by a Grinnell Simplex Dry-Pipe System.

THE GRINNELL *Mulsifyre* SYSTEM

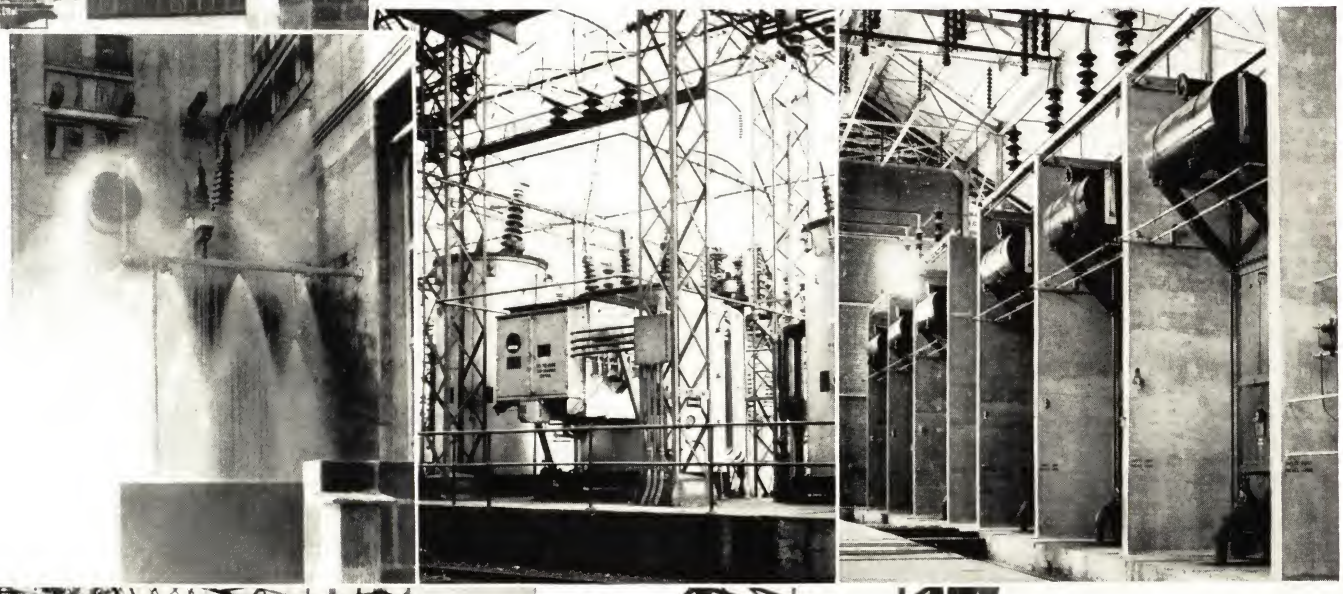
FOR EXTINGUISHING FIRES IN INFLAMMABLE LIQUIDS

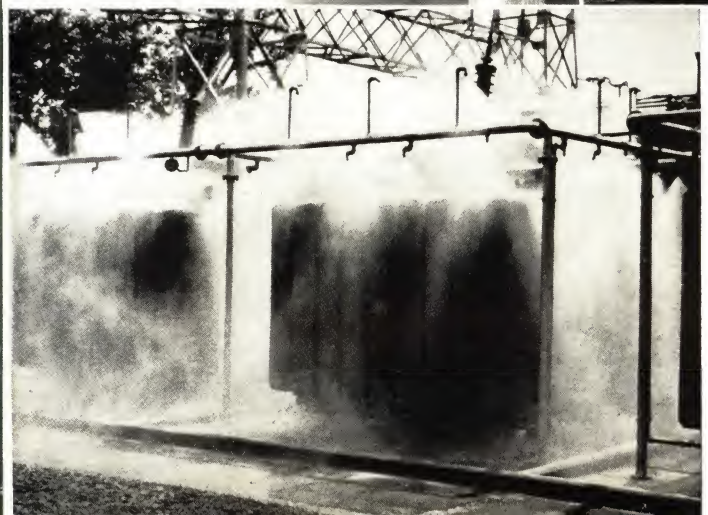
THE Mulsifyre System has had wide acceptance in this country and abroad in the Public Utility Field for the purpose of extinguishing oil fires in transformer stations for circuit breakers and other places where an oil fire may be a serious hazard, such as the lubricating oil lines to generators. Its effectiveness in extinguishing fires in inflammable liquids offers broad possibilities in other fields. It has been approved for use in the bilges of oil burning ships of the United States Navy.

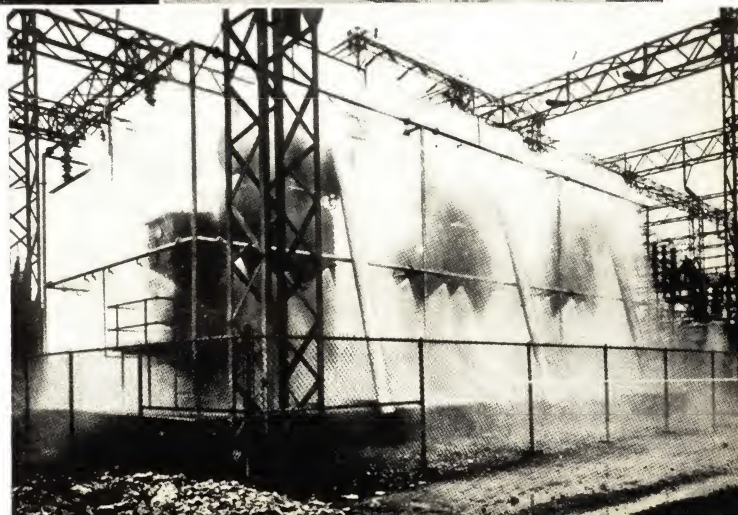


The Grinnell Mulsifyre System of extinguishing oil fires operates on an entirely new and sound basis. A specially designed Projector discharges water, with considerable force, directly upon the burning liquid and converts it into an emulsion which is incapable of burning. The formation of the emulsion is almost instantaneous and the fire is extinguished within a few seconds from the time the water is released — after this, the emulsion breaks down.

Mulsifyre Projectors are attached to a permanent piping system and are spaced a few feet apart so that they command the entire inflammable area beneath. This System may be installed to operate manually or automatically.







THE GRINNELL AUTOMATIC SPRINKLER HEADS . . . *the Nerves of the System*

WHILE successful performance of an automatic sprinkler system is impossible unless all the parts of the system function properly, the first effect of a fire is to raise the temperature in the vicinity of the sprinklers to their operating point, and, if they fail to open completely, failure of the entire system follows. Consequently, Grinnell has devoted its best efforts—in research, engineering, manufacture—to the perfection of the sprinkler itself.

The success of a sprinkler depends mainly upon its speed of opening, its durability in service, and the manner in which it applies water to a fire.

The *speed* with which a sprinkler opens is important, for the sooner water reaches a fire the sooner it will be extinguished with consequent smaller loss.

Durability is important because it determines the useful life of a sprinkler in the presence of corrosive agents. These agents . . . always to be found in the atmosphere . . . tend in some instances to decrease speed and in others to weaken the sprinkler. The better the sprinkler in this respect the greater its value as a fire protection agent and as an investment—for replacement is required by insurance interests when performance falls below the required standard.

Distribution is important because after the sprinkler opens the water should be discharged over a definite floor area, ceiling or wall and *in the form of small fast driven drops*, most effective as a cooling and extinguishing means. Water not reaching a fire is worse than wasted since it may cause needless damage.

THE GRINNELL *Quartzoid Bulb* TYPE

THE MOST ADVANCED DEVELOPMENT IN SPRINKLERS
TODAY . . . STANDARD WITH MANY NATIONAL USERS



THIS sprinkler is the most advanced development. Because it far outclasses any other in speed and durability, it is standard with many national users. The operating element is a bulb made from quartzoid, a strong transparent material entirely unaffected by all forms of corrosion, nearly filled with a colored liquid. On being heated by fire, the liquid rapidly expands and promptly bursts the bulb, opening the sprinkler in a forceful positive manner not obtainable in any other type. Speed of operation is greater because opening occurs at a lower temperature than is possible and safe with other types of sprinklers since the Quartzoid Bulb does not weaken as its bursting point is approached.

The standard rating is 135° F., and bulb sprinklers of this rating are approved for use under exactly the same conditions as the ordinary type having a rating of 165° F. Exceptionally good distribution is obtained by the streamlined deflector, against which the water strikes after being discharged at high velocity from a smooth tapered nozzle.

The Quartzoid Bulb Sprinkler is attractive in appearance, and is favored for some installations on that account. It can be supplied with the metal parts plated, polished, colored or wax-coated for decoration or protection.

THE GRINNELL *Side Wall* TYPE



THE Grinnell Side Wall Sprinkler Head is identical in construction with the Grinnell Quartzoid Bulb Type with the exception of its specially designed deflector.

This Sprinkler Head was devised to provide automatic sprinkler protection in occupancies where light or medium hazards exist and where appearance of overhead piping is objectionable. It can be inconspicuously installed on side walls so that when opened by fire, the specially designed deflector effectively distributes water over a predetermined area from the wall to the center of the room.

The Side Wall Sprinkler is recommended for lobbies, rooms with overhanging balconies, steamship salons—and other locations where the total area to be protected is not too great or where it is desirable to make the installation harmonize with the decorative scheme.

THE GRINNELL *DuraSpeed* SOLDER TYPE

THE GRINNELL CONVECTOR TYPE SPRINKLER HEAD

WHILE conventional in design to the extent that it employs a soldered joint for the operating element and has the usual temperature rating, this sprinkler is superior in speed, durability and distribution to others of this type because of new and distinctive features of design.

The DuraSpeed excels in *speed* because of the heat collector which is a perforated extension of one of the soldered surfaces. This patented feature, present in no other sprinkler, increases speed of operation by gathering heat that would otherwise be wasted and conducting it to the soldered joint, hastening fusion and opening of the sprinkler.

Durability is assured by the fact that none of the solder is exposed to the attack of corrosive agents, but is protected by a ring of wax. Even in the event of the failure of the wax, the progress of corrosion would be slow because the amount of solder exposed is small, due to the hemispherical form of the soldered joint. The opening force of this sprinkler is derived from a phosphor bronze spring hook which insures sharp forceful operation, unusual in solder type sprinklers.

This sprinkler can be furnished wax-coated and plated for further protection against corrosion.



GRINNELL FIRE PROTECTION *Specialties*

TO SUPPLEMENT AUTOMATIC SPRINKLER EQUIPMENT

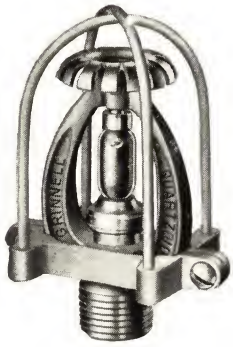


Ornamented Type Sprinkler

The Grinnell Ornamented Type Sprinkler is designed for use in hotels, clubs, stores, offices and other places where appearance is paramount. The sprinkler piping is therefore concealed above the ceiling. The head is installed in a pendent position with the escutcheon plate flush against the ceiling surface.

This sprinkler is the standard Grinnell Quartzoid Bulb Type with ornamentation affixed after the head is in place.

The smooth, streamlined deflector of all Grinnell Sprinklers is so designed that it changes the direction of the water issuing from the discharge nozzle and distributes it over the area protected by the sprinkler . . . without unnecessary loss of energy or velocity.



Sprinkler Guard

When sprinklers are installed in factories, warehouses and stock rooms where the work carried on or the material being handled exposes them to the danger of being struck by heavy objects, they can be protected against accidental damage by Grinnell Sprinkler Guards.

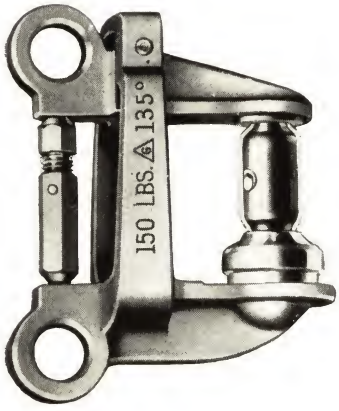
These Guards are designed to withstand heavy shocks and blows, yet do not detract from the appearance. They are available for all types of Sprinklers including upright, pendent and side wall. Sprinkler Guards installed in hazardous places may be the means of saving many times their cost. A Grinnell Engineer will be glad to make a survey to determine the advisability of using sprinkler guards.



Fusible Links ● SOLDER TYPE

Grinnell Fusible Links are made of three interlocking bronze plates. All surfaces are covered with solder when assembled. Soldered areas are so stiffened that any weakening of this portion of the link due to twisting or bending is practically eliminated. This feature is distinctive and characteristic of the Grinnell Fusible Link.

These Links are listed as standard by the Underwriters' Laboratories and Factory Mutual Laboratories. Type A (illustrated), for loads not exceeding 20 pounds, is used for automatic release of fire doors, windows, etc., normally held open with counterweight and cable mechanism. Type B (smaller), for loads not exceeding 3 pounds, is used for controlling small trapdoors, windows and other automatic control equipment.



Quartzoid Bulb Link

The Grinnell Quartzoid Bulb Link fills a definite need in the fire protection field for a heat-operated releasing device that will hold heavy loads in a dependable manner.

This Link, with its Underwriters and Factory Mutual Approved load rating of 150 pounds, eliminates the necessity of bunching several 20-pound solder links to carry the same heavy load which now one Quartzoid Bulb Link can carry.

The bulb is the same as used in the Grinnell Quartzoid Sprinkler, and is without equal for its combination of extreme sensitivity and immunity to corrosion. It also has the added advantage of a wider range of temperature ratings than is available in any other type of link.

THE GRINNELL SYSTEM OF *Open* SPRINKLERS

FOR THE PROTECTION OF VULNERABLE EXTERIORS FROM EXPOSURE FIRES

WHILE Grinnell Standard Sprinkler Systems insure complete protection from a fire which occurs within a building, the Grinnell Open Sprinkler System affords a means of protecting the exterior of a building menaced by fire spreading from neighboring property.



Grinnell Window Sprinkler

This System consists of piping carried to the outside of the building to which open sprinklers are attached. The piping is "dry"—the water, held in check by manually operated control valves inside the building, may be turned on when required. A separate valve controls the water supply for each side of the building. Automatic Sprinklers are not used in this System because a fire spreading from a building close by might cause considerable damage to the protected property before the generated heat was sufficient to operate automatic sprinkler heads exposed to the cool open air.

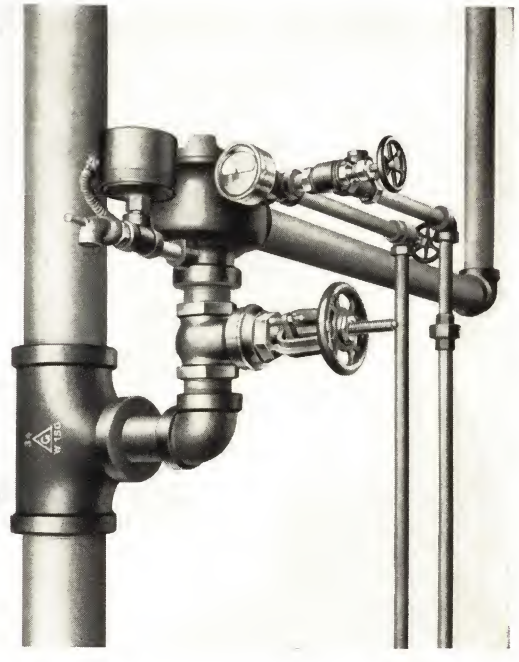
When a fire menaces the exterior of the protected property, the control valve supplying water to the open sprinklers on the exposed side is turned on: water, under pressure, rushes to the open sprinklers. This solid stream of water is immediately transformed into a WATER CURTAIN which covers the exposed wall and all its openings.

THE GRINNELL *Cold Weather* VALVE

FOR ECONOMICAL FIRE PROTECTION OF SMALL UNHEATED PORTIONS WHICH OTHERWISE WOULD BE UNPROTECTED IN WINTER

QUITE frequently, wet-pipe automatic sprinkler systems extend into sheds, shipping platforms and other small areas which are unheated. During the winter months, the water to this exposed piping must be turned off and the piping drained to prevent freezing. This procedure immediately deprives the area of automatic fire protection and creates a fire hazard which seriously endangers the remainder of the premises.

To correct this condition, Grinnell Company, at the suggestion of the insurance companies, developed the Cold Weather Valve. The use of this Valve converts the section of the wet-pipe automatic sprinkler system in the unheated area into a dry-pipe automatic sprinkler system: the pipes are filled with air under moderate pressure and the water is held in check by the Valve. Should a fire occur in the area, the opening of the sprinkler head allows the compressed air to escape, the Cold Weather Valve opens—and water flows into the system. From this point on, the equipment functions as a wet-pipe system and the fire is checked in its earliest stage. Thus the entire building, including its unheated areas, is fully protected against fire throughout the entire year.



To Keep Fire Protection Equipment at Peak Efficiency

THE GRINNELL *Inspection* SERVICE

THIS SERVICE was established in 1918. Trained Grinnell Engineers make periodic inspections and tests of a sprinkler system to assure peak efficiency. A large number of Grinnell Automatic Sprinkler System owners use this service and their expressions of satisfaction indicate it is well worth the small annual charge. Among the many desirable features of this Service are:

PROMPT DISCOVERY OF CONDITIONS NEEDING ATTENTION

The economical maintenance of a sprinkler system depends upon the prompt discovery of conditions which, if passed unnoticed, might render the equipment partially or wholly ineffective. The Grinnell Inspector periodically examines and tests every part of the sprinkler equipment. Thus conditions requiring attention are promptly discovered and corrected.

ELIMINATION OF CONDITIONS IMPAIRING PROTECTION

The Grinnell Inspector checks many details which might be overlooked by employees—details such as obstruction to distribution of water . . . inefficient drainage of piping in dry systems . . . neglect to change sprinklers where temperatures are influenced by the installation of heating units . . . large lamps, etc. . . . closed or partly closed gate valves . . . unsatisfactory water supply . . . danger of freezing—and many other causes which might impair the efficiency of the system in event of fire. The required trip test of dry-pipe valves is made in connection with the insurance interests if desired. The Grinnell Inspector then resets the valve, thoroughly cleans it inside, placing the system in first-class condition.

REPLACEMENT OF SMALL PARTS AND MINOR REPAIRS

Carrying a small tool kit and a limited supply of replacement parts, the inspector is able to perform minor repairs and furnish such parts as he has . . . promptly and, in most cases, without cost to the owner.



For Automatic Supervision of Sprinkler Systems . . .

CENTRAL STATION *Supervisory* SERVICE

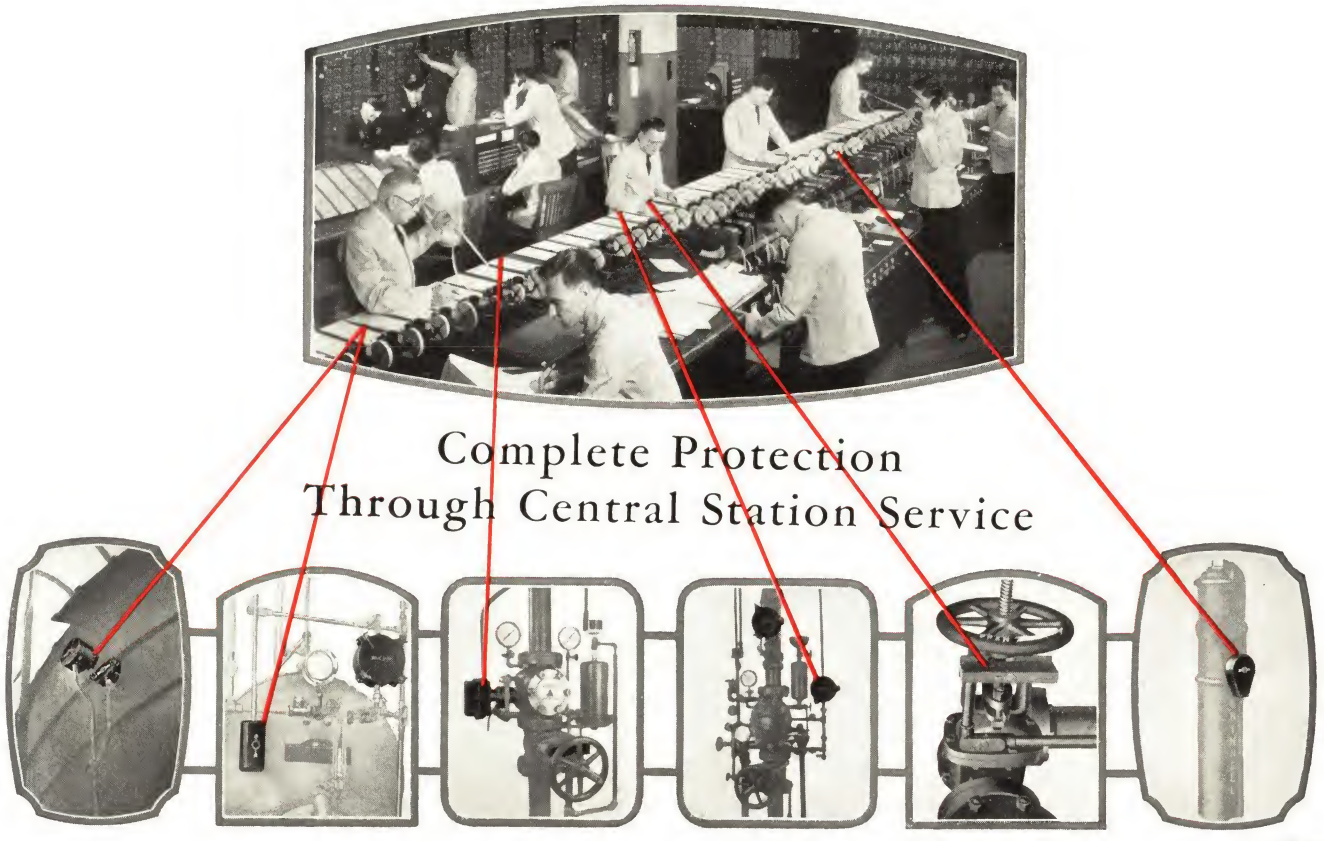
ANY mechanical system, without constant supervision as well as periodic inspections, is at the mercy of human carelessness, forgetfulness and neglect. The Grinnell Company, through A.D.T. Central Stations in all of the principal cities throughout the country, is able to arrange for an electrical supervisory service which automatically detects trouble conditions that might impair the effectiveness of the sprinkler system.

HOW CENTRAL STATION SUPERVISORY SERVICE OPERATES

By means of electrical devices attached to all vital parts of the sprinkler system, trouble conditions—such as closed shut-off valves, low water in gravity or pressure tanks, low air pressure or low temperature—are automatically detected when they occur. These conditions are automatically reported to an outside Central Station where trained operators are continuously on duty to investigate and secure immediate corrective action. This Sprinkler Supervisory Service also makes the sprinkler system an automatic fire alarm: it automatically summons the fire department when water flows in the system through the opening of a sprinkler head—or when an accident occurs to impair the system.

ADVANTAGES OF CENTRAL STATION SUPERVISION

In addition to assuring complete and constant operating efficiency of the sprinkler system, Central Station Supervisory Service in many cases results in actual economies through modifications of other more costly and less effective protective measures. In some instances, savings in insurance also may be obtained. Engineers are available at any time and will gladly make surveys and submit estimates . . . without cost or obligation.







Above: This large Storehouse in Boston is fully protected by Grinnell Automatic Sprinklers.

Left: Grinnell Automatic Sprinklers safeguard this Railroad Elevator in New Orleans.

GRINNELL SPRINKLER SYSTEMS

Installed in Buildings of All Types

Right: Two-story Railroad Pier in Baltimore where 4000 Grinnell Quartzoid Bulb Sprinklers and 300 Grinnell Open Sprinklers are always on guard against fire.



Right: Milwaukee County Infirmary where Grinnell Sprinklers have banished the danger of fire.



Below: Grinnell Sprinklers prevent business interruption in this New York Department Store.



Left: Guests patronize this fire-safe Miami Hotel protected by Grinnell.



Protected Year After Year by
GRINNELL SPRINKLER SYSTEMS

A Few Typical Installations Showing the Wide Adaptability of Grinnell Equipment

Left: A large Can Manufacturing Plant in Vancouver which Grinnell Sprinklers have made safe from fire.



Right: This New York Bank in the skyscraper district is protected by a Grinnell Sprinkler equipment.



Below: Dairy Farm building in Atlanta immune from fire because of Grinnell Sprinklers.



Center: Country Clubs are often distant from City Fire Apparatus. This Ohio Clubhouse is protected by a Grinnell System.

Below: Five school fires in the U. S. each day do not bother this Grinnell protected School in New Orleans.



Below Right: This spacious Hotel and its guests are protected from fire by Grinnell Side Wall Sprinklers.





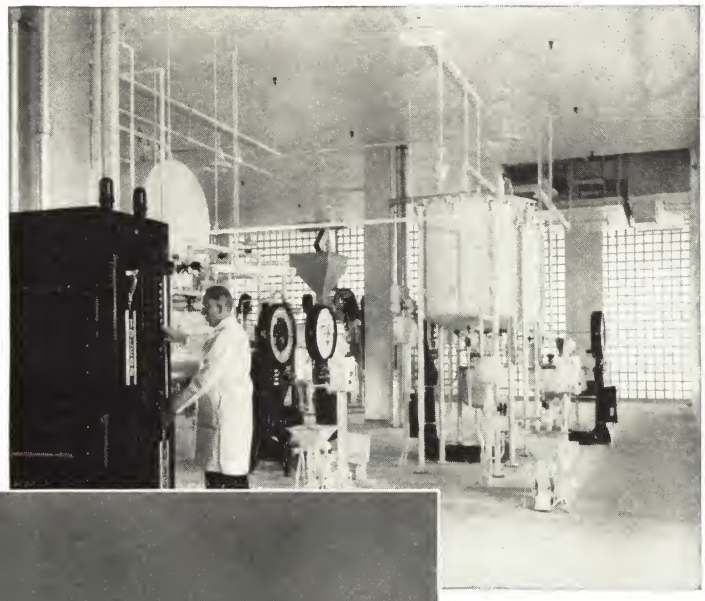
A *Recent* GRINNELL INSTALLATION

IN THE NEW

Campana Building

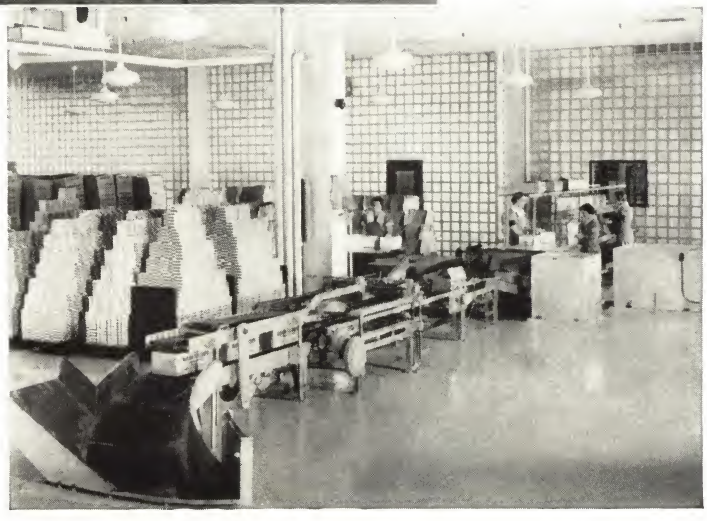
BATAVIA, ILLINOIS

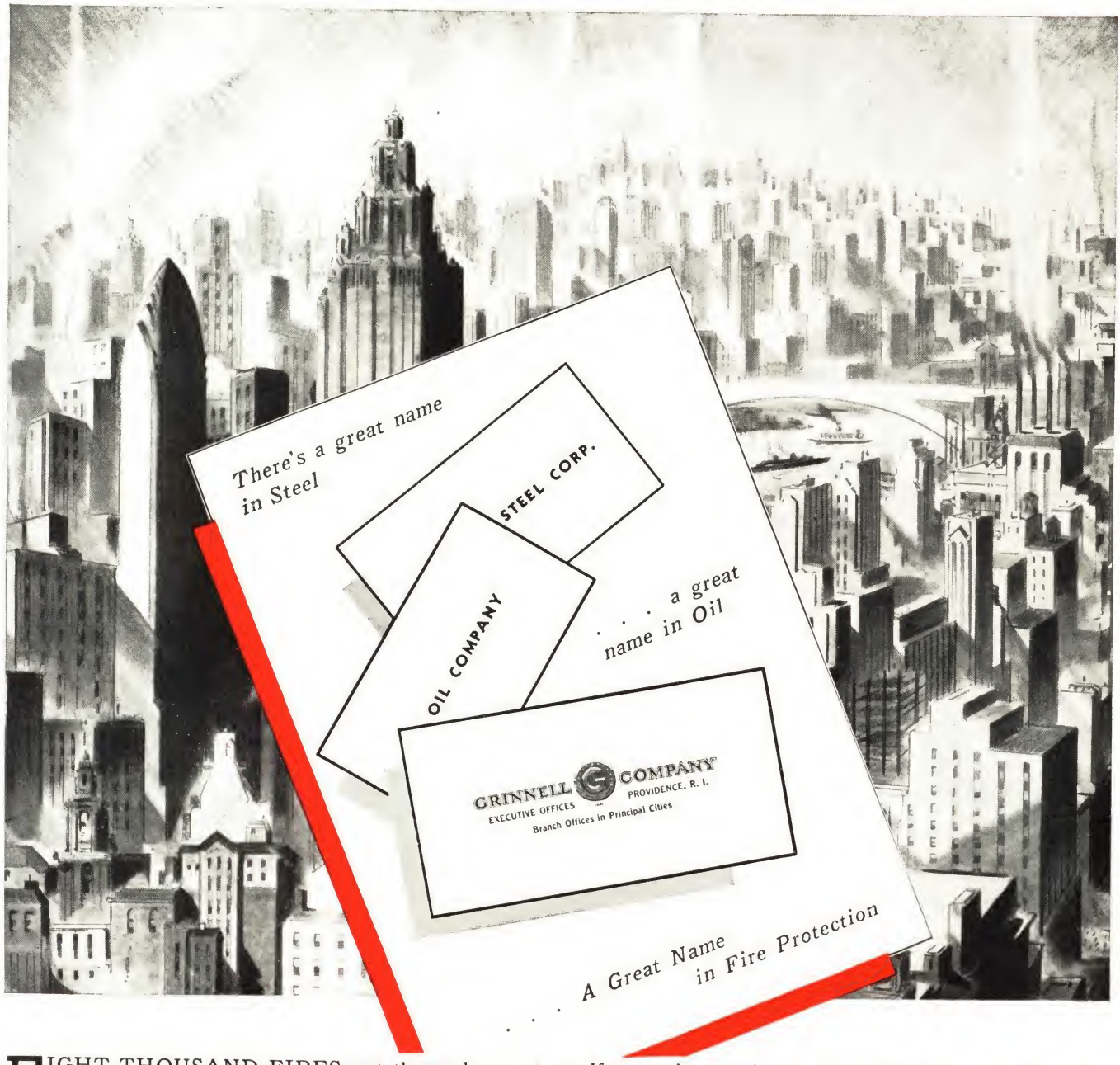












EIGHT THOUSAND FIRES put themselves out in this city since 1930. Larger than London, twice the size of New York, it is *Fireless City* . . . the huge metropolis of factories, skyscrapers, stores, of hospitals and schools, homes, ships, docks and piers—all equipped with Grinnell Automatic Sprinkler Fire Protection. *Its property value exceeds fifty billion dollars.*

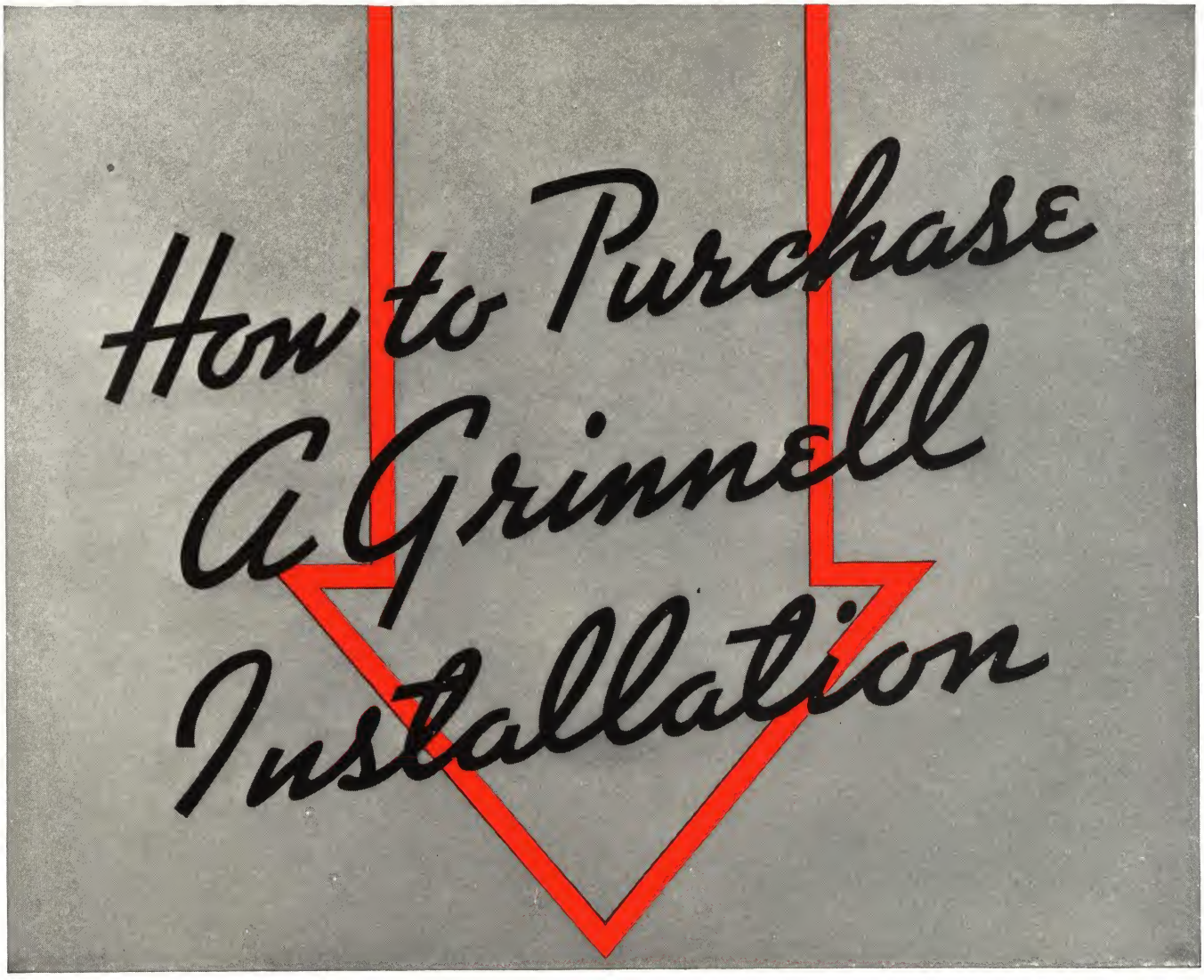
With Grinnell protection, fires put themselves out *before* the danger stage. Acting automatically, the Grinnell System stops fire at its source.

In the automatic sprinkler industry, GRINNELL is the standard. Due to its introduction of the first self-operating sprinkler head in 1882 and its continual research and development ever since, it has kept ahead of fast-multiplying fire hazards.

It is easy to move your property to Fireless City . . . to let an everwatchful Grinnell System guard it against fire . . . to reduce your insurance premiums. Write for full information and a check-up of your building by Grinnell Engineers.

GRINNELL

AUTOMATIC SPRINKLER FIRE PROTECTION



It is not necessary TO PAY CASH FOR A GRINNELL SPRINKLER SYSTEM — ALTHOUGH INSURANCE SAVINGS OFTEN MAKE IT QUITE CONVENIENT TO DO SO.

A GRINNELL ENGINEER WILL BE GLAD TO DISCUSS A FINANCE PLAN WHEREBY PAYMENTS ARE EXTENDED FOR LENGTHY PERIODS • • • ON REASONABLE TERMS.

You are invited to discuss your



FIRE PROTECTION PROBLEMS *with a* GRINNELL ENGINEER

. . . and there's a GRINNELL OFFICE *as near as your Telephone*

GRINNELL COMPANY, Inc.

Executive Offices: PROVIDENCE, R. I., 260 West Exchange Street

Cable Address: "SPRINKLER, NEW YORK"

FIRE PROTECTION OFFICES

ALBANY, 11 North Pearl Street

ATLANTA, 240 North Highland Avenue, N.E.

BALTIMORE, 1205 Garrett Building, Redwood and South Streets

BOSTON, 131 State Street

BUFFALO, 110 Pearl Street

CHARLOTTE, 1431 West Morehead Street

CHICAGO, 4425 South Western Avenue

CINCINNATI, 1914 Union Central Life Building

CLEVELAND, 1005 Society for Savings Building

COLUMBUS, 150 East Broad Street

DALLAS, 1315 Marilla Street

DETROIT, 2639 Barlum Tower

MEMPHIS, 209 Farnsworth Building

MILWAUKEE, 735 North Water Street

MINNEAPOLIS, 240 Seventh Avenue, South

NEWARK, 207 Market Street

NEW ORLEANS, 1422 New Orleans Bank Building

NEW YORK, 420 Lexington Avenue

LONG ISLAND CITY, 23rd Street and 50th Avenue

PHILADELPHIA, Erie Avenue and D Street

PITTSBURGH, 235 Fourth Avenue

PROVIDENCE, 260 West Exchange Street

ROCHESTER, 65 Broad Street

ST LOUIS, 1140 Central Industrial Avenue

Grinnell Company of the Pacific

FIRE PROTECTION OFFICES

LOS ANGELES, 520 Mateo Street

OAKLAND, 2230 Peralta Street

SAN FRANCISCO, 601 Brannan Street, cor. Fifth

SEATTLE, 3101 Elliott Avenue, cor. Bay Street

Grinnell Company of Canada, Ltd.

FIRE PROTECTION OFFICES

TORONTO, ONT., 2440 Dundas Street, West

MONTREAL, QUE., 700 Beaumont Avenue

WINNIPEG, MAN., 850 Somerset Building

VANCOUVER, B. C., 1132 Hamilton Street


G
FOUNDED 1850

1887 # W. D. ALLEN MANUFACTURING COMPANY 1938

52nd Year of Progress in Manufacturing Fire Protection Equipment

GENERAL OFFICES AND WAREHOUSE
CHICAGO, ILL.
566-570 West Lake Street

OFFICE AND WAREHOUSE
NEW YORK, N. Y.
28 Warren Street

BOSTON, MASS., 502 Statler Building
DENVER, COLO., 428 U. S. National Bank Building
LOS ANGELES, CALIF., 1100 Continental Building
PORTLAND, ORE., 131 S. W. Fourth Avenue
SALT LAKE CITY, UTAH, 409 Dooly Building
SAN FRANCISCO, CALIF., 420 Market Street
NEW ORLEANS, LA., 404 St. Charles Street

ALLEN PRODUCTS

GENERAL FIRE PROTECTION and STANDPIPE EQUIPMENT for interior and exterior use, comprising: Hose Racks and Reels; Fire Hose, linen and cotton rubber lined; Brass Hose Couplings, Valves and Nozzles; Steel Hose Cabinets; Fire Extinguishers; Brass Siamese Standpipe Connections; Hose Spanners, Fire Axes and other auxiliary equipment.

ALLEN SERVICE

Our Data Book No. 145 (A. I. File 29c2) "Allen on Interior Fire Protection" is yours for the asking. This book contains complete data, specifications, and working drawings on interior fire protection equipment. Write also for our diagrammatic layout for a typical approved "Fire Pump and Single Standpipe System." Correspondence is invited, and our Engineering Department will co-operate in furnishing special data and information.

ALLEN BOWES HOSE RACK FOR LINEN HOSE

Made In Two Types—Allen Bowes Hose Racks are made in two types—Regular and Underwriters' Listed Semi-automatic. They are simple to install and operate, no trick parts.

Underwriters' Listed Rack—Equipped with a semi-automatic device in the cover construction which exerts sufficient pressure to hold the water in control at the last hose loop when the valve is turned "full on"—a slight tug on the hose when extended to its full length up to the last hose loop releases the water pressure (see illustration).

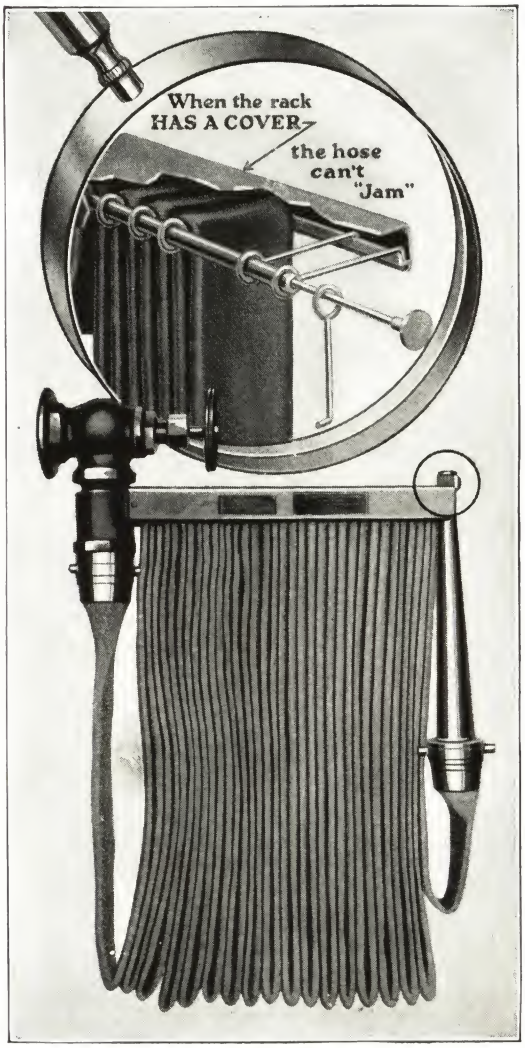
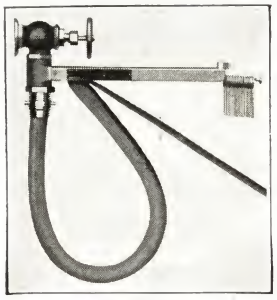


Fig. 139

Regular Type—This is generally accepted—some municipalities, however, require the "Underwriters'" type—consult your local building department and underwriters' office.



Allen Bowes
Underwriters Labeled
Hose Racks

Operation—In both types the looped hose as hung in the rack is readily and quickly released, whether the water pressure is on or off. In both types the cover restricts the water pressure, when "full on," until practically the entire hose is run off the rack. To operate, first turn on water pressure—then unrack hose by carrying nozzle forward to point of conflagration—the hose is carried off the rack, loop by loop, on sliding, frictionless metal pins (one for each hose loop). The pins (see illustration) bear the weight of the folded hose equally on both arm and channel without at any time pinching or injuring the flexible linen hose. Reracking of hose is easily and quickly accomplished.

Capacities—Regular Racks—Hold 50, 75, 100, or 150 ft. of 1¼, 1½, 2, or 2½-in. Underwriters' unlined linen hose. (Specify length and size of hose required.)

Underwriters' Listed Semi-automatic Racks—(Add U to the Fig. No.). Holds 50, 75, or 100 ft. of 1¼ or 1½-in. Underwriters' unlined linen hose. (Specify length and size of hose required.)

Finishes—Standard finishes on the STEEL Covered Racks are aluminum or gold bronze or red enamel—special finishes are white enamel, nickel plate, and chromium plate. The Standard BRASS Rack is polished and lacquered—special finishes are nickel plate or chromium plate.

Underwriters' Listed Storage Rack—For 50, 75, or 100 ft. of 2 or 2½-in. linen hose. (Specify length and size of hose required.)

Methods of Attaching Allen Bowes Hose Racks

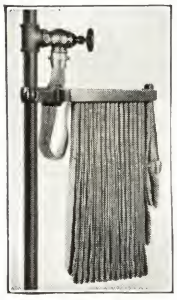


Fig. 138



Fig. 137

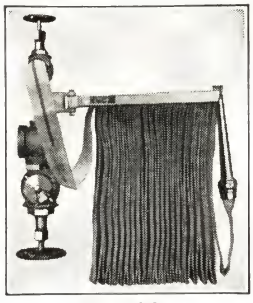


Fig. 196

Fig. 139—Allen Bowes Rack shown at left is the most popular style. It has a swivel back which swings on a nipple screwed into the valve. This rack can be used in a cabinet or with an exposed unit.

Fig. 138—Allen Bowes Rack clamped on a riser (specify size of pipe clamps) used with Allen's Fire Line Angle Hose Valve.

Fig. 137—Allen Bowes Rack attached to wall, used with Allen's Fire Line Angle Hose Valve.

Fig. 196—Compact and practical where the riser is equipped with one Allen Fire Line Angle Hose Valve for the first aid hose and one 2½-in. Allen Fire Line Angle Hose Valve for the fire department.

Alenco Fire Line Angle Hose Valves

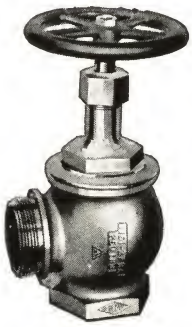


Fig. 170-U
Underwriters
Fig. 170 Regular
Male connection

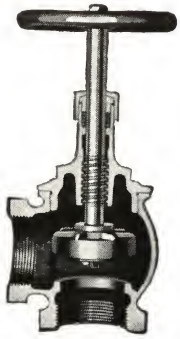


Fig. 171-U
Underwriters
Fig. 171 Regular
Female connection

Specify: Alenco *Regular* Angle Valve, 1¼, 1½, 2, 2x1½ or 2½ ins. for pressures up to 125 lbs.

Specify: Alenco *Underwriters' Approved* 175 lbs. angle valve, 1½ or 2½ ins. for pressures up to 175 lbs.

Specify: Alenco *Underwriters' Approved* 300-lb. angle valve, 1½ or 2½ ins. for pressures up to 300 lbs.

The 170-U and 171-U Underwriters' Approved 2½-in. sizes are approved by the New York City Fire Department. Pressures over 125 lbs. should have the nozzle pressure reduced by means of restricting orifices placed inside the coupling.



Fig. 3080

Allen First Aid Fire Extinguisher

Labeled by Fire Underwriters.

2½-gal. Soda and Acid Fire Extinguisher. Hang on bracket with upper rim 5 ft. from the floor; or install in an extinguisher steel cabinet (specifications on request); or place in cabinet with the Fire Hose Unit. *(Illustrated at left).*

Allen's Reddy Hand Extinguisher

Labeled by Fire Underwriters.

1 or 1½-qt. size. For fires in greases, paints, and electrical equipment. Pump type. Hang on a bracket; or install in cabinet with the Fire Hose Unit. *(Cut at right).*



Fig. 3767

'Allen Foam' 2½-gal. Fire Extinguisher—Fig. 3450

Not illustrated. Labeled by Fire Underwriters. For Class A fires (ordinary) and Class B fires (in oils, flammable liquids, etc.) See Data Book for complete information.

Coupling With Pressure Reducing Disc



In high buildings there are naturally correspondingly larger variations in pressure on standpipe outlets, due to difference in elevation between the upper and lower floors. On all valve pressures in excess of 100 lbs. some method of reduction should be used to retard the flow of the fire stream and automatically reduce the nozzle pressure so it will not exceed 80 lbs. A pressure of 60 lbs. is even preferable. The simplest method consists of the installation of restricting discs in the hose couplings. These restricting discs consist of a heavy brass plate with an orifice inversely proportioned to the pressure on the valve's inlet, and provide an efficient and inexpensive method of restricting the pressure on the hose.

Allen's Underwriters' Unlined Linen Hose

Made in two grades, both approved and accepted by all municipal codes. Specify Flax Line Linen Hose with Underwriters' yellow label or Flax Tow Linen Hose with Underwriters' green label, properly coupled in lengths not longer than 50 ft. with Alenco Fig. 97, 12 in. brass nozzle attached.

Alenco Fire Extinguisher Cabinet 285

Made in Alenco Hollow Metal Construction or Nella Sheet Steel Construction.

The Alenco recessed type is illustrated; exposed type to fasten on outside of wall also made. Doors furnished with full glass panel or with duo-panel. 2½ gal. Underwriters' Approved First Aid Chemical Fire Extinguisher is protected by the cabinet, discourages tampering or discharging extinguisher and makes it readily available in case of emergency.



Made to hold one extinguisher as illustrated. Can also be made to hold two or more extinguishers

As cabinets are practically airtight, they reduce the expense of keeping the extinguisher polished and very materially add to the appearance of the building. Write for "Allen on Interior Fire Protection" for specifications.

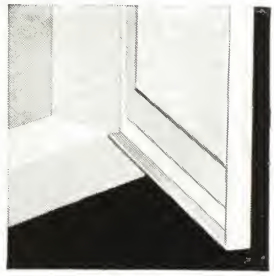


Allen "Tamper Proof" Institutional Fire Hose—Fig. 393

Allen's "Tamper Proof" Institutional Fire Hose Unit Cabinet *cannot be pried open* by the patients or inmates of asylums, sanitariums, prisons, and other institutions where the patients must be guarded against injury or where the fire apparatus must be protected against destruction.

The door and trim are made of 10-gauge steel. The one-piece steel door has a neat beveled panel and fits absolutely flush with the face of the cabinet.

The continuous heavy steel, semi-concealed piano type hinge is welded to the door and frame providing reinforcement. The one-piece hinge pin runs the entire length of the hinge and is centered with the face of the door. A flush fitting flat key cylinder lock is furnished. Write for further information.



Construction Detail

Shows heavy angle iron reinforcement around the inside of the steel door

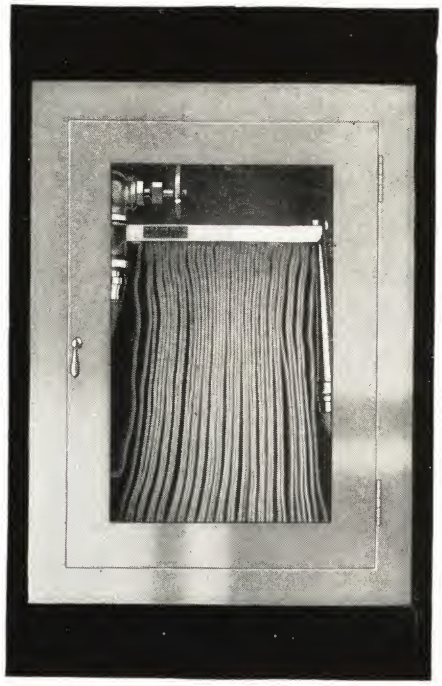
ALENCO AND NELLA STEEL FIRE HOSE CABINETS



The Underwriters recommend a door with a glass panel so that the apparatus can be plainly seen and readily accessible.

Both the "Alenco" and "Nella" Cabinets can be furnished with three types of doors: The *full glass panel* door as shown in large illustrations; the *duo-panel* door as shown below; and the *break glass panel* door as shown below.

The words "fire hose" in gilt or red letters (as illustrated on the Alenco Cabinet), can be furnished at a nominal charge. Gold leaf letters can be furnished, but cost approximately $4.00 net extra per cabinet. Sandblasted lettering on glass panel can be furnished.



Alenco Hollow Metal Construction

Material—Alenco Hollow Metal Steel Trim and Door Fire Hose Unit Cabinets are made of furniture steel. The front and back of the door are each pressed from one piece of furniture steel without joints or rivets, and the door is accurately fitted to the jamb rabbet, which thoroughly excludes dust and dirt. The channel steel reinforcement on the inside of the door assures rigidity, yet it is adjustable to hold either a plate glass panel or DSA (double strength quality A) glass panel. Made in sizes to hold the fire hose units as shown on following page.



Construction Detail of Alenco Hollow Metal Trim and Door

Trim—The standard projection of the trim on the recess type cabinet is 1¼ in. This construction gives maximum cabinet depth with minimum wall recess. This trim may be reduced or made flush, but any variation must be compensated for by a corresponding increase in the depth of the recess in the wall.

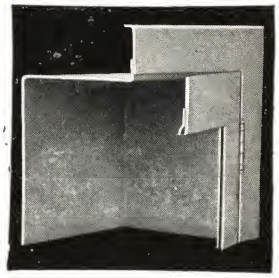
Finish—The standard finish is white enamel inside and white priming coat outside. The cabinets can be finished entirely in white enamel, in colors, or grained to match any particular finish.

Bronze Cabinets—Made of hard copper, instead of steel, then bronze plated, can be furnished at an extra charge.

Hinges and Handles—Standard cabinets have the hinges on the right-hand side. Hinges will be furnished on the left-hand side only when specified. The loose pin hinges and lever handle catch are brass, nickel plated. They can be chromium plated. Bullet catch and pull handle can be furnished.

Nella Sheet Steel Construction

Material—Nella Sheet Steel Fire Hose Unit Cabinets in design are of a superior type and are substantial in construction. Body, door and trim is made of sheet steel. Both the door and trim are cut from solid sheets without seams or rivets. The one-piece door fits flush in the frame, leaving the face of the cabinet absolutely smooth. This method is preferable to the overlapping door as it will exclude dust from the cabinet. Made in sizes to hold the Fire Hose Units as shown on the following page.



Construction Detail of Nella Sheet Steel Door and Trim

Trim—Standard Nella Cabinets have the outside edge of the trim turned over ⅝ in. Straight edge trim can be furnished when specified. This must be compensated for by a corresponding increase in the depth of the recess in the wall.

Dimensions—Inside dimensions are the same as those shown on the following page. Outside dimensions: Add 1 inch to height and add 1 inch to width. Opening required in wall: height and width are the same. *But add 1 inch to depth in wall recess.*

Finish—The standard finish is a gray priming coat inside and outside. Special finishes can also be furnished.

Hinges and Handle—Standard cabinets have semi-concealed steel hinges on the right-hand side. Hinges will be furnished on the left-hand side only when specified. Nickel plated lever handle is standard.

Glass—Specify either plate glass or D.S.A. glass panels. Glass is shipped separately and is not installed.

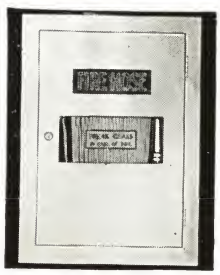
Cabinets with Duo-Panel or Break Glass Doors



Duo-Panel Door

Duo-Panel Door — Fig. 220A Alenco. Fig. 220N Nella. The door has a beveled plate glass panel (shipped separately) and a sheet steel beveled panel.

Break Glass Door—Fig. 275 Alenco. Fig. 275N Nella. The cabinet can be kept securely locked to prevent pilfering. The hose unit is visible and in case of fire the single strength glass panel is shattered.



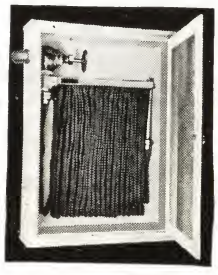
Break-Glass Door

Outside Wall Fire Hose Cabinets

Recommended where wall depth is not available for recessed cabinets shown above.

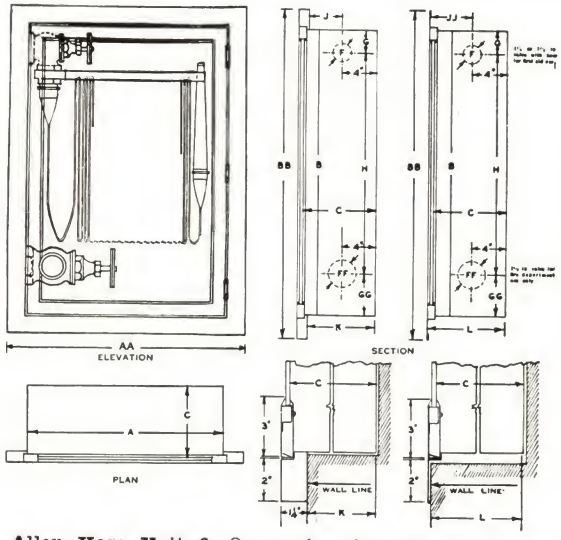
Fig. 380—Alenco Hollow Metal Construction. In estimating wall space required, add 3¾ ins. to inside dimensions.

Fig. 380N — Nella Sheet Steel Construction. In estimating wall space required add 2 ins. to inside dimensions.



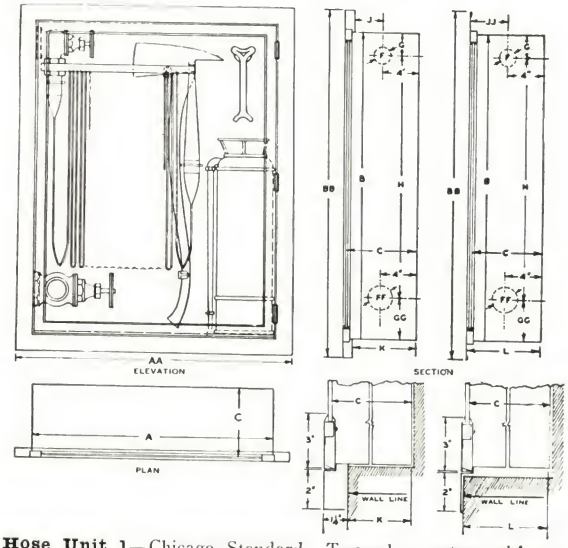
Outside Wall Type

ALLEN FIRE HOSE UNITS—USED WITH OR WITHOUT CABINETS



With the valve supply from the side. For office buildings, hotels, hospitals, schools, factories, theatres, and other buildings. The length and size of the hose and the size of the valves determines the size of the cabinet.

Write for large size drawings.

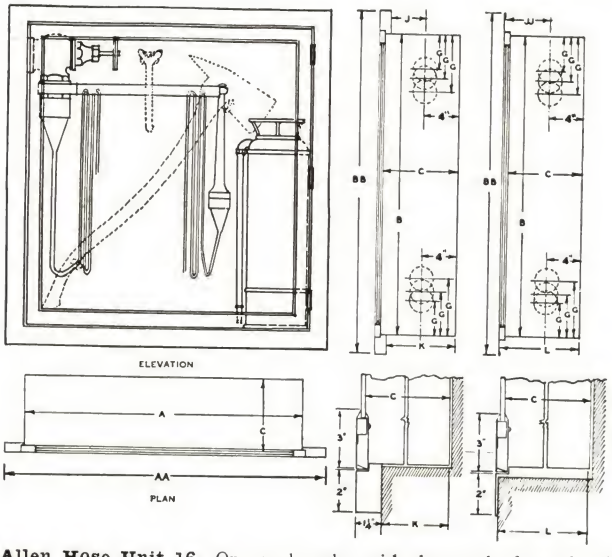


Allen Hose Unit 6—One angle valve with supply from the side. Furnished with or without cabinet. The unit consists of: Fig. 139 or 139U Bowes Hose Rack. Fig. 262 Alenco Hollow Metal Hose Cabinet, or other cabinet as described. Fig. 171 or 171U Allen Fire Line Angle Hose Valve. Underwriters' linen hose, specify length and size, (to be coupled in 50-ft. lengths). Brass hose couplings. Fig. 97 hose nozzle. Other sizes and information on request.

Hose, ft.	Valve, in.	Cabinet 262 Inside dimen., in.			Extreme size outside dimen., in.		Wall opening required, in.		
		A	B	C	AA	BB	Width	Height	Depth
50	1¼–1½	19¾	28¾	5½	24½	33½	20½	29½	5
50	2	19¾	28¾	6½	24½	33½	20½	29½	6
50	2½	19¾	28¾	7½	24½	33½	20½	29½	7
75	1¼–1½	20¾	30¾	5½	25½	35½	21½	31½	5
75	2	22¾	32¾	6½	27½	37½	23½	33½	6
75	2½	22¾	32¾	7½	27½	37½	23½	33½	7
100	1¼–1½	22¾	32¾	5½	27½	37½	23½	33½	5
100	2	24¾	34¾	6½	29½	39½	25½	35½	6
100	2½	24¾	34¾	7½	29½	39½	25½	35½	7

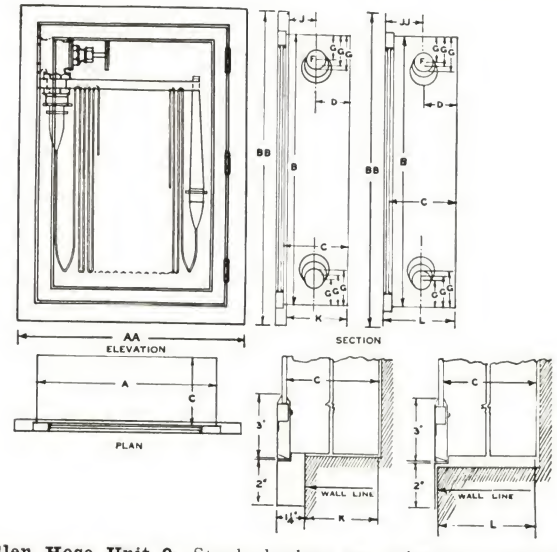
Allen Hose Unit 1—Chicago Standard. Two-valve system with supply from the side. Furnished with or without cabinet. The Unit consists of: Fig. 192 Alenco Hose Cabinet, or other cabinet as described. Fig. 139U Bowes Hose Rack. Fig. 171U 1½-in. Underwriters' Fire Line Angle Hose Valve. Underwriters' linen hose, specify length and size (to be coupled in lengths not longer than 50 ft). Brass hose couplings. Fig. 97 hose nozzle. Fig. 170U 2½-in. Underwriters' Fire Line Angle Hose Valve. Specify local fire department thread. Fig. 120 brass hose cap and chain. Fig. 3080 Allen's First Aid 2½-gal. Soda and Acid Fire Extinguisher. (Fig. 20 fire axe and brackets are optional.) Hose spanner and brackets. Where Underwriters' racks and valves are *not* required specify Regular types.

Hose, ft.	Valve, in.	Cabinet 192 Inside dimen., in.			Extreme size outside dimen., in.		Wall opening required, in.		
		A	B	C	AA	BB	Width	Height	Depth
50 75 100	1½ and 2½	30¾	38¾	8½	35½	43½	31½	39½	8



Allen Hose Unit 16—One angle valve with the supply from the side and with fire extinguisher. Furnished with or without cabinet. The Unit consists of: Fig. 139 or 139U Allen Bowes Hose Rack. Fig. 215 Alenco Hollow Metal Hose Cabinet, or other cabinet as described. Fig. 171 or 171U Allen Fire Line Angle Hose Valve. Underwriters' Linen Hose, specify length and size, (to be coupled in lengths not longer than 50 ft). Brass hose couplings. Fig. 97 hose nozzles. Fig. 3080 Allen's First Aid 2½-gal. Soda and Acid Fire Extinguisher. Optional—Fig. 20 fire axe and brackets. Hose spanner and brackets.

Hose, ft.	Valve, in.	Cabinet 215 Inside dimen., in.			Extreme size outside dimen., in.		Wall opening required, in.		
		A	B	C	AA	BB	Width	Height	Depth
50 75 100	1¼ 1½ 2 or 2½	32¾	34¾	8½	37½	39½	33½	35½	8



Allen Hose Unit 9—Standard where two valves are required. 1½ and 2½-in. Allen Angle Hose Valves with supply from the side. Furnished with or without cabinet. The Unit consists of: Fig. 214 Alenco Hose Cabinet, or other cabinet as described. Fig. 139 or 139U Allen Bowes Hose Rack. Fig. 171 or 171U Allen Fire Line Angle Hose Valve. Underwriters' Linen Hose, specify length and size, (to be coupled in lengths not longer than 50 ft). Brass hose couplings. Fig. 97 hose nozzle. Fig. 170 or 170U 2½-in. (Underwriters') Fire Line Angle Hose Valve, specify local fire department thread. Fig. 120 brass hose cap and chain.

Hose, ft.	Valve, in.	Cabinet 214 Inside dimen., in.			Extreme size outside dimen., in.		Wall opening required, in.		
		A	B	C	AA	BB	Width	Height	Depth
50 75 100	1¼ or 1½ or 2½	20¾ 22¾ 24¾	30¾ 32¾ 38¾	8½ 8½ 8½	25½ 27½ 29½	35½ 37½ 43½	21½ 23½ 25½	31½ 33½ 39½	8 8 8

Allen Concealed (or Flush) Type Siamese—Straightway or Angle Type Body



Fig. 283 Siamese (Inlet) with Sill Cock—Patented

Allow a minimum of 6 in. between the bottom of the sill cock and the ground for attaching hose

Fig. 276 Siamese (Inlet) Without Sill Cock

Can be substituted for Fig. 283—patented. Not illustrated

The Siamese is made of bronze polished or white metal polished. Chromium plating can be furnished but is not recommended. Extra heavy throughout and will last as long as the building. Specify straight way or angle type body.

The modern fire department connection—pleasingly simple in design but rugged enough for the loftiest buildings, the Standard for New York City. A *"Safety"* Siamese—it is *Safe* for pedestrians, as it extends only 4¼ inches from the wall. It is safe for the building owner, as he will have no damage suits and has safe modern equipment that is approved by all fire department engineers. Allen's design solves the problem presented by the restricted sidewalk space in crowded metropolitan districts. The body of the Siamese with its two independent self-closing clapper valves can be placed inside the building, or if space prevents, can be built into the wall of the building during construction. When the building is completed, the plate and the two independent swivel inlets are attached to the body of the Siamese by means of the required length pipe nipples.

Fig. No.	Sill cock	Inlets, in.	Outlet, in.	Height, in.	Width, in.	To wall, in.
283	With	2½x2½	4	14¾	15¾	4¼
276	Without	2½x2½	4	9½	15¾	4
283	With	2½x2½	6	14¾	15¾	4¼
276	Without	2½x2½	6	9½	15¾	4
283*	With	3 x3	4	15	15¾	4⅜
276*	Without	3 x3	4	10½	15¾	4⅛
283*	With	3 x3	5	15	15¾	4⅜
276*	Without	3 x3	5	10½	15¾	4⅛
283*	With	3 x3	6	15	15¾	4⅜
276*	Without	3 x3	6	10½	15¾	4⅛

**Approved by New York City. See note at bottom of page.*

Fire Department Control Units

Required by the city of Chicago. For making private high pressure systems available to the fire department by using the regular Siamese (inlet) and also installing a wall hydrant (outlet) and exterior valve control. Complete information and diagrams on request.

Allen Standpipe Siamese

Fig. 221—Straight Fig. 31—45-Degree Fig. 230—90-Degree



Made of heavy cast bronze to Underwriters' requirements with an independent interior self-closing clapper valve in each opening. An escutcheon, Fig. 265 or plate, Fig. 264 should be specified to designate the service the Siamese is intended for. Plugs and chains or "Sensible" Caps are extra. Specify rough or polished bronze or white metal polished. Chromium plating can be furnished but is not recommended.

Fig. 221, Short Straightway—For opening through wall. 2½x2½x4 in., 2½x2½x6 in., *3x3x4 in., *3x3x5 in., *3x3x6 in.

Fig. 31, 45-Degree—For opening through wall. 2½x2½x3 in., 2½x2½x4 in., 2½x2½x5 in., 2½x2½x6 in., 3x3x4 in.

Fig. 230, 90-Degree—For opening through the sidewalk. 2½x2½x3 in., 2½x2½x4 in., 2½x2½x6 in., *3x3x4 in., *3x3x5 in., *3x3x6 in., 3½x3½x6 in.

**Approved by the New York City Fire Department and bears the Calendar Number of the New York Board of Standards and Appeals.*

Allen Wall Siamese (Inlet)

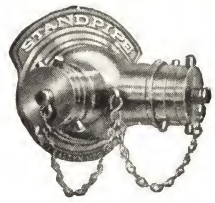


Fig. 232—With Sillcock

Fig. 270—Without Sill Cock, shown at right can be substituted for Fig. 232

Made of bronze and highly polished. The Siamese is handsome and well proportioned. The wording on the escutcheon should indicate to the fire department what part of the fire protection system is to be served. Complete with plate, solid brass plugs and chains. Polished brass or polished white metal. Chromium plating can be furnished but is not recommended.

Allow at least 6 in. from bottom of sill cock to bottom of hose for connecting sill cock.



To make a Fire Department Control Unit, Fig. 274 hydrant control valve and Fig. 27 wall hydrant (outlet) can be used.

Fig. No.	Sill cock	Inlets, in.	Outlet, in.	Height, in.	Width, in.	Depth, in.
232	With	2½x2½	4	18⅝	10½	9⅜
270	Without	2½x2½	4	10	10½	9⅜
232	With	2½x2½	6	21¾	11¼	10
270	Without	2½x2½	6	12	11¼	10
232*	With	3 x3	4	18⅝	10½	10½
270*	Without	3 x3	4	10	10½	10½
232*	With	3 x3	5	21⅜	11¼	11½
270*	Without	3 x3	5	12	11¼	11½
232*	With	3 x3	6	21⅜	11¼	11½
270*	Without	3 x3	6	12	11¼	11½

**Approved by New York City. See note at bottom of first column.*

Allen Sidewalk Siamese



For use where the inlet pipe comes through the pavement. It consists of a heavy brass escutcheon to protect and cover the opening in the sidewalk, a polished brass sleeve to cover the iron pipe, and a polished brass Siamese head. Complete with solid brass plugs and chains. Polished brass or chromium plated finish. A bronze name plate, Fig. 264, should be placed on the building to indicate the service of the Siamese. 2½x2½x4 in., 2½x2½x6 in., *3x3x4 in., *3x3x5 in., *3x3x6 in.

**For New York City. See note in first column.*



Allen Wall Siamese

2 Way and 3 Way—*Fig. 440*—Straight pattern. Boston type. Each inlet has an interior self-closing clapper valve. 2½x2½x4 in., 9 in. to wall; 2½x2½x2½x6 in., 9 in. to wall; 3x3x3x6 in., 11¼ in. to wall.

Allen Roof Manifold and Control Valves



Fig. 439—Pressure should be controlled by a gate valve below the roof and means provided for draining the manifold and supply pipe to protect it from freezing. Cast bronze body. 2½ in. Fig. 170U—(175 or 300 lbs. pressure) Allen's Underwriters' Fire Line Angle Valves, specify fire department thread. 2½x2½x4 in., 2½x2½x2½x6 in., 2½x2½x2½x8 in.

Allen Automatic Ball Drips





At Left:

Fig. 2112—½ in. only. Threaded one end. One end open.

At Right:

Fig. 2112NY—¾ in. only. Threaded both ends. Required by New York City Fire Department.

An automatic ball drip should always be placed at lowest point in standpipe between inside check valve and the Siamese or valve connection. This drip will close against pressure, but, after pressure is off, will automatically drain this portion of the pipe and prevent the Siamese from freezing.

ELKHART BRASS MFG. COMPANY

ESTABLISHED 1902

Manufacturers of Inside Fire Protection
ELKHART, INDIANA

REPRESENTATIVES

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DISTRICT OF COLUMBIA: WASHINGTON—R. H. Stacy, 1673 Columbia Road
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GEORGIA: ATLANTA—Haley-Warren, Inc., 475 Marietta Street, N. W.
ILLINOIS: CHICAGO—T. Porter West, 629 So. Wabash Avenue
KENTUCKY: J. M. Beglen, 104 W. Pearl Street, Cincinnati, Ohio
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MARYLAND: BALTIMORE—Ferd. L. Eidman, 12 W. Madison Street
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MICHIGAN: DETROIT—Frank C. Davitt, 826 Washington Boulevard Building
MINNESOTA: MINNEAPOLIS—W. S. Nott Co., 2nd Avenue No. and Third Street
MISSOURI: ST. LOUIS—U. S. Rubber Products, 1015 Washington Street
NEW YORK: NEW YORK—U. S. Rubber Products, 61 Hudson Street
OHIO: CINCINNATI—J. M. Beglen, 104 W. Pearl Street
CLEVELAND—S. A. George, 1200 W. 9th Street
OREGON: PORTLAND—U. S. Rubber Products, 435 N. W. 6th Street
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Products

HOSE CABINETS of Bronze, Steel and White Metal.

HOSE RACKS of Brass and Steel.

HOSE, Linen and Cotton Rubber Lined.

VALVES, COUPLINGS and NOZZLES.

EXTINGUISHERS: Foam, Soda Acid and Carbon Tetrachloride.

SIAMESE and HYDRANT CONNECTIONS.

SPANNERS, AXES and all Complementary Equipment.

ELK HART IND

Reg. U. S. Pat. Off.

Special Equipment to Specifications

In addition to the standard equipment described on the following pages, special equipment is quickly available.

With complete facilities under our own roof, we are prepared to deliver special items in a minimum of time and with all the advantages of our thirty-six years' experience.

Information

Blueprints showing typical siamese installations and riser diagrams, together with a digest of Underwriters' regulations are available and will be furnished free of charge to architects who require them.

Recent Installations

State Office Building, Boston, Mass.
Post Office Department Building, Washington, D. C.
Department of Interior Building, Washington, D. C.
Chicago Post Office Building, Chicago, Ill.
All Radio City Buildings (Rockefeller Center), New York City.
Pennsylvania Railroad Station (30th Street), Philadelphia, Pa.
State Hospital for Insane, Manteno, Ill.
Jackson County Court House, Kansas City, Mo.
State Hospital, Benton, Ark.
Capitol Building, Baton Rouge, La.
St. Paul Post Office, St. Paul, Minn.
Narcotic Farms, Lexington, Ky.
State Library, Indianapolis, Ind.
Georgia State Prison, Reidsville, Ga.

ELKHART COVERED BRASS AND STEEL HOSE RACKS

Swinging Type—With Non-detachable Pins

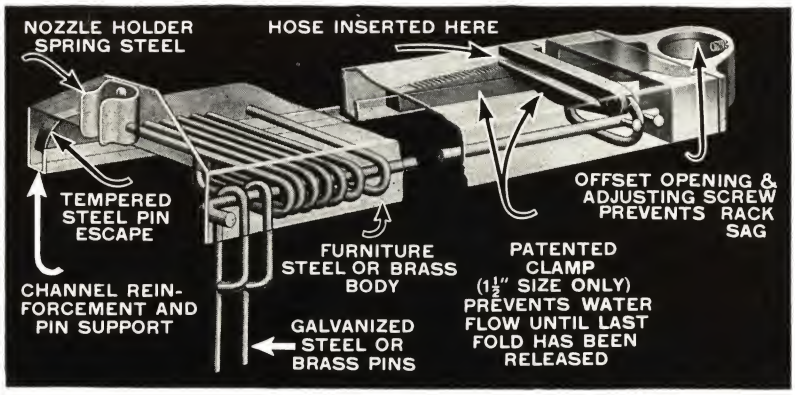


Plate 41

Plate 41 (For 1¼ or 1½ in. Linen Hose)
National Board of Fire Underwriters
Factory Mutual
Board of Standard and Appeals, New York, N. Y.

Plate 42 (For 2 and 2½ in. Linen Hose)
National Board of Fire Underwriters
Factory Mutual
Board of Standard and Appeals, New York, N. Y.

Plate 45 (For Any Size Linen Hose)
Board of Standard and Appeals, New York, N. Y.
Factory Mutual

Construction

To the left is a self-explanatory phantom view of our Plate 41 Underwriter approved semi-automatic hose rack.

To assure yourself of its superiority we recommend that you compare it impartially, point for point, with any competitive hose rack.

Carefully thought out in every detail, even to the adjusting screw which prevents loaded racks from sagging, this rack instantly recommends itself to discriminating engineers.

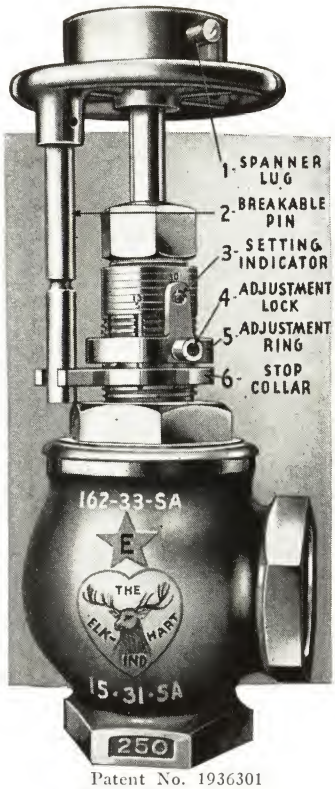
Our standard Plate 45 hose rack is identical in every respect to the illustration, except that it does not have the patented clamp, for other than Factory Mutual installations.

Finish

Aluminum bronze, gold bronze, or red lacquer are standard finishes. Dead black or white enamel optional. Also finished in nickel, brass, chromium, and flat black plate, solid brass-polished and lacquered, and to any specifications.

Method of Attachment

Style (N)—Supporting nipple, brass or iron, for angle valve.
Style (P)—Pipe clamp.
Style (W)—Wall bracket.
Style (C)—Combination wall bracket and escutcheon for gate valve.



Patent No. 1936301
Plate 20UP—Female
Plate 25UP—Male

COMBINATION PRESSURE REDUCING ANGLE VALVE

ELKHART'S NEWLY DEVELOPED VALVE FOR NEW YORK CITY

Approved by Underwriters' Laboratories and New York City Board of Standards and Appeals

Without precedent in the field of hydraulics, Elkhart developed, patented, and had approved the first and only combination pressure reducing and angle valve in the history of fire standpipe equipment. With none of the disadvantages, our new valve obsoletes the old type two-valve installations for the following reasons:

Valve never needs to be reset after use by Fire Department

No friction loss with valve open

Operation of valve understood at sight

Simplifies installation and inspection

One valve mechanically more efficient and positive than two devices

Eliminates possibility of leakage in two-valve installation.

Pressure restriction effected at right angle to hose—no hose damage

Theftproof (separate reducing valve easily stolen)

Tamperproof (adjustments locked with hex socket screws)

Costs less than the two valves now used

All measurements, except height, the same as 250-lb. angle valve.

Economizes space and enhances appearance

For mechanical details of valve, we refer to illustration and description of our Underwriters' valve. Combination valve can be furnished in any standard valve finish. Blue print and pressure setting graph furnished gladly upon request.

New York City Hose Rack Specification

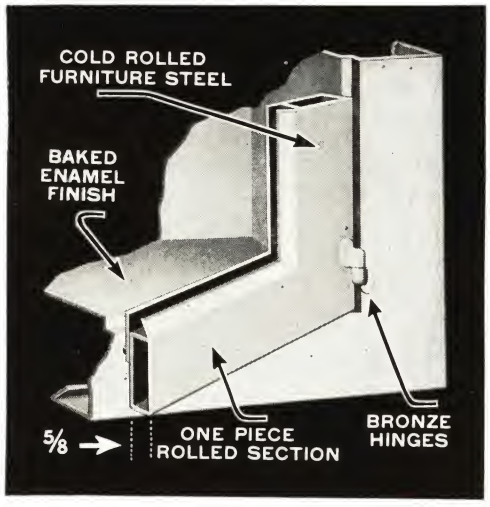
At each hose outlet, where noted on plans and where pressure on valves exceeds 50 lbs., provide and install 5 ft. 6 in. above floor Elkhart Plate 20-Up, 2½-in. approved combination pressure reducing and angle valve (separate pressure valve not required. If pressure on hose outlet does not exceed 50 lbs. specify Elkhart Plate 20-U 2½-in. fully approved valve), Elkhart Plate 42 Underwriters' and N.Y.C. approved hose rack with brass supporting nipple, ... ft. length of 2½-in. Underwriters' approved First Quality unlined linen hose coupled with 2½-in. brass expansion ring couplings having New York City Corporation thread, 2½x15x1⅛-in. polished brass, smooth bore, nozzle with lugs and approved spanner wrench with chain (identify special finishes on exposed metal if desired).

ELKHART CONSTRUCTION HOSE CABINETS

Construction

Elkhart Cabinets are made of heavy rust-resisting furniture steel. Door and trim are made from special *one-piece hollow rolled tubing.* The corners being mitered and electrically butt-welded together, are as strong as a section of the frame itself, while the seams are imperceptible. Compare this one-piece door and frame with other so-called "one-piece tubings" which, in reality, are only two pieces fitted and welded together like a box. The new one-piece frame actually reinforces the glass rather than the glass stiffening the door frame.

Dust proof construction, concealed bronze hinges, ball and spring catches (or lever handles if desired), polished plate or D.S.A. glass complete this modern fire hose cabinet. Cabinets to any dimensions can be furnished on order. Standard dimensions are listed completely under each unit.



Hardware

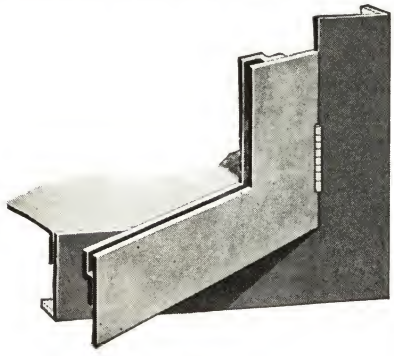
Standard Elkhart Cabinets are all equipped with special bronze hinges and ball bearing friction catch (lever handle furnished if preferred). Hinges are securely anchored, permitting 180° door opening. Friction catch, of fool proof construction, automatically takes up wear by means of spring and ball.

Finish

Regular finish consists of baked enamel inside (any color), prime coat outside. When desired, can finish outside in baked enamel to match adjacent color scheme. We recommend finishing outside after installation, as finish is often damaged while in transit or during installation.

HOOSIER CONSTRUCTION HOSE CABINETS

As a sturdy cabinet of simpler construction, we manufacture a hose cabinet having 16-gauge sheet steel box and 12-gauge door. One-piece door and trim. Cabinet door, by opening full 180 degrees, does not obstruct rapid removal of hose. No joints or rivets on front of cabinet, and with door fitting in rabbet flush with frame, this substantial cabinet is dustproof. Hardware of door consists of two nickel-plated five knuckle butt hinges on smaller cabinets, with three hinges on all cabinets exceeding 34¾ in. in height (inside dimension). A nickel-plated handle is standard on every cabinet of this type. This cabinet accommodates D.S.A. or plate glass panel.



Any of the styles shown on succeeding pages can be furnished in this construction. Made in same sizes as standard Elkhart Construction Cabinets, although special sizes of any dimensions can be furnished in this construction without loss of time.

The standard finish is one heavy prime coat, inside and outside.

Types and Styles of Elkhart and Hoosier Cabinets



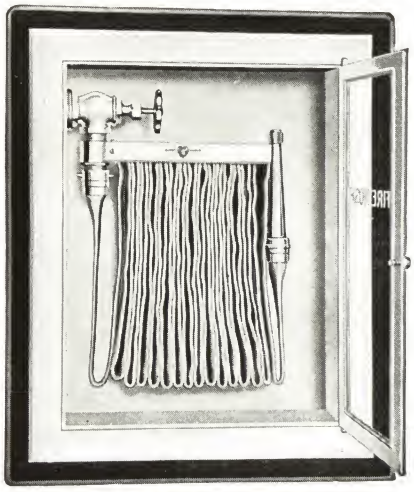
Institutional Cabinet

Institutional Cabinet

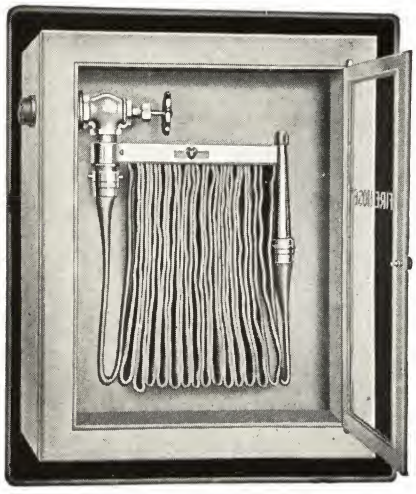
In certain institutions (insane asylums, prisons, etc.), it is necessary that hose be inaccessible, except by janitor's key. Our "Institutional" cabinet, having concealed hinges, and solid steel panel door, locked at bottom, top, and side with P. and F. Corbin Triplelox, has been found eminently satisfactory by engineers specializing in this field. This cabinet defies opening by force or tools.

Standard Cabinet

On the right is shown our standard cabinet recessed into the wall with only 1¼ in. trim projecting from the plaster. Ninety per cent of all installations being of recessed type, all of our standard units are so illustrated.



Standard Cabinet



Surface Type

Surface Type

Any Elkhart cabinet can be made up in this style which is necessary where the depth of the wall is not sufficient to recess the cabinet in the usual way. Door is furnished with D.S.A. or plate glass panel or with duo panel as desired. Trim 1½ in. wide. For outside dimensions add 3¾ in. to inside measurements.

Duo-Panel

The duo panel door, Style "D," having steel section at the bottom and plate glass panel at top, not only affords protection against breakage of glass, but also conceals over half of the installation. Made for every size, it can be furnished on any type of cabinet at the architect's discretion.



Style "D"

ELKHART 2½-GALLON FIRE EXTINGUISHERS AND CABINETS

Extinguishers

Elkhart soda and acid and foam type extinguishers are labeled and listed by the Underwriters' Laboratories while the soda and acid extinguisher is also approved by the United States Department of Commerce Steamboat Inspection Service, and Factory Mutual Fire Insurance Companies.

Fire department insurance regulations require one Underwriters' approved 2½ gallon soda and acid extinguisher for every 2000 feet of floor space.

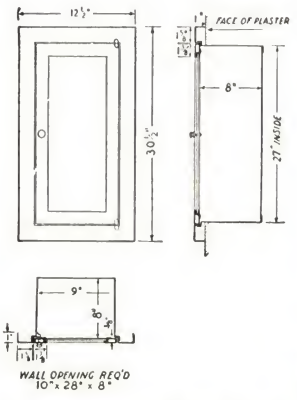
Extinguisher Cabinets

Adding greatly to the appearance of a building, extinguishers placed in cabinets also are more likely to be properly charged and serviced.

Made in either Elkhart or Hoosier construction, these extinguisher cabinets are provided with either D.S.A. or plate glass panel, or duo panel doors as shown. Cabinet hardware is identical to that installed on larger hose cabinets. All dimensions carefully worked out on adjacent line drawings.



Plate 950
Plate glass panel

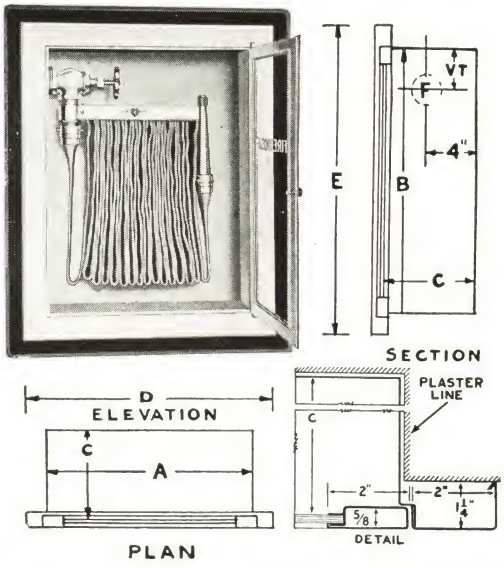


Note: Plate A-950, inside dimensions 12 x 36 x 8½ in., contains both extinguisher and fire axe.



Plate 950
Style "D" panel

HOSE UNIT WITH ONE ANGLE VALVE—PLATE C-910



For This Unit Specify

Elkhart standard cabinet, plate C-910.

Elkhart angle valve, plate No. 20 or plate 20-U.

Elkhart covered hose rack, plate No. 41 or 45, Style N with nipple.

Underwriters' first quality 1½-in. hose (length determined by floor space) coupled with Elkhart Slidewell expansion ring couplings (see last page).

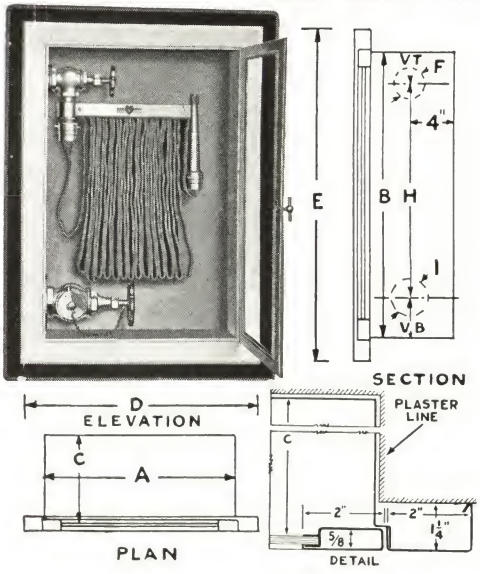
Elkhart 1½x12x½-in. polished brass, smooth bore, plain nozzle.

Note: *In buildings not over four stories high 1½-in. valve and 1½-in. hose are recommended. In buildings five or more stories high, a 2½-in. valve with local fire department thread should be installed to which 1½-in. linen hose can be attached by means of 2½x1½-in. reducing coupling, plate 335.*

Send for Specification Check List and Underwriters' Regulations.

Hose capacity, ft.	Hose and valve size, in.	Glass, in.	Cabinet dimensions shown in diagram, in.						Valve opening (F), in.	Leave rough opening, in.	
			A	B	C	D	E	VT		Width	Height
50	1½, 2, 2½	18x28	20¾	30¾	7½	25½	35½	3½	2, 3, 3	21½	31½
75	1½, 2, 2½	20x30	22¾	32¾	7½	27½	37½	3½	2, 3, 3	23½	33½
100	1½, 2, 2½	22x32	24¾	34¾	7½	29½	39½	3½	2, 3, 3	25½	35½
125	1½, 2	22x36	24¾	38¾	7½	29½	43½	3½	2, 3	25½	39½

HOSE UNIT WITH TWO ANGLE VALVES—PLATE C-920



For This Unit Specify

Elkhart cabinet, plate C-920.

Elkhart 1½-in. Angle Valve, plate No. 20 or plate No. 20-U.

Elkhart 2½-in. Angle Valve, plate No. 25 or plate No. 25-U with cap and chain.

Elkhart plate No. 45 or plate No. 41 hose rack.

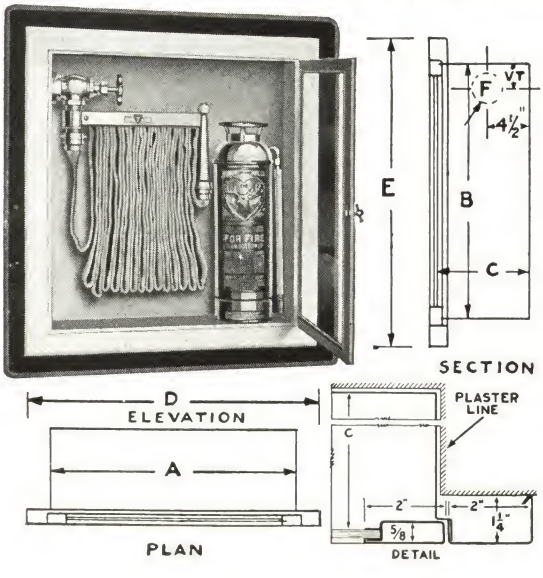
Underwriters' first quality 1½-in. hose (length determined by floor space) coupled with Elkhart Slidewell expansion ring couplings (see last page).

Elkhart 1½x12x½-in. polished brass, smooth bore, plain nozzle.

Send for Specification Check List and Underwriters' Regulations.

Hose capacity, ft.	Hose and valve size, in.	Glass, in.	Cabinet dimensions shown in diagram, in.					Valve center, in.			Valve opening, in.		Leave rough opening, in.	
			A	B	C	D	E	VT	H	VB	F	I	Width	Height
50	1½, 2½	18x28	20¾	30¾	8½	25½	35½	3	22¾	5	2	3	21½	31½
75	1½, 2½	20x30	22¾	32¾	8½	27½	37½	3	24¾	5	2	3	23½	33½
100	1½, 2½	22x36	24¾	38¾	8½	29½	43½	3	30¾	5	2	3	25½	39½

HOSE UNIT WITH ONE ANGLE VALVE AND 2½-GAL. FIRE EXTINGUISHER—PLATE C-915



For This Unit Specify

Elkhart cabinet C-915.

Elkhart angle valve, plate No. 20 or plate 20-U of the size required.

Elkhart Style N hose rack, plate No. 45 or plate 41.

Underwriters' first quality 1½-in. hose (length determined by floor space) coupled with Elkhart Slidewell expansion ring couplings (see last page).

Elkhart 1½x12x½-in. polished brass, smooth bore, plain nozzle.

Elkhart 2½-gal. extinguisher.

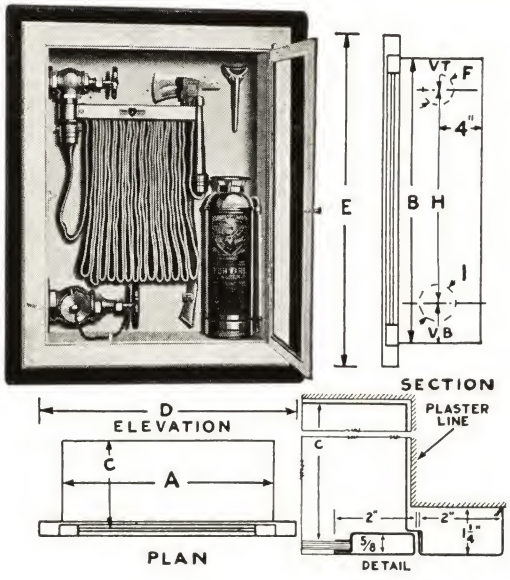
For complete description of Elkhart steel hose cabinets see preceding pages.

Send for Specification Check List and Underwriters' Regulations.

Hose capacity, ft.	Hose and valve size, in.	Glass, in.	Cabinet dimensions shown in diagram, in.						Valve opening (F), in.	Leave rough opening, in.	
			A	B	C	D	E	VT		Width	Height
50 75 100	1¼, 1½ 2, 2½	30x32	32¾	34¾	8½	37½	39½	6½ 5 3½	2 3	33½	35½

HOSE UNIT, CHICAGO STANDARD, WITH TWO ANGLE VALVES AND EQUIPMENT

PLATE C-901



For This Unit Specify

Elkhart cabinet, plate C-901.

Elkhart 1½-in. approved angle valve, plate 20-U for 150 or 250 lb. pressure as required.

Elkhart 2½-in. approved angle valve, plate 25-U, for 150 or 250 lb. pressure with local fire department thread, and with bronze cap and chain.

Elkhart semi-automatic Underwriters' approved hose rack, plate 41, Style N with 1½-in. nipple.

Underwriters' first quality 1½-in. hose (length determined by floor space) coupled with Elkhart Slidewell expansion ring couplings (see last page.)

Elkhart 1½x12x½-in. polished brass, smooth bore, plain nozzle.

Elkhart 2½-gal Underwriters' approved fire extinguisher.

Fireman's pick head axe with Underwriters' bracket No. 3.

Elkhart taber spanner with Underwriters' bracket No. 4.

(For Same Unit with One Valve C-916)

Send for Specification Check List and Underwriters' Regulations.

Hose capacity, ft.	Hose and valve size, in.	Glass, in.	Cabinet dimensions shown in diagram, in.					Valve center, in.			Valve opening, in.		Leave rough opening, in.	
			A	B	C	D	E	VT	H	VB	F	I	Width	Height
50 75 100	1½, 2½	28x36	30¾	38¾	8½	35½	43½	3	30¾	5	2	3	31½	39½

STANDPIPE AND HYDRANT UNITS

All Types—Siamese Connections

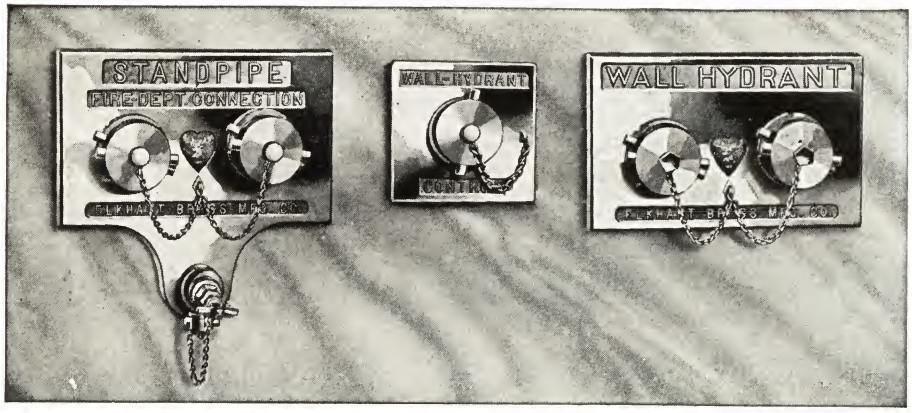


Plate 165 **Plate 164** **Plate 163**

Approved by Underwriters' Laboratories, Inc.

Plates 163, 164, 165 and 166

The three connections illustrated above comprise a complete private high pressure fire department unit. Pl. 165 siamese connection, with sill cock, is a means of getting water into a building under pressure from a fire department pumper. Pl. 163 hydrant connection, conversely, is simply a water outlet for fire department purposes, functioning exactly as does a city water curb hydrant. Pl. 164 valve control, is an elongated stem of a control gate valve inside the building which, when opened, automatically operates underwriter pumps in basement.

Flush type siamese and hydrant connections are designed to minimize projection into overly crowded city sidewalks. Siamese and hydrant bodies can be installed either in the wall, if space allows, or by means of pipe extension nipples, inside building. Bodies are furnished with pipe attachment in bottom or back, according to installation. Wall plates are secured by lock nuts on bronze inlet nipples.

Send for our blueprint illustrating a typical siamese and hydrant installation. Will also gladly furnish drawings of any of our connections, any size.

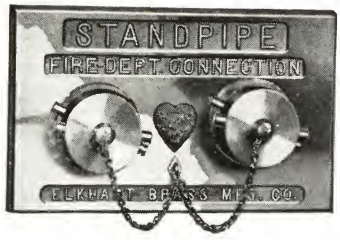
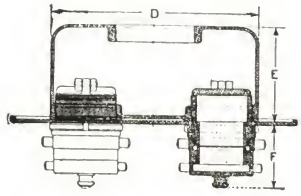
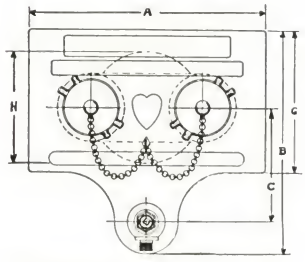


Plate 166

Same design as Plate 165 but without sill cock





DIMENSIONS, PLATES 163, 165 AND 166

4x2½x2½ In. Size

A	B	C	D	E	F	G	*H
16	15	7⅝	12	6¼	4¼	9½	5½

6x2½x2½ In. Size

16	15	7⅝	12	6½	4¼	9½	7½

*Height of body in wall.

Both can be furnished with pipe coming in from bottom, instead of back of body. Blue prints on request.

Combination Wall Plate Siamese with Sill Cock—Plate 155



Plate 155 Siamese Outlet — **Plate 154** Valve Control — **Plate 153** Wall Hydrant

Made of highly polished bronze. Fitted with two 2½-in. fire department inlets and 4 or 6-in. outlet. Has double clapper valves, plugs and chains, also one ¾ or 1-in. outlet at bottom of sprinkling hose. Complete with hose cap, chain and key.

DIMENSIONS

Greatest length, 19 in.; greatest width.....12½ in.
Stands out from wall.....10½ in.
Center of pipe opening to center of sill cock—
With 4-in. pipe..... 9⅝ in.
With 6-in. pipe.....10 in.

Wall Plate Siamese



Plate 156

Same siamese as plate 155 without the sill cock.

DIMENSIONS

Greatest height ..11⅛ in.
Greatest width ..12½ in.
Stands out from wall .....10½ in.

Boston and Philadelphia Siamese

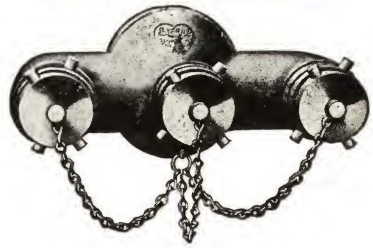


Plate 167

Plate 167 siamese meets all requirements and has been fully approved by city authorities of Boston. Made of bronze, straight pattern, compact requiring minimum of space. Has two or three 2½-in. inlets as required, each with automatic clapper valve.

Also acceptable to Philadelphia city authorities, and is largely used there, with 3-in. screw thread on center inlet and 2½-in. Jones connections on the two outside inlets.

Standard sizes are: 2½x2½x4 in., 2½x2½x2½x6 in.



Plate 9

New York City Siamese

Bearing the calendar number of the New York Board of Standards and Appeals, and approval of Underwriters' Laboratories, Inc., this siamese with independent gravity clapper valves, is of a very rugged construction throughout. Furnished with either galvanized iron plugs and chains or easy off swivel caps. Round or rectangular escutcheon according to architect's option.

Standard sizes are: 3x3x4 in., 3x3x5 in., 3x3x6 in.

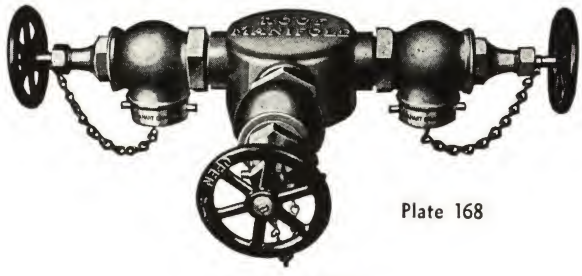


Plate 168

Roof Manifolds

Completing the fire line standpipe, this roof manifold equipped with Elkhart Underwriters' approved, Plate 25U 2½-in. bronze angle valve affords fire department access to water on roof. Valves are threaded to local fire department threads, while working pressure of valves is determined by amount to which they are subjected. Siamese body is made of cast bronze. Valves equipped with brass or iron caps and chains.

Standard sizes are: 2½x2½x4 in., 2½x2½x6 in., 2½x2½x8 in.

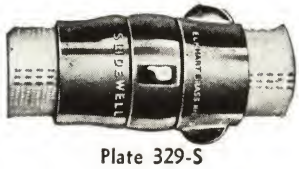


Plate 329-S

Elkhart Slidewell Coupling

Slidewell lug linen hose couplings will slide freely around corners, door jams, stair steps, etc., there being no sharp projections to prevent rapid transportation of nozzle to fire

Sidewalk Siamese



Plate 15

Standpipe connection with 90 degree siamese used where inlet pipe comes through the sidewalk. Complete connection consists of polished brass sleeve to cover the pipe, heavy brass escutcheon and polished brass siamese No. 10 with caps and chains to fit 3, 4 or 6-in. standpipe with 2½-in. inlets.

ELKHART VALVES FOR FIRE PROTECTION EQUIPMENT

Underwriter and New York Angle Valves

Approved by:

Underwriters' Laboratories, Inc. — *Board of Standards and Appeals, New York, N. Y.*

Body—Of special Underwriter alloy body considerably heavier than competitive valves.

Stuffing Box—Ample space provided for adequate packing.

Stem—With heavy thread, stem is made of a wear resisting alloy, analyzing 90% copper, 6.5% tin, 1.5% lead, 2% zinc.

Gland Follower—Beveled construction which insures firm pressure on packing.

Disc—Heavy Jenkin's type rubber discs used in all valves.

Joints—Accurately machined to allow repacking of valve when open and under pressure.

Wheel Handle—Arrow instantaneously indicates which way to turn wheel.



Plate 20U Female
Plate 25U Male



Plate 20 Female
Plate 25 Male

Elkhart Pattern Angle Valves

Made of high grade brass, specially designed for inside fire protection installations. All have full waterways and are furnished with renewable leather or rubber discs.

This valve is handsome in design and very durable. While always tight under pressure, it opens easily.

Standard weight valves are tested to 300 pounds. Extra heavy to 500 pounds pressure.

Standard finish is rough brass body, finished trimmings, iron wheel handle. Also furnished with body finished all over, and with nickel, chromium, or dead black plating, and with milled edge brass wheel.

DIMENSIONS OF ELKHART AND UNDERWRITER PATTERN ANGLE VALVES

Type of Valve	Elkhart Plate 20, 25 Valves						Underwriters' Approved			
Weight	Regular Weight				Extra Heavy		Regular, 150 lbs		Ex. H'y, 250 lbs	
Size, in.	1¼*	1½*	2	2½	1½	2½	1½*	2½	1½*	2½
Radius of Swing, in.	2¼	2½	3	3⅝	2¾	4	3⅛	4	3⅛	4⅛
Distance—Center to Face of Outlet, in.	2	2¼	2½	3¼	2½	3¾	2¾	3½	2¾	3¾
Same—With Cap and Chain, in.	3	3¼	3½	4¼	3½	4¾	3¾	4½	3¾	4¾
Diameter Hand Wheel, in.	3¾	3¾	4⅝	5¾	3¾	5¾	4¼	6¼	4¼	6¼
Height, Overall, in.	7¼	7½	9¼	11	8	13¼	10⅛	12¼	10⅛	13½

**Note:* 1x1¼ and 1x1½-in. Reducing Valves approximately same dimensions.

MEMORANDA

THE CONSOLIDATED EXPANDED METAL COMPANIES

Steelcrete System Bank Vault Construction

WHEELING, W. VA.

SALES OFFICES AND WAREHOUSES

ATLANTA, GA. BOSTON, MASS | BUFFALO, N. Y. CHICAGO, ILL. | CLEVELAND, OHIO DETROIT, MICH. | HOUSTON, TEX. NEW YORK, N. Y. | PHILADELPHIA, PA. PITTSBURGH, PA.

For Other Steelcrete Pages, see File Index

Steelcrete Concrete Reinforcing Mesh for Vault Protection

A diamond mesh fabric furnished in flat sheets cut from heavy plate.

Steelcrete 5-Point Protection

The Steelcrete System of bank vault protection consists of an orderly arrangement of thousands of strands of steel, thoroughly embedded in concrete, producing a network of entanglement that effectually resists cutting flame, drill, explosives, fire and falling loads.

In this entanglement of steel and concrete 5 points of protection are provided:

Point 1—Drills fail to penetrate.

Point 2—The cutting flame is helpless against concrete.

Point 3—Explosives lose their force in absorption by the thousands of steel strands.

Point 4—The thickness of the wall, ceiling and floor slabs minimizes the transmission of heat from the exterior to contents of the vault.

Point 5—Great structural strength successfully withstands impact of falling girders, heavy safes and other loads resulting from devastating fires.

As bank vault protection, the Steelcrete System presents such an impregnable barrier against attack and destruction that it has been selected by financial institutions of every kind in America and several foreign countries.



Section of Steelcrete Bank Vault

Placed either horizontally or vertically, Steelcrete forms a thick entanglement of steel that is proof within all practical limits against torch, drill, shock, fire and explosives. Concrete is poured through and around the steel matrix to form a wall of great structural strength

Great Structural Strength

The tremendous structural strength of a Steelcrete Vault Roof Slab was recently brought out in a series of tests, when a slab having a total depth of 18 in. carried a load of more than 1 ton per sq. ft. on a span of 30 ft. Tests conducted under the direction of the architects of the Federal Reserve Board have shown that a steel entanglement properly embedded in concrete constitutes the strongest and the most economical protection against attack. As a result of such tests the Steelcrete System was installed in the New York Federal Reserve Bank.

SAFE SUPERIMPOSED LOAD CARRYING CAPACITIES OF STEELCRETE VAULTS FOR VARIOUS THICKNESSES OF ROOF SLABS

Total thickness, inches		Load in pounds per square foot			
Roof slabs	Steelcrete mats	Span 15 feet	Span 20 feet	Span 25 feet	Span 30 feet
18	16	2125	1095	621	*363
24	20	3320	1725	988	584
36	32	6544	3464	2034	1257

The figures above represent safe loads determined from accepted formulas used in design of reinforced concrete, providing for a factor of safety of 4, together with standard assumption of values for steel and concrete. Loads governing ultimate failure of slab would represent values four to six times the above given loads.
*Tested to 2169 lb. per sq. ft.



Easily Erected by Any Skilled Contractor

The simplicity of the Steelcrete System makes it possible for any skilled contractor to successfully handle the erection. Working drawings making for rapid field erection are furnished by the manufacturers for each installation and the field engineers of the manufacturers keep in constant touch with the work, insuring an entirely satisfactory installation.

Estimates

The manufacturer, on request, will submit complete estimates upon the use of the Steelcrete System in any type or size of bank vault.

There are lighter and more economical systems of Steelcrete for every type of vault—such as Fur Storage and Record Vaults.

DIEBOLD SAFE & LOCK CO.

FACTORY AND GENERAL OFFICES
CANTON, OHIO

BRANCH OFFICES

BOSTON, MASS. CHICAGO, ILL. CLEVELAND, OHIO DETROIT, MICH. WASHINGTON, D. C. NEW YORK, N. Y. PHILADELPHIA, PA. PITTSBURGH, PA. ST. LOUIS, MO. ST. PAUL, MINN.

SOUTHWESTERN DISTRIBUTOR—SO. CALIFORNIA SAFE CO., Los Angeles, Calif.

DEALERS IN ALL PRINCIPAL CITIES

For Our United Metal Products Division, see File Index

LOCAL REPRESENTATIVE

FLAT SILL RECORD ROOM AND INSULATED VAULT DOORS

Development of DIEBOLD Record Room and Vault Doors—Independent tests made by the Underwriters' Laboratories, Inc., published in their Report SP-1.669 on November 30, 1927, on an uninsulated steel plate type door proved conclusively the need of doors affording much greater protection in this class. The door tested was typical of the old style plate door construction.

The old style plate door failed the standard test at the end of 10 minutes with inside doors open, and at the end of 27½ minutes with inside doors closed; both when fully grouted in the opening.

The Underwriters' Laboratories, Inc., reported that the old style door offered uncertain protection even to this small degree because proper grouting of vestibule and closing of inside doors could not be guaranteed in actual practice.

DIEBOLD Record Room and Vault Doors were developed by our engineers in order to meet the need for doors offering known and reliable degrees of protection. All doors have been designed to overcome the weaknesses in construction displayed by the Underwriters' tests of the old style plate door.

Construction—The DIEBOLD line of labeled Record Room and Fire-resistive Vault Doors includes doors affording from 30 minutes to 6 hours fire-resistance based upon standard tests.

How to Build Fire-Resistive Vaults and Record Rooms—and Select the Doors

The most authentic recommendations for this purpose are those prepared by the National Fire Protection Association. We have reprinted them in condensed form with cross references for our vault and record room doors. Complete copies will be gladly furnished.

"Protection Headquarters"

For over 80 years the DIEBOLD SAFE & LOCK CO. has been successfully engaged in the production and marketing of all types of equipment for the protection of records, money, and wealth from fire, burglary, and holdup.

The complete line includes the widest range of protective equipment ever offered by one manufacturer.

Burglar-resistive Equipment
Bank and Safe Deposit Vault Doors
Safe Deposit Boxes
Vault Lining and complete vault equipment

Holdup Protection Equipment
Delayed Control Timelocks
Electric Silent Signal Combination Locks
Holdup Cashgards
Counter Cashgards
Cashgard Chests

Record Systems
Sectional Drawer Visible Files
Swinging, Wall, and Desk Reference Panels
Reveldex Filing Systems
Cardineer Filing Systems

Fire-resistive Equipment
Electric Rekordesk Safes
Ledger Tray Safes
Office and Home Safes
Vault Doors
Record Room Doors

Hollow Metal Equipment
(United Metal Products Div. See File Index)
Hollow Metal Panel Doors, Frames, and Trim
Hollow Metal Flush Doors, Frames, and Trim
Elevator Entrances
Extensible Steel Partitions
Cold Rolled Mouldings
Eldoorobe School Room Wardrobes

Government Vault and Closet Doors—These doors are available built to Federal Government Specifications and drawing M-352-M. Detailed information furnished on request.

Co-operative Service to Architects

Our Engineering Department together with the entire personnel of our various branch offices is at the disposal of the architects or contractor. Sketches and estimates will be gladly furnished without charge or obligation.

RECOMMENDED WALL THICKNESSES:

(1) Ground Supported Vaults—See table on this page.

(2) Structure Supported Vaults—

(A) The thickness of walls shall be equal to those listed on the table on this page for the top stories of ground supported vaults.

(B) The minimum thickness of brick or plain concrete may be 8 in. for 4-hour vaults . . . 6 in. for 2-hour vaults.

(C) Hollow clay tile, hollow concrete blocks, or hollow walls of brick 8 in. thick, plastered on both sides may be used for 2-hour vaults.

(3) Record Rooms—

Interior walls shall be of fire-resistive construction with a fire-resistive classification of at least 2 hours. Recommended material and thickness as follows:

Material and Thickness—
Reinforced concrete, 4 in.
Plain concrete, 6 in.
Brick, 8 in.
6-in. hollow tile, 6-in. concrete block, or 6-in. gypsum block, plaster on both sides, 7 in.

MINIMUM WALL THICKNESS FOR GROUND SUPPORTED VAULTS RECOMMENDED BY THE NATIONAL FIRE PROTECTION ASSOCIATION, BOSTON, MASS.

Six-hour Vaults					Four-hour Vaults					Two-hour Vaults					
	Kind of wall construction					Kind of wall construction					Kind of wall construction				
			Protected steel or reinforced concrete frames					Protected steel or reinforced concrete frames					Protected steel or reinforced concrete frames		
Number of stories counting from top down	Reinforced concrete, in.	Brick or plain concrete, in.	Reinforced concrete panels, in.	Brick or plain concrete panels, in.	Number of stories counting from top down	Reinforced concrete, in.	Brick or plain concrete, in.	Reinforced concrete panels, in.	Brick or plain concrete panels, in.	Number of stories counting from top down	Reinforced concrete, in.	Brick, in.	Hollow clay tile or concrete block, in.	Reinforced concrete panels, in.	Brick or plain concrete panels, in.	Hollow clay tile or concrete block panels, in.
Top	10	12	10	12	Top	8	12	8	12	Top	6	8	12	6	8	12
2nd	10	12	10	12	2nd	8	12	8	12	2nd	8	12	12	8	12	12
3rd	10	12	10	12	3rd	10	12	10	12	3rd	10	12	16	10	12	16
4th	12	16	10	12	4th	10	16	10	12	4th	10	16	20	10	12	16
5th	12	16	12	16	5th	12	16	12	16	5th	12	16	.....	12	16	20
6th	12	20	12	16	6th	12	16	12	16	6th	12	16	.....	12	16	20
7th	.....	.....	12	16	7th	.....	.....	12	16	7th	.....	.....	.....	12	16	20
8th	.....	.....	12	16	8th	.....	.....	12	16	8th	.....	.....	.....	12	16	20
9th	.....	.....	12	16	9th	.....	.....	12	16	9th	.....	.....	.....	12	16	20
10th	.....	.....	14	16	10th	.....	.....	12	16	10th	.....	.....	.....	12	16	20

Note: In the lower stories of buildings over two stories in height the minimum thickness (of walls in six- and four-hour vaults) shall in no case be less than 12 in. for reinforced concrete nor 16 in. for brick.

GENERAL SPECIFICATIONS

DIEBOLD FLAT SILL RECORD ROOM AND VAULT DOORS

DIEBOLD Record Room and Vault Doors are designed and tested to provide 6, 4, 2, 1, and ½ hours fire-resistance to balance hazards of like degrees. Ask the DIEBOLD Man to check any risk with the DIEBOLD Fire Hazard Analysis Chart and recommend the minimum degree of protection required . . . there is no obligation for this protection service.

Labeled Protection—Representative doors are illustrated with specifications for all doors on this and the next two pages. Underwriters' Laboratories, Inc., labels are illustrated with the doors on which they are used. All doors bear SMNA labels similar to the one illustrated here.



Reduced Insurance Rates—All DIEBOLD Record Room and Vault Doors take Class "B" Mercantile Safe Burglary Insurance rates. All doors are equipped with the Underwriters' Laboratories, Inc., labeled Relocking Device that entitles users to a 10% preferential insurance discount.



"Locked-in" Danger Eliminated—All DIEBOLD Record Room and Vault Doors are equipped with an Unlocking Device that enables anyone locked in the vault to escape and relock the door again without disturbing the combination lock.

Finish—Olive green with gold decorations. Handles and dial knobs are black bakelite. Trim, buffed nickel.

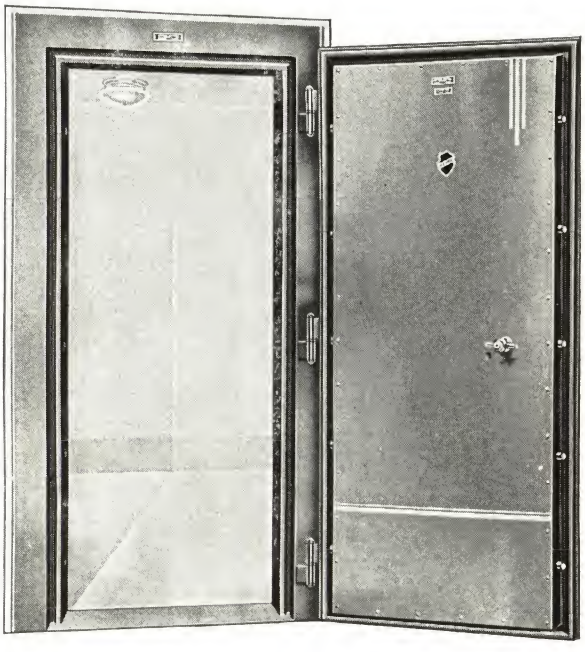
Optional Specifications—***At Reduced Cost***—Either or both the Relocking Device and Unlocking Device may be omitted.

At Extra Cost—Special grained and flat finishes. Special depth vestibules and inside doors. DIEBOLD Special Day Gate.

6, 4, 2-HOUR FLAT SILL FIRE-RESISTIVE VAULT DOORS

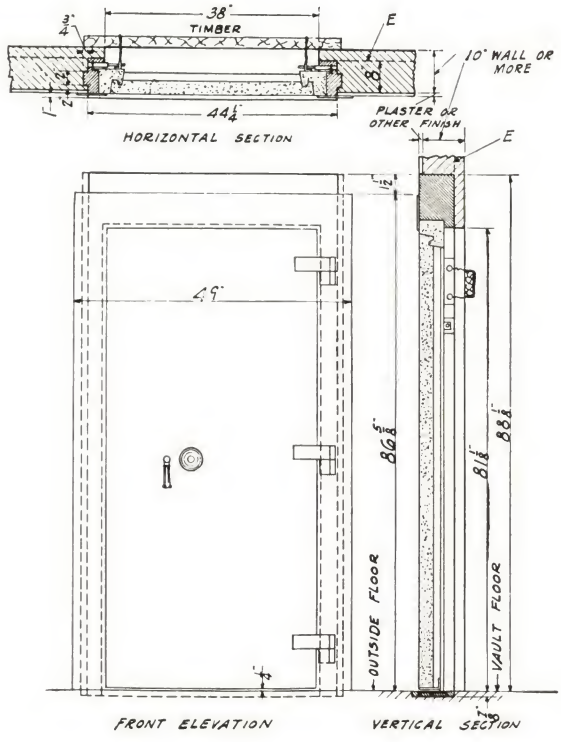
Clear Opening 78 In. High x 32 In. Wide

Style	Fire-resistive classification	Weight, lbs.	
		Shipping	Net
No. 2156	6-hour (illustrated)	1650	1425
No. 2154	4-hour	1550	1325
No. 2152	2-hour	1200	1035



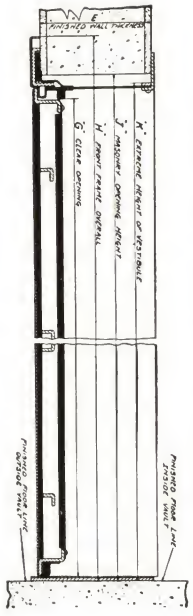
These doors are recommended for the protection of vital, irreplaceable records, maps, drawings, and valuable merchandise. The only difference in the doors is the thickness of insulation.





Installation Drawing—Dimensions are the same for all doors, except that the No. 2152 door is built for a wall 8 in. thick or more, and the wall thickness between dotted line "E" and the front wall should be 6 in. instead of 8 in., as shown.

1, ½ HOUR AND UNINSULATED FLAT SILL RECORD ROOM DOORS



No. 2151 1-Hour (illustrated)
No. 05–25 ½-Hour
No. 04-25 Not Insulated

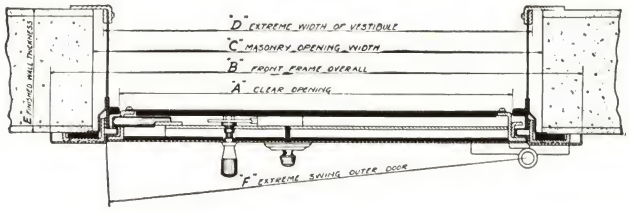
The No. 2151 and the 05–25 Doors are designed for moderate fire risks. They are recommended for the protection of records classified as "Important" by the National Fire Protection Association.

The No. 04–25 Door is exactly the same as the 05–25 ½-hour door, except that it is not insulated for fire protection.

See section drawings and table for masonry, clear opening, and floor level dimensions. Vertical on left . . . horizontal below.

	2151	05-25	04-30
A	32″	28½″	28½″
B	42⅛″	38¼″	38¼″
C	37″	33″	33″
D	34⅜″	30½″	30½″
E	9″	9″	9″
F	34¼″	30¼″	30¼
G	75 9/16″	75¾″	75¾″
H	80 13/16″	80 13/16″	80 13/16″
J	79″	79″	79″
K	76 15/16″	76 15/16″	76″ 15/16
Shipping weight, lbs.	575	400	400
Net wt., lbs.	420	255	255

Note: No. 05-25 Door available with clear opening 32″ wide by 75 9/16″ high—all other dimensions the same as No. 2151 Door.





No. 2151 Doors Bear This Label



No. 05-25 Doors Bear This Label

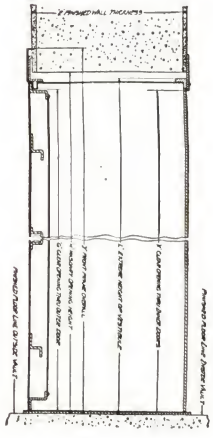


No. 04-25 Doors Bear This Label



No. 2151 1-Hour Record Room Door

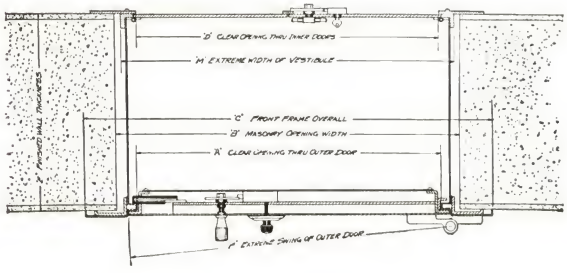
½ HOUR FLAT SILL RECORD ROOM DOORS WITH INNER DOORS



Nos. 04–30 and 04–35 Record Room Doors are recommended wherever inside doors are desired for auxiliary protection. No. 04–35 Door is built with a wide opening to permit the use of busses.

See section drawings and table for masonry clear opening and floor level dimensions. Vertical on left . . . horizontal, below.

	04-30	04-35
A	28½″	35½″
B	33″	40″
C	38¼″	45¼″
D	27″	34″
E	18″	20″
F	30¼″	37¼″
G	75¾″	75¾″
H	79″	79″
J	80 13/16″	80 13/16″
K	75⅜″	75⅜″
L	77″	77″
M	30⅝″	37⅝″
Shipping weight, lbs.	500	650
Net wt., lbs.	365	490

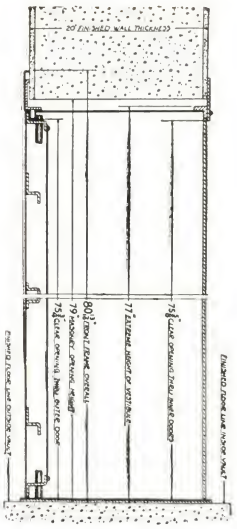






No. 04-30 Record Room Door

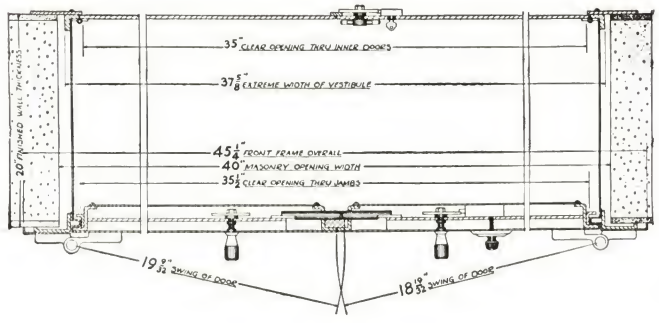
½-HOUR FLAT SILL DOUBLE RECORD ROOM DOORS WITH INNER DOORS





The No. 04-40 Double Record Room Door is built with an extra wide opening to facilitate the use of busses. It is recommended for use where a very wide opening is needed and inner doors are required for auxiliary protection.

See section drawings and table for masonry, clear opening, and floor level dimensions. Vertical on left . . . horizontal, below.





No. 04-40 Double Record Room Door

ELDOOROBE—THE UNIT-CONTROLLED, MULTIPLE WARDROBE

Style No. 100-01

Ideal for schoolrooms, gymnasiums, jury rooms, and lodge rooms. Provides positive, foolproof, one-person control over the garments of a group of people.

The standard Eldoorobe consists of 7 unit-controlled wardrobes, one control wardrobe, one master wardrobe, and one supply cabinet and will care for the garments of 40 people. Additional capacity may be obtained if desired.

The Eldoorobe is simple and easy to operate. All doors open flush with the front of the unit, except those of the master and control wardrobes and the supply cabinet. They swing 180° to avoid projections into the aisles.

The complete unit is attractively finished in schoolroom brown or olive green. It may be set up free standing or recessed in rough openings left in the building walls.

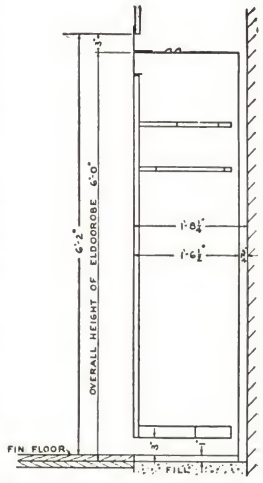
Construction—Eldoorobes are constructed of high grade furniture stock steel formed into strong, rigid, non-vibrating units. A 3-in. opening at the bottom and the perforated top thoroughly ventilate the Eldoorobe.

Dimensions—6 ft. high, 15 ft. 2 in. wide, 18⅛ in. deep over all. 7 L-shaped wardrobes are each 5 ft. 4 in. high, 17¼ in. wide, 18⅛ in. deep inside.

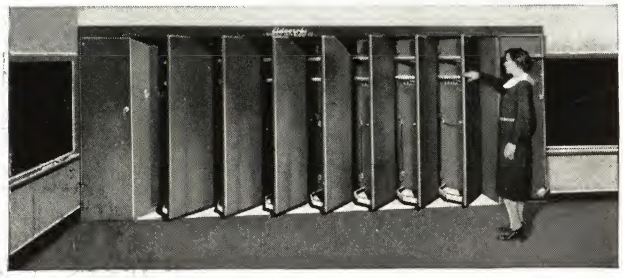
Weight—Net, 1050 lbs. Shipping, 1500 lbs.

Installation—The Eldoorobe is shipped with complete instructions for assembling.

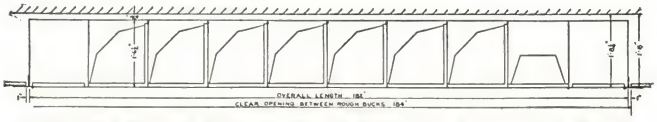
See drawings for size of rough, unfinished wall opening to be left when Eldoorobe is to be recessed in wall.



Vertical Section Showing Closed Eldoorobe Recessed in Rough Unfinished Opening



Girl Opening Eldoorobe—Control Wardrobe Open on Right



Horizontal Section Showing Closed Eldoorobe Recessed in Rough Unfinished Opening

THE MOSLER SAFE CO.

GENERAL SALES OFFICES AND FACTORIES

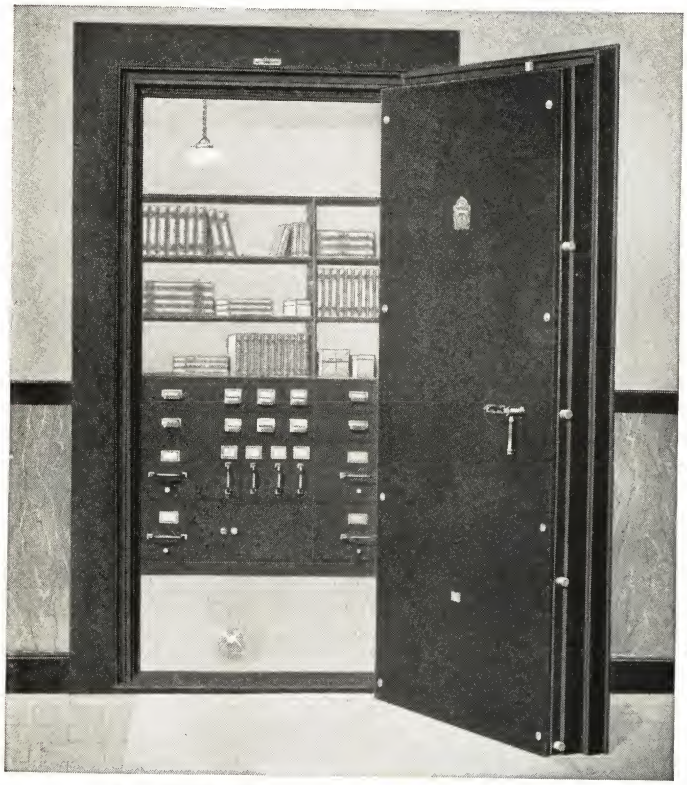
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KANSAS CITY, MO.
AND OTHER PRINCIPAL CITIES

UNDERWRITERS' LABELED INSULATED FLAT SILL FIRE RESISTIVE DOORS, VAULT DOORS AND RECORD ROOM DOORS. THESE DOORS CAN BE EQUIPPED WITH INSIDE DAY GATES.



Nos. FS-2R, FS-4R, FS-6R—Insulated Vault Door



Nos. FS-32R, FS-1R—Record Room Doors

Insulated Flat Sill Doors bear the Underwriters' Laboratories, Inc. label, indicating the fire classification according to test; combined with which is the relocking device label. They also carry the Safe Manufacturers National Association label indicating the classification. Doors are finished in Mosler Standard Wrinkle Green but may be obtained in other finishes if required.

The Mosler Emergency Escape Handle is standard on all insulated vault and record room doors as shown. It may be omitted if desired.





SPECIFICATIONS

FS-32R and FS-32L One-Half Hour Record Room Doors

Clear door opening: 78 in. high, 32 in. wide. Over-all dimensions: 83 5/16 in. high, 42½ in. wide. Door projection 35¾ in. from finished wall when door is open 90°. Bolts: ¾ in. diameters; 3 operating to the front, 3 interlocking bolts at rear. Lock: Mosler three-tumbler combination. Underwriters' labels for one-half hour fire resistance and for relocking device, and Safe Manufacturers National Association label.

FS-1R and FS-1L One-Hour Record Room Doors

Clear door opening: 78 in. high, 32 in. wide. Over-all dimensions: 83 5/16 in. high, 42½ in. wide. Door projection: 35¾ in. from finished wall when door is open 90°. Bolts: ¾ in. diameters; 3 operating to the front, 3 interlocking bolts at rear. Lock: Mosler three-tumbler combination. Underwriters' labels for one-hour fire resistance and for relocking device, and Safe Manufacturers National Association label.

FS-2R and FS-2L Two-Hour Vault Doors

Clear door opening: 78 in. high, 32 in. wide. Over-all dimensions: 84½ in. high, 45 in. wide. Door projection: 37 in. from finished wall when door is open 90°. Bolts: ¾ in. diameters; 5 locking bolts, operating 4 to the front, 1 to the top, interlocking tongue and groove at rear. Lock: Mosler three-tumbler combination. Underwriters' labels for two-hour fire resistance and for relocking device, and Safe Manufacturers National Association label.

FS-2D Two-Hour Double Door Vault Front

Clear door opening: 78 in. high, 40 in. wide. Over-all dimensions: 84½ in. high, 53 in. wide. Door projection: right-hand door, 23 in., left-hand door 25⅜ in. from finished wall when doors are open 90°. Bolts: ¾ in. diameters; right-hand door, 5, operating 4 to the front and 1 to the top; left-hand door, 2, operating 1 to the top and 1 to the bottom. Interlocking tongue and groove at hinge side of each door. Lock: Mosler three-tumbler combination. Underwriters' labels for two-hour fire resistance and for relocking device, and Safe Manufacturers National Association label.

FS-4R and FS-4L Four-Hour Vault Doors

Clear door opening: 78 in. high, 32 in. wide. Over-all dimensions: 85½ in. high, 46 1/16 in. wide. Door projection: 38 1/16 in. from finished wall when door is open 90°. Bolts: ¾ in. diameters; 6 locking bolts, operating 5 to the front, and 1 to the top with interlocking tongue and groove at rear. Lock: Mosler three-tumbler combination. Underwriters' labels for four-hour fire resistance and for relocking device, and Safe Manufacturers National Association label.

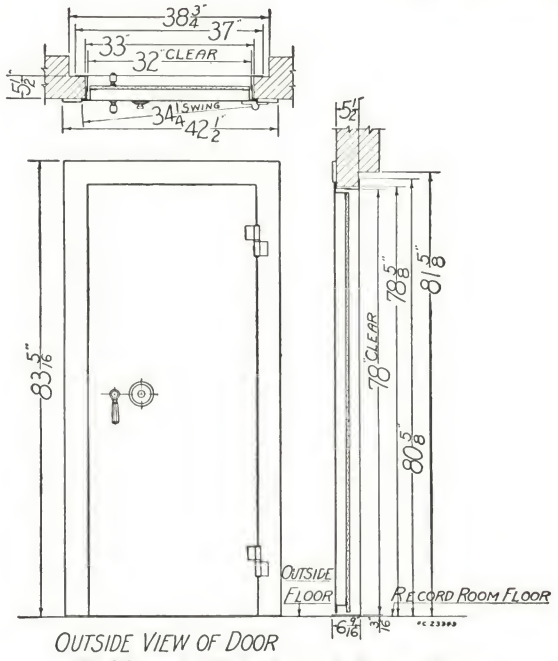
FS-6R and FS-6L Six-Hour Vault Doors

Clear door opening: 78 in. high, 32 in. wide. Over-all dimensions: 87¼ in. high, 50 in. wide. Door projection: 39 7/16 in. from finished wall when door is open 90°. Bolts: 1 in. diameters; 7 locking bolts, operating 4 to the front, 2 to the rear, 1 to the top, with interlocking tongue and groove at rear. Lock: Mosler four-tumbler combination. Underwriters' labels for six-hour fire resistance and for relocking device, and Safe Manufacturers National Association label.

Doors shown FS-32R, FS-1R, FS-2R, FS-4R and FS-6R have hinges on right side. If doors are required with hinges on left side specify FS-32L, FS-1L, FS-2L, FS-4L or FS-6L.

DETAIL DRAWINGS OF UNDERWRITERS' LABEL INSULATED VAULT AND RECORD ROOM DOORS

(See Specifications on Opposite Page)



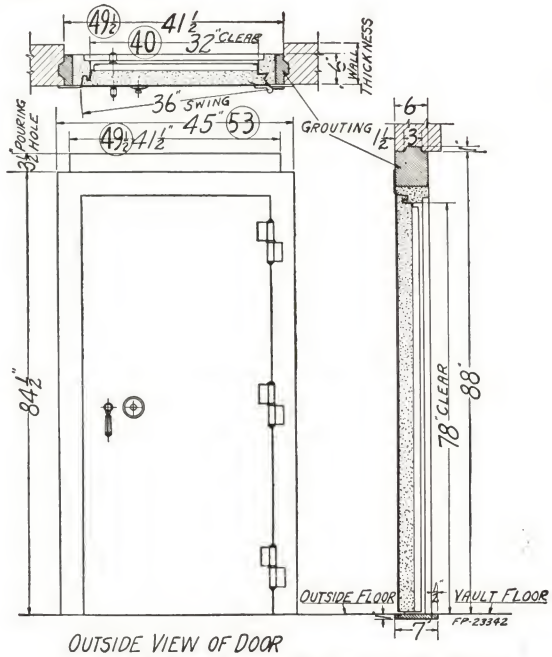
OUTSIDE VIEW OF DOOR

FS-32 and FS-1 Record Room Doors

The FS-32 bears the Underwriters' Laboratories, Inc., ½-hour fire classification and relocking device labels and the Safe Manufacturers National Association ½-hour label.

The FS-1 bears the Underwriters' Laboratories, Inc., 1-hour fire classification and relocking device labels, and the Safe Manufacturers National Association 1-hour label.

These doors do not require grouting.

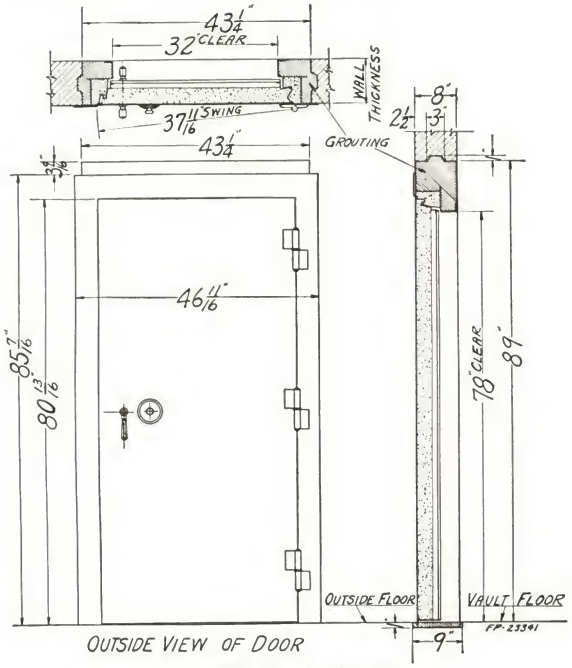


OUTSIDE VIEW OF DOOR

No. FS-2R and No. FS-2D Vault Doors

Note: Figures in circles indicate corresponding dimensions for the No. FS-2D Double Door, Two-Hour Vault Front.

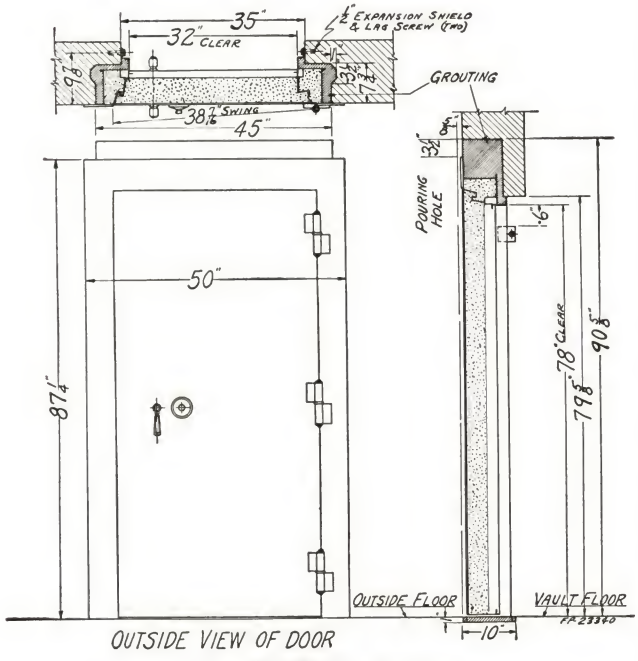
The No. FS-2R and No. FS-2D Vault Doors bear the Underwriters' Laboratories, Inc. and the Safe Manufacturers' National Association 2-hour labels.



OUTSIDE VIEW OF DOOR

No. FS-4R Vault Door

The FS-4R Vault Door bears the Underwriters' Laboratories, Inc. and Safe Manufacturers' National Association 4-hour label.



OUTSIDE VIEW OF DOOR

No. FS-6R Vault Door

The FS-6R Vault Door bears the Underwriters' Laboratories, Inc. and the Safe Manufacturers' National Association 6-hour label.

Detail installation instructions will be furnished on request.

For Door with Hinges on Left Side Specify No. FS-32L, FS-1L, FS-2L, FS-4L or FS-6L.

PLATE TYPE VAULT DOORS







No. 32-R Book and Storage Vault Door

If doors are required with hinges on left side specify No. 32-L.



No. 36-R Book and Storage Vault Door

If doors are required with hinges on left side specify No. 36-L.



No. M-352-M Post Office Vault Door

Door can be furnished with hinges on left side when specified.

SPECIFICATIONS

No. 28-R and 28-L Book and Storage Vault Doors

Wall opening: 76¾ in. high, 29 in. wide. Wall thickness: 5½ in. including plaster or other finish. Clear door opening: 76 in. high, 28 in. wide. Over-all dimensions: 81¾ in. high, 38⅜ in. wide. Door projection: 31¾ in. from finished wall when door is open 90°. Bolts: ¾ in. diameter; 3 operating to the front, 3 interlocking bolts in the rear. Lock: Mosler three-tumbler combination. Underwriters' label for relocking device. Safe Manufacturers National Association label.

No. 32-R and 32-L Book and Storage Vault Doors

Wall opening: 78¾ in. high, 33 in. wide. Wall thickness: 5½ in. including plaster or other finish. Clear door opening: 78 in. high, 32 in. wide. Over-all dimensions: 83⅛ in. high, 42½ in. wide. Door projection: 35¾ in. from finished wall when door is open 90°. Bolts: ¾ in. diameter; 3 operating to the front, 3 interlocking bolts at the rear. Lock: Mosler three-tumbler combination. Underwriters' label for relocking device. Safe Manufacturers National Association ½-hour label.

No. 36-R and 36-L Book and Storage Vault Doors

Wall opening: 78¾ in. high, 37 in. wide. Wall thickness: 5½ in. including plaster or other finish. Clear door opening: 78 in. high, 36 in. wide. Over-all dimensions: 83¼ in. high, 46⅜ in. wide. Door projection: 39¾ in. from finished wall when door is open 90°. Bolts: ¾ in. diameter; 3 operating to the front, 3 interlocking bolts at rear. Lock: Mosler three-tumbler combination. Underwriters' label for relocking device. Safe Manufacturers National Association label.

No. M-352-M U. S. Government Standard Post Office Vault Door

Wall opening: 88 in. high, 46 in. wide, 22 in. deep, including plaster and other finish. Clear door opening: 79¼ in. high, 36 in. wide. Over-all dimensions: 89 in. high, 52¾ in. wide. Door projection: 40 in. from finished wall when door is open 90°. Bolts: 1¼ in. diameter; 6 locking bolts, operating 4 horizontally, 1 to the top and 1 to the bottom. Lock: Mosler four-tumbler key-changing combination. This door does not carry the Underwriters' label because it is the standard required by the U. S. Government.

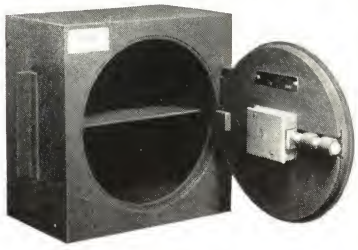
STEEL MONEY CHESTS FOR CHAIN STORES, OIL STATIONS, THEATRES, HOTELS, HOMES AND FOR GENERAL COMMERCIAL USES

INSULATED WALL SAFES

SAFE MANUFACTURERS NATIONAL ASSOCIATION
BURGLARY RESISTIVE CHEST
S.M.N.A. GROUP CATALOG NO.

BURGLARY-RESISTIVE CHESTS

Suitable for installation in the wall or closets of Residences, Clubs or Offices for protection of valuables and papers against theft. Insulated for fire protection in accordance with the Safe Manufacturers' National Association label No. 10, Group No. 9. Provided with angles for proper installation and can be concealed behind pictures, draperies, etc.



Wall Safe

Inside 11 in. high, 11 in. wide, 4½ in. deep clear. Outside 12 in. high, 12 in. wide, 7 in. deep body. Over all depth 8¼ in. Clear door opening 9½ in. Door equipped with high class combination lock with drill-resistant shouldered spindle designed to prevent forcible entry by driving the spindle.

Relocking device for operation in case of mechanical or explosive attack. Finished in Mosler Standard Wrinkle Green.

Special finishes to harmonize with surroundings can be supplied.

Can also be obtained in 5-in. body depth without insulation.

CHEST WITH FIRE-RESISTIVE INSULATION

Designed for installation in safe or concrete block for protection of valuables and papers against theft. Door and body lined with fire-resistive wall safe with angles provided on sides for wall installation.



Size: 12 in. high, 12 in. wide, 5 in. deep except for projection of lock. Outside: 13¾ in. high, 13¾ in. wide, 7 in. deep body. Over-all depth: 8¼ in. Door equipped with high class combination lock with drill-resistant shouldered spindle designed to prevent drilling or driving lock from door.

Relocking device for operation in case of mechanical or explosive attack.

"C" mercantile insurance rate.

Finished in Mosler Standard Wrinkle Green. Special finishes to harmonize with surroundings can be supplied.

Chest carries Safe Manufacturers' National Association label No. 10, group 7.

BURGLARY-RESISTIVE CHESTS

These chests are designed for use in Banks, Stores, Gasoline and Service Stations, Theatres and Hotels and any business where money and valuables are to be protected against burglary.



Burglar-Resistive Chest
Type E, H and X

These can be installed in any Mosler fire-resistive safe or in the building wall, closet, or used inside of vault.

Doors case-hardened, producing exterior highly resistant to drills and mechanical tools and a soft tough core to resist explosive shocks, etc. Body of type H and X case-hardened.

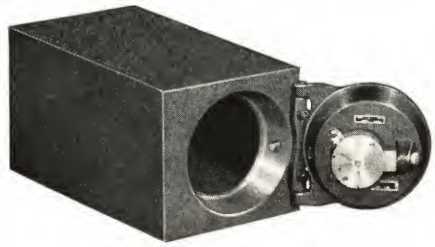
Type X tested and approved by Underwriters for one-hour resistance to burglary, including high explosives commonly used by burglars.

Type E chests take E Mercantile burglary insurance rate. Type H chests take H Bank and E Mercantile burglary insurance rate. Both are given 10% discount for Underwriters' Laboratories, Inc. labeled relocking device. Type X chest takes H Bank and F Mercantile rate with 10% relocking device discount from H rate.

Finished in Mosler Standard Wrinkle Green.

NATIONAL LINE

An ideal chest for small businesses or in the home where protection against burglary is wanted. Can be installed in a concrete block, fire-resistive safe, building wall or closet. Chest will be provided with angles for wall installation.



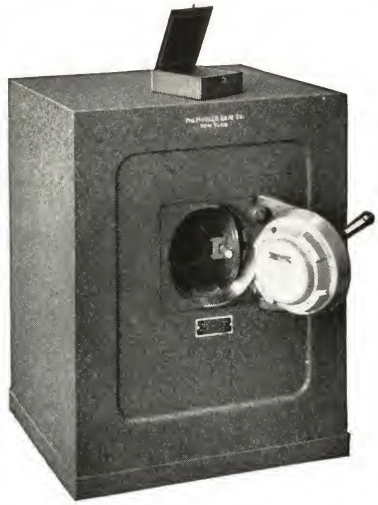
Burglary-Resistive Chest
National Line

Inside 5 in. high, 5 in. wide, 7⅛ in. deep clear. Outside 7 in high, 7 in. wide, 11⅞ in. deep over all. Also, inside 6 in. high, 6 in. wide, 7⅛ in. deep clear. Outside, 8 in. high, 8 in. wide, 11⅞ in. deep. Door opening 4⅝ in. Body 1 in. thick Door single piece forged steel 1½ in. thick, case-hardened. Combination lock has Underwriters' Laboratories, Inc., labeled relocking device accomplishing 10% discount from E Mercantile Insurance rate.

Finished in Mosler Standard Wrinkle Green. Special finishes to harmonize with surroundings can be supplied at slight additional cost.

CHESTS IN CONCRETE BLOCKS

Recommended for Chain Stores, Gasoline and Service Stations and any business activities where combined holdup and burglary protection is necessary. The weight of the concrete block is sufficiently heavy to prevent the equipment being readily hauled away. This equipment has been adopted as standard protection by the leading chain and mercantile organizations.



Burglary-Resistive Chest
in Concrete Block

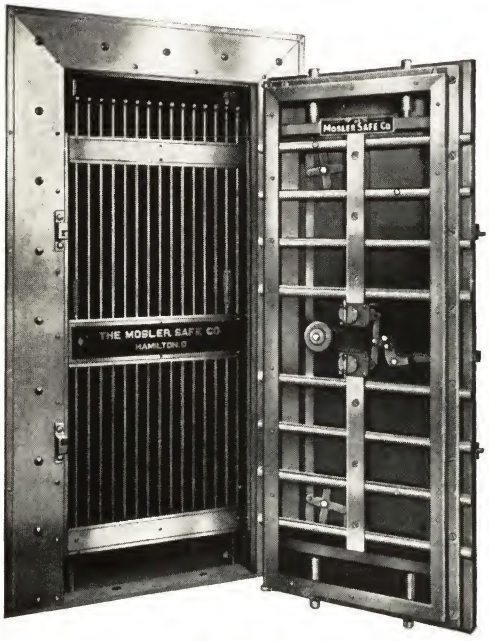
Concrete block heavily reinforced and chest securely anchored therein. Blocks covered with steel cladding. Chests available with top or side openings. Inner partition with circular door and dual control lock with relocking device provides holdup depository for accumulated reserve cash.

Standard size block 32 in. high, 26¼ in. wide, 23½ in. deep over all.

Finished in Mosler Standard Wrinkle Green.

Further Information for the Above Furnished on Request

SOLID STEEL DOORS FOR BUILDING AND LOAN, FINANCE COMPANIES, JEWELERS, FURRIERS, SILK, STORAGE WAREROOMS AND HOTEL VAULTS



No. 64—Vault Door

The No. 64 Vault Door, which is 1½" in net solid steel thickness, is illustrative of the doors for Building and Loan, Finance companies, jewelers, furriers, silk storage warerooms, hotel and other vaults. They can be furnished in any thickness to meet requirements of the insurance manual.

Doors can be furnished in painted or polished steel finish.

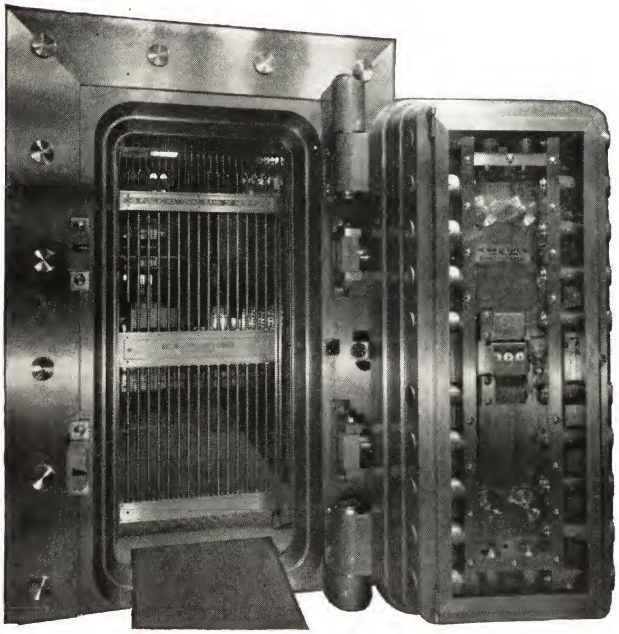
Our complete line of these doors offers a wide selection to meet the requirements of any business.

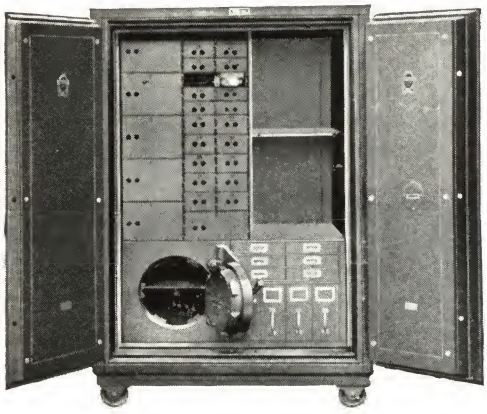
Specifications will be sent on request.

THE UNITED STATES GOVERNMENT VAULT DOORS AT FORT KNOX, KENTUCKY
were built by
THE MOSLER SAFE COMPANY
These vaults contain more gold than any other vaults in the world.

BANK AND SECURITY EQUIPMENT

Mosler Bank Vaults and Security Equipment are used by the United States Government, by Foreign Governments, and by Banks and Financial Institutions, both large and small, throughout the world.





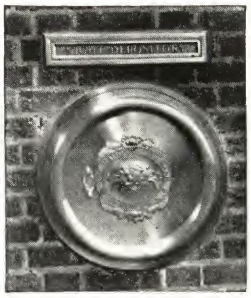
Small Bank or Hotel Safe with Safe Deposit Boxes and Chest

Can also be fitted with shelves and filing equipment for mercantile houses, etc.

Bank Vault Doors are built in any size or thickness.

BANK AND SECURITY EQUIPMENT

Night Deposit Safes



Bronze Entrance Door of Night Deposit Safe

For installation in building walls to facilitate depositing after banking hours, Sundays or holidays. A metal chute is installed in building wall with receiving safe located on first floor or in basement as required. This safe takes low insurance rate.

The Underwriters' Laboratories, Inc. labeled relocking device accomplishes a 10% discount from this rate.

Outer circular entrance door is of bronze ornamented with appropriate bronze seal or with individual seal of bank.

Tellers' Lockers Equipped With Delay Period Timelock

For protecting reserve cash against holdup, also for protection of payrolls put up in advance but held until called for. Unit remains constantly locked and can be opened only after predetermined delay period necessary before timelock reaches opening point. Timelock can be attached at factory to locker with rotary hopper top as illustrated or with a baffle-protected slot in door, also to inner doors of burglary-resistive chests, fire-resistive design chests, etc. Lockers, chests and safes furnished in a wide range of sizes.

Finished in Mosler Standard Wrinkle Green.



Special Tellers' Locker with Hopper Depository Top Suitable for Payrolls

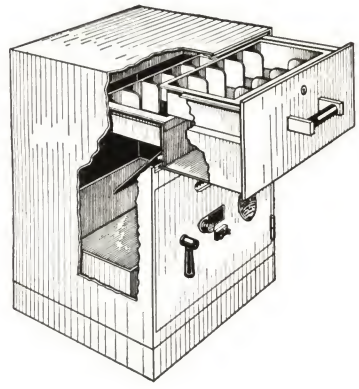
MOSLER COUNTER-CASH PROTECTOR



The Mosler Counter-Cash Protector, offering protection against holdup, is designed especially for use of Bank Tellers, Tax and Toll Collectors or any businesses where substantial sums of cash are necessary to transact business. The main drawer does not slam but the upper current cash drawer therein, which acts as a screen for the reserve drawer, slides over the top of the reserve drawer to afford access to the reserve cash. The lower or reserve drawer, under remote control, moves back and dumps its contents by pressing any one of a series of buttons throughout the bank or store. Meanwhile the upper or screen drawer remains latched in a forward position.

Over-all dimensions 20½" wide, 19½" deep. Height to suit conditions.

Finished in Mosler Standard Wrinkle Green.



MOSLER PRODUCTS

Burglary-Resistive Equipment

Bank Vault Doors
Steel Vault Linings; Vault Ventilators
Book and Storage Vault Doors
Night Deposit Safes
Armored Steel Chests
Silver, Fur, Storage Wareroom Vault Doors
Manganese Safes

Security Equipment

Safe Deposit Boxes
Tellers and Security Lockers

Anti-Holdup Equipment

Counter-cash Protectors
Electrically and Manually Operated Delay Period Timelocks

Fire-Resistive Equipment

Cabinet Type Safes for Steel Files—Swinging and Receding Door Models
Filing Units
Office Safes
Modernistic Safes for Homes
Hotel and Club Safes
Counter-height Safes
Wall Safes
Insulated Flat Sill Vault Doors

Miscellaneous

Timelocks
Safe Deposit Box Locks
Combination Locks for vault and safe equipment

Government Vault Doors and Closet Doors built to Government Specifications and Drawings M-352-J, K, L and M.

MOSLER SERVICE

Design, Plans, Specifications

Our engineers and the personnel of our branches are at the immediate disposal of banks, architects and contractors, without obligation, in preparing plans and specifications.

Inspection, Repair, Cleaning

We also maintain a complete cleaning, inspection and maintenance service for vault and safe equipment. Expert mechanics for regular or emergency service are available.

YORK SAFE AND LOCK COMPANY

Manufacturers and Builders of the World's Greatest Vaults

FACTORY AND HOME OFFICE

YORK, PA.

BALTIMORE, MD., 7 West Redwood Street
BOSTON, MASS., 98 Sudbury Street
CHICAGO, ILL., 217 West Monroe Street
CLEVELAND, OHIO, Hippodrome Building
DETROIT, MICH., 2359 National Bank Building
HOUSTON, TEX., 902 Louisiana Street
HONOLULU, HAWAII
LOS ANGELES, CAL., 800 East 9th Street
MIAMI, FLA., 2900 S. W. 4th Street
MONTREAL, QUE., 830 St. James Street, West
NEW HAVEN, CONN., 273 State Street
NEW YORK, N. Y., 102 Maiden Lane
Uptown Office, 101 Park Avenue
HAVANA, CUBA
PARIS, FRANCE
DEALERS IN PRINCIPAL CITIES
PHILADELPHIA, PA., 711 Chestnut Street
PITTSBURGH, PA., 319 Grace Street
ST. LOUIS, MO., 408 North 4th Street
SAN FRANCISCO, CAL., 200-218 Howard Street
SEATTLE, WASH., 112 Third Avenue, So.
WASHINGTON, D. C., 911 New York Avenue, N. W.
TOKYO, JAPAN
SHANGHAI, CHINA

YORK PRODUCTS

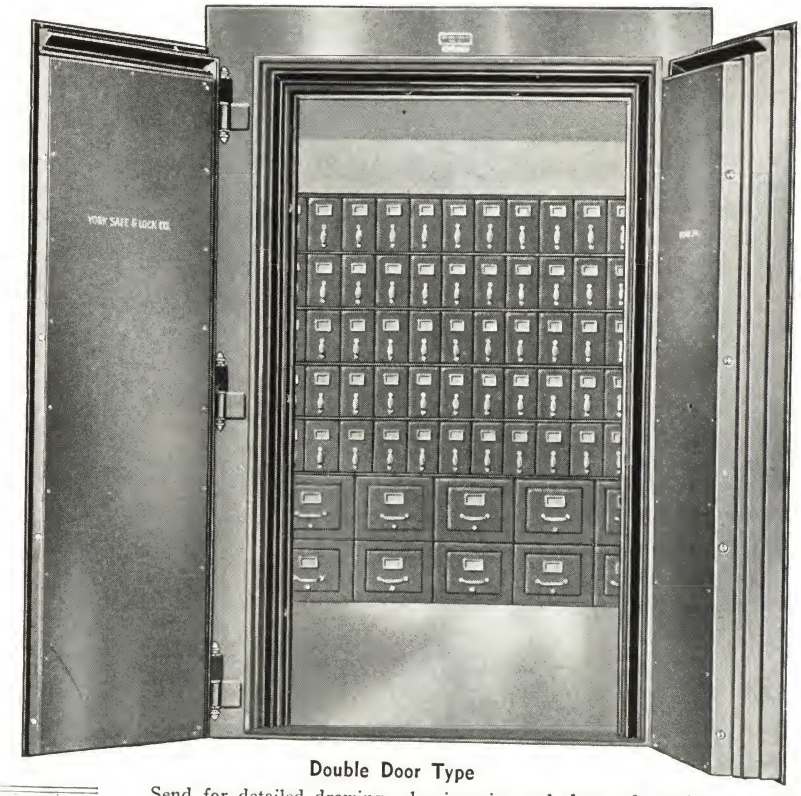
Bank Vault Equipment; Safe Deposit Boxes; Book and Storage Vault Doors; Safes bearing Underwriters' Fire Labels and T-20 Labels; Chests bearing Underwriters' Relocking Device Labels and X-60 Labels.

We have complete catalogues on the different products we manufacture. Write for your copy.

YORK UNDERWRITERS' LABELED VAULT DOORS—ALL FLAT SILL



Single Door Type



Double Door Type

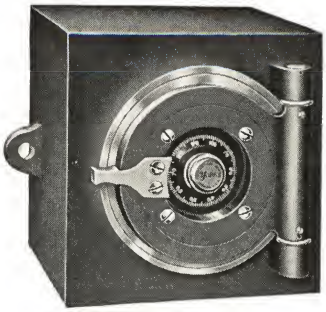
No.	Class	Mason's opening, in. High	Mason's opening, in. Wide	Door opening, in. High	Door opening, in. Wide
Single Door Type					
7632-½	Half-hour Label	78 9/16	35 3/16	76	32
7632-1	One-hour Label	78 9/16	35 3/16	76	32
7832-2	Two-hour Label	85 3/8	44 1/4	78	32
7832-4	Four-hour Label	86 5/16	46 1/8	78	32
7832-6	Six-hour Label	88 7/8	50 5/8	78	32
Double Door Type					
7840-2	Two-hour Label	85 5/8	52 1/4	78	40
7840-6	Six-hour Label	88 7/8	58 5/8	78	40

Send for detailed drawings showing size and shape of opening in wall to receive Vault Door. A saving to the Contractor is realized as the construction of the frame is self-contained. *It does not require any form work* to be built around the Door during installation, and as the grouting is done from the back, the wall around frame on the front does not need patching and refinishing later.

Stock Doors are constructed to fit minimum wall thicknesses. Vestibules can be made to fit any wall thickness.

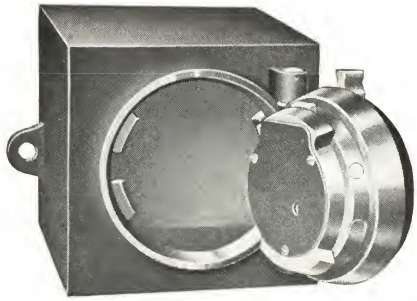
Vault Entrances are equipped with Underwriters' Approved Relocking Device and Inside Escape Device, unless otherwise ordered.

YORK WALL CHESTS



No. 530. Closed

Chest		Dimensions, in. Height	Width	Depth
No. 475	Outside	10	10	15 13/32
	Inside	8	8	11 5/8
No. 540	Outside	9	9	8
	Inside	8	8	5
No. 530	Outside	8½	8½	8¾
	Inside	7½	7½	5⅞
No. 531	Outside	8½	13	8¾
	Inside	7½	12	5⅞



No. 530. Open

York Standard Fire and Burglar Resisting Safes and Chests are equipped with our Underwriters' Approved Relocking Device. York Products bear the appropriate S.M.N.A. labels.

BANKERS ELECTRIC PROTECTIVE ASSOCIATION

Electric Protection Systems for Banks

60 State Street, BOSTON, MASS.

Systems Installed and Maintained Through A.D.T. Offices in All Principal Cities (See File Index)

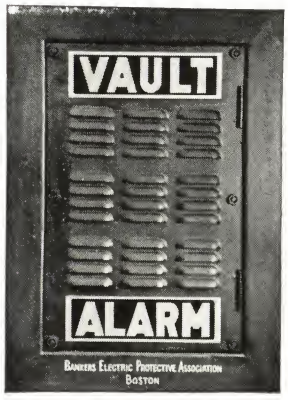
Products

ALARM SYSTEMS for banks, designed to ring a loud-sounding alarm on exterior of building if vault is tampered with or an attempt made to hold up the bank. The system is rated Grade A by the Underwriters' Laboratories, Inc.

VENTILATORS for supplying fresh air to persons inside bank vaults.

Organization and Service

Founded over 25 years ago, this organization's protection systems are used by thousands of banks throughout the country including the U. S. Treasury and many Federal Reserve Bank Buildings. It is now affiliated with the American District Telegraph Co., through whose offices its products are installed and serviced. *Layouts and sketches gladly furnished.*



Flush Type Vault Alarm Housing

VAULT BURGLAR ALARM SYSTEM

Either through pickproof cables embedded in the vault itself, or through sound detectors placed within the vault, any attempt to gain entrance to the vault outside of banking hours immediately initiates a loud alarm on the exterior of the building.

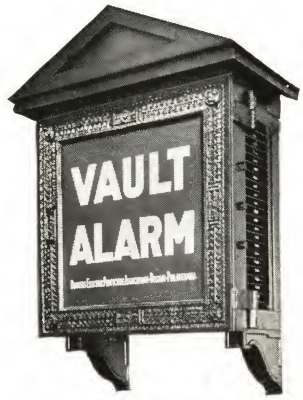
The "Bankers" Alarm is exclusive in many ways. The two-gong alarm feature and the 800-lb. steel cabinet are factors of safety which go far beyond the requirements of the Underwriters' Laboratories for Grade A approval. The alarm apparatus is protected from every possible form of tampering.

In new banks either or both systems can be installed. In old banks only the sound detection system can be installed.

With both systems special electrical lining thoroughly protects the vault door against attack by the oxy-acetylene torch.

Holdup alarm devices can be connected to the system so that, in the event of an attempted holdup, operating one of the devices sets the alarm system in operation.

It is worthy of note that in over 25 years' experience with these systems not one instance of their failure in an emergency has ever been recorded.



Surface Type Vault Alarm Housing

Details of Operating Equipment

The vault protection equipment includes a control cabinet located in the vault itself.

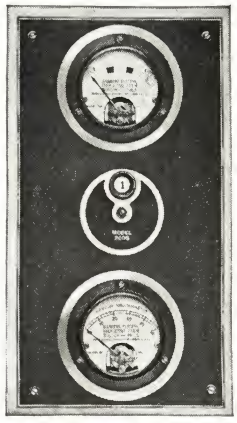
This has a time clock which is wound each night and set for the number of hours the vault is to remain closed.

An indicator panel on the outside of the vault carries two meters and push button switches for applying the protection to the system.

In the sound detection system means are provided for testing the sound detectors after the vault is closed.

Special pickproof cable used in the embedded cable system is a unique feature.

Use of this cable makes it impossible to pick out or isolate any single conductor for the purpose of defeating the system electrically, without causing an alarm.



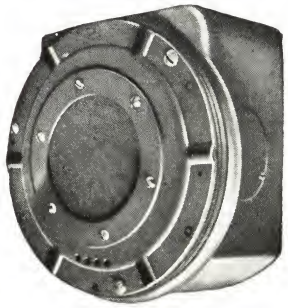
Indicator Panel

Mounted on outside of vault. Includes push button for applying protection at night

Sound detectors operating on the principle of microphones are designed to cause an alarm upon receipt of sound waves caused by a series of impulses or a single heavy impulse due to an attack on the vault.

They are designed to prevent unnecessary or false alarms, but are capable of initiating an alarm upon any disturbance sufficient to cause entrance to the vault.

Vault alarm housings for the exterior of the bank are supplied in either surface type (projecting from the wall), or flush type (embedded in the wall). Both are ruggedly constructed to resist tampering.



Sound Detector

Standard finishes: French gray and telephone black. Other finishes special

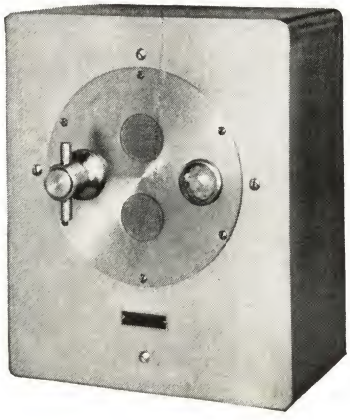
Holdup Alarm Protection

This organization supplies a varied line of daylight holdup alarm devices, including hand switches, foot push buttons, foot rails and semi-automatic devices which make it possible to give the alarm by simply obeying the commands of the bandits. These may be operated to sound alarms in nearby stores and the nearest police station, or be connected to the Vault Alarm to sound an alarm bell on the outside of the bank building.

Installation of the system and its design to suit the requirements of each individual bank are undertaken by the BANKERS ELECTRIC PROTECTIVE ASSOCIATION in collaboration with the American District Telegraph Company. Their experts may be trusted to incorporate in the protective system all the devices best adapted to the particular needs of any bank.

Vault Ventilator

In case of attack by bandits who imprison employees in the vault, or in case of accidental closing of vault door on employees or customers, and to ventilate vault during business hours, this vault ventilator has proved indispensable. It provides fresh air and expels foul air at the same time. It has an effective burglar alarm hookup and a light.



The "Bankers" vault ventilator can be installed in any vault, old or new. Installation does not weaken structure. Device has full approval of insurance companies and does not prejudice existing rate. Three models available. Literature on request.

Specifications

Complete specifications for the installation of all types of BANKERS ELECTRIC PROTECTIVE ASSOCIATION alarm systems will be furnished on application to the company at 60 State Street, Boston, Mass.

ESTABLISHED 1896

F. N. McINTIRE BRASS WORKS

Manufacturers of The McIntire Foolproof Automatic-Operating Shutter and Sliding Pole for Fire Houses and Other Buildings

(Patented)

221 High Street, BOSTON, MASS.

ALL YOU DO IS SLIDE—THE SHUTTER OPENS AND CLOSES AUTOMATICALLY

In fire, police and rescue stations and dormitories, or other buildings where men are quartered above the ground floor, sliding poles afford the quickest means of getting to a lower floor for service, safety or business. The McIntire Automatic Shutter is the only instantaneous and effective closure of pole holes after using.

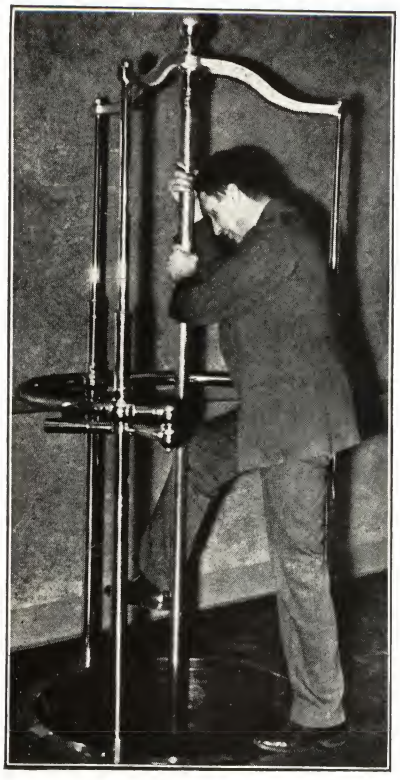
Description

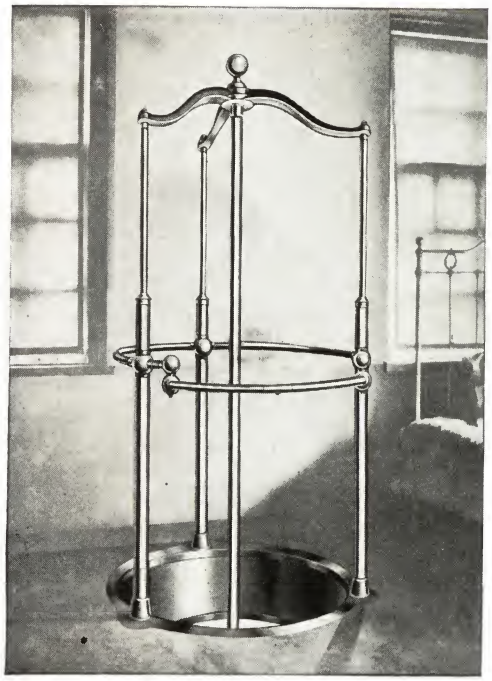
This equipment is a *complete interlinking unit consisting of cage, guard rail, quick opening gate, floor cylinder, shutters, sliding pole and landing mat.* The cage, guard rail and gate are of brass, chromium plated. The brass cylinder and aluminum shutters are satin finished. The sliding pole is of hard drawn highly polished brass with an outside diameter of 1.9 ins. with a $\frac{5}{32}$-in. wall thickness. The rubber landing mat is 2 ins. thick.

This device is designed for: Exclusion of drafts, gases and insects. Economy—elimination of heat loss. Safety—guard rail and safety gate. Speed and accessibility—no delay. Necessity—health preservation of men. Automatic closure—no care required. A decorative and useful equipment.

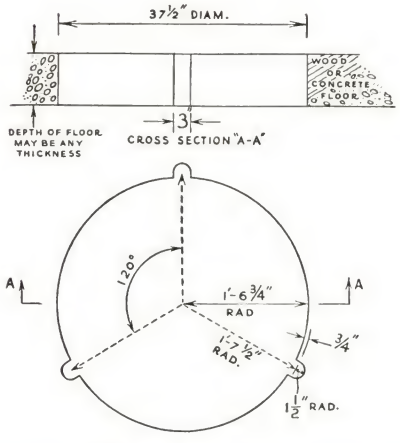
The McIntire Automatic Shutter is the only device of its kind which accomplishes these requirements without any manual operation or care on the part of the firemen or users. All you do is slide—the pole does the work.

Approved by Boston and other cities and recommended by foremost architects, fire officials, heating engineers and physicians.





Cage and Cylinder
(View from above)



Plan and Cross Section

To prepare a floor for the McIntire Automatic Shutter, cut or mold a hole in the floor 37½ in. in diameter and, at three equidistant points on a radius of 19½ in., cut or mold three more holes each 3 in. in diameter. A template will be furnished if desired.

The minimum clearance distances from the center of sliding pole to any wall or obstruction are: on the cage floor 25 in.; on the ceiling below and downward 30 in.

Specifications

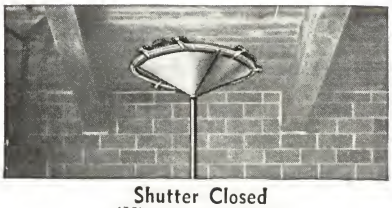
Furnish and install where shown a complete automatic-operating shutter and sliding pole constructed with hinged aluminum shutters, attached to appendages of ceiling ring of floor cylinder, said shutters opening and closing through the medium of connecting cage members which extend through the floor and form a cage with guard rail and safety gate above the floor topped by a tripod suspending the sliding pole which is free to move vertically with the cage actuating the opening and closing of the shutter by means of weight of a man sliding down the pole; as of approved type and design manufactured by the F. N. McIntire Brass Works, Boston, Mass. The hole in the floor shall be framed to suit, and otherwise the entire equipment shall be installed in strict accordance with the manufacturer's details.

Explanation

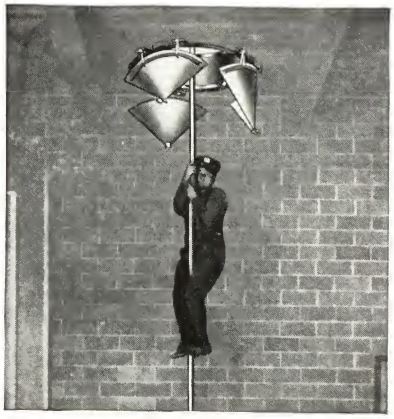
The equipment, when at rest, is held normally closed by adjustable spring tension incorporated in the guard rail stanchions. When the weight of a man contacts the pole the cage and pole descend slightly, opening the shutters downward, the weight of the man over-ruling the spring tension. When the weight is removed the pole and cage rise to normal position and the shutter closes in response to spring tension. This all happens automatically by applying or removing the sliding weight of the user. This system makes drafts and heat loss negative.

This equipment can be installed in old stations just as easily as in new buildings by simply preparing floor hole as directed below.

For dependability and economy specify the McIntire Automatic Shutter and Sliding Pole, the "fireman's friend." All you do is slide—the shutter opens and closes automatically.



Shutter Closed
(View from below)



Shutter Open
(Showing man sliding down)

DECATUR IRON & STEEL COMPANY

Manufacturers of Prison Equipment, Ornamental and Structural Steel

DECATUR, ALA.

For Ornamental Metal, see File Index

Half a Century of Experience

Behind this company is a fifty-year record of performance. During those fifty years, we have observed many changes in prison building and design—have profited much —by progress in the school of practical experience.

To architects and to the administrative officials of public building projects we offer the assurance of ultimate satisfaction in the finished project — based on our record of "Fifty Years of Knowing How!"

We invite the inquiries of anyone contemplating a modern building of detention.

Our Engineering Staff

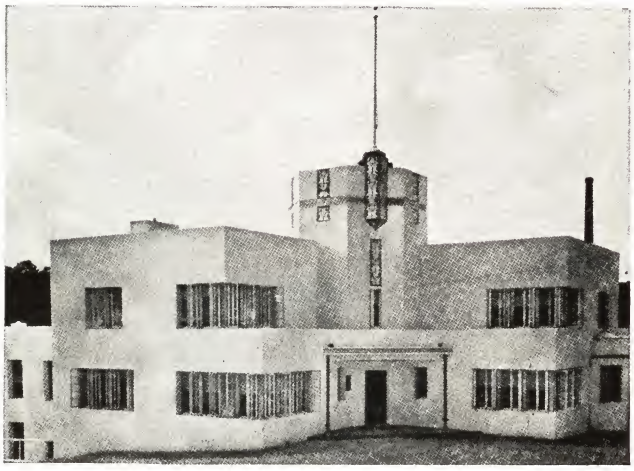
Our engineering staff is composed of men of broad experience — knowing how to take your plans, problems, and ideas, interpret them intelligently and convert them into working designs for modern jail or prison equipment. Their experience guarantees you the "last word" in suggestions and designs for the most modern construction. Likewise, the assurance of the incorporation of latest developments in your plans.

Through continuous research and development, they keep in the forefront of the prison industry.

You are invited to submit your problems to our Engineering Staff, who will gladly give you the benefit of their many years of experience — *without obligation.*

A Few Typical "Disco" Installations

Birmingham, Ala.	City Jail
Eddyville, Ky.	State Prison
Evansville, Ind.	County Jail
Fernandina, Fla.	County Jail
Ketchikan, Alaska	Federal Jail
Lagrange, Ky.	Medium Security Prison
Little Rock, Ark.	City Jail
McAlester, Okla.	State Penitentiary
Shawnee, Okla.	County Jail
Savannah, Ga.	City Jail



The Leon County Jail, Tallahassee, Florida
M. Leo Elliot, Tampa, Fla., Architect



City and County Jail, Selma, Ala.
Raymond Sizemore, Montgomery, Ala., Architect
Forcum-James Company, Memphis, Tenn., General Contractors



One of the automatically locked corridor doors and central control cabinets of the 568-cell State Penitentiary, Eddyville, Kentucky, from which the guard can operate in safety 30 cell sliding doors, without coming in physical contact with the inmates.

FRIES AND SON STEEL CONSTRUCTION AND ENGINEERING CO.

Expert Jail and Prison Builders

TELEPHONE
Hemlock 1635

Second and Madison Avenues
COVINGTON, KY.

Products

Builders of CELLS for Jails, Prisons, Police Stations and Lockups, equipped with Automatic Sliding Door and Hand Pull, and Hydraulic Locking Devices; Prison Plumbing Fixtures; Round, Hexagon, Rib and Flat Interlocking Bar Grating for window guards, corridor gratings.

Experience

FRIES AND SON STEEL CONSTRUCTION AND ENGINEERING CO., are backed by an organization made up of men whose experience ranges from twenty to fifty years, and who have built some of the largest jails and prisons in the United States.

Tool Resisting Steel

We use twelve-ply tool resisting steel for all grated work made according to standard specification, in place of regular five-ply steel referred to in specification as tool resisting, consisting of alternate layers of low carbon and high carbon steel, all layers thoroughly welded and the high carbon steel layers hardened, to resist action of cutting tools.

Where absolute security is desired, we advise using our *"Fries Special"* Tool Resisting Steel for all exterior sides of cell blocks, also for the window gratings.

Cell Door Locking Device

Our manually operated fully selective, keyless locking device is used in connection with sliding doors and is designed on lines of durability and simplicity as well as neatness. The device has no springs, adjusting nuts or collars that might come loose and cause trouble. Our device permits operator to open or close each door individually, or close or open all doors *collectively*, although some doors may be in open position while others are in closed position, or open or close any combination of doors desired.

Our locking device is entirely and securely encased by steel plate rendering it *tamperproof*.

Automatic Corridor Lock

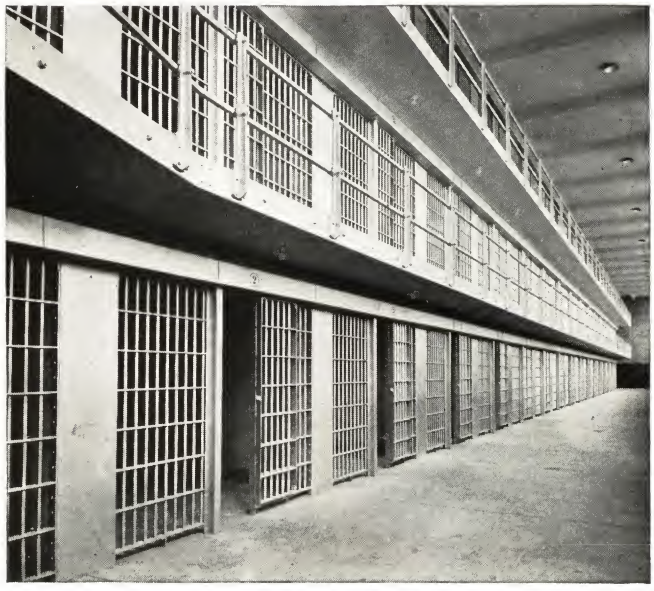
Our corridor doors are provided with a simple locking bar, operated from within the lever box. The corridor door locks automatically on lightly closing same, and is deadlocked. This lock is tamperproof.

Special Equipment

We furnish everything necessary for the completed jail or prison installation, such as, one-piece, sanitary, combination lavatory, and toilet niche seat; electric light boxes; latest improved jail plumbing fixtures; speaking panels; plate and glass partitions; steel entrance doors; bunks; padded cells; steel stairs and window guards.

Engineering Department

Our Engineering Department will gladly assist architects, engineers and officials who are contemplating any jail or prison construction. We will furnish up-to-date layouts, detail drawings, specifications and estimates for jail equipment, without charge.



Cell Fronts, Cell House No. 6, State Penitentiary, Walla Walla, Wash.



Cell Fronts and Corridor Grating, Cell House No. 6, State Penitentiary, Walla Walla, Wash.

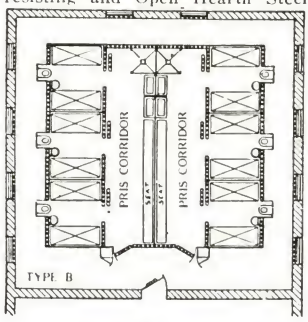
ESTABLISHED 1890

MANLY JAIL WORKS

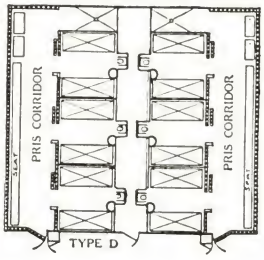
DALTON, GA.

Products and Service

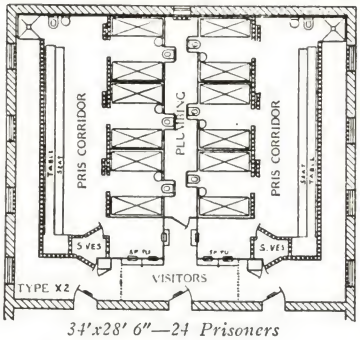
Complete Modern Cell Equipment for City and County Jails in Tool-resisting and Open Hearth Steel. Selected typical cell layouts shown below for preliminary information only. Solid lines plate work, dotted lines grating. Architect's inquiries appreciated.



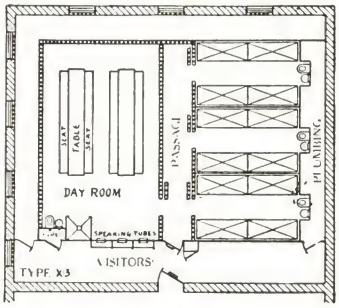
26′x24′—24 Prisoners



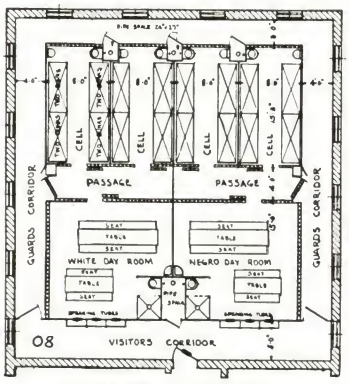
30′x27′—24 Prisoners



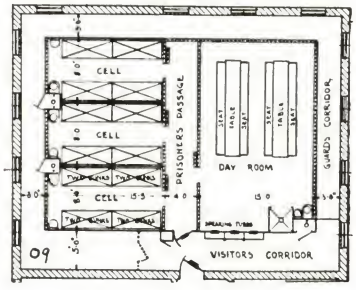
34′x28′ 6″—24 Prisoners



35′x24′—24 Prisoners



32′x34′ 6″—32 Prisoners



34′ 6″x24′—24 Prisoners

Condensed Specifications

Dimensions, etc.—2-prisoner cells, 5′ or 6′ wide, 7′ deep; 4-prisoner 8′ wide, 7′ deep; 8-prisoner 8′ wide, 13′ deep, all 8′ high. Prisoners' corridors wide as possible, 5′ minimum. Safety vestibules 2′x4′. Pipe space "O" type cells 27″x24″. Prisoners' passage 3′ 6″.

Materials—For felony cells all exterior plates and gratings tool-resisting steel, plate work ¼″, gratings not lighter than 17 lbs. to sq. ft. Inside plate partitions $\frac{3}{16}$″ open hearth steel, inside gratings and doors open hearth steel, 10 lbs. to sq. ft.

Tool Resisting Steel—Bars and plates laminated 5-ply manganese chrome steel, highly tempered to resist saws, files, and drills, and roll straightened after tempering.

Cell Door Locking Device—Cell doors 2′x6′, on ball bearing rollers, operated from control cabinet with fully selective locking device. Main cage door hinged and locked with automatic center jump lock and two heavy slide bars, operated and locked inside control cabinet. Doors to safety vestibule hinged type, locked from control cabinet.

Speaking Tubes—Bulletproof glass panel 4″x9″, framed in plate wall 4′ 6″ above floor. Speaking tubes below panels for conversation with prisoners.

Seats and Tables—10-gauge steel. Seats 14″ wide, tables 14″ wide against wall as in "B", "D"—22″ wide as in "X-3".

Bunks—2′ 6″x6′ 6″. Indestructible type, 2″ angle frame, bottom 16-gauge perforated plate, riveted to cell wall. Standard folding type, slatted bottoms, hinged and supported by galvanized chains.

Toilet Niche—22″x16″x6′ as in "X-2" or 34″x16″x6′ as in "X-3", One-piece, rounded corners, $\frac{3}{16}$″ open hearth plate. Wall or floor outlets.

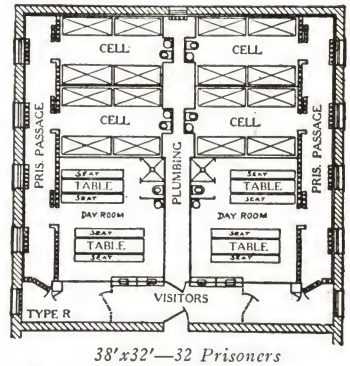
Utility Corridor—4′ wide as in "D", "X-2"; 3′ wide if niches one side only as "X-3."

Floors—Concrete. Plate work resting on 2″ cement curbs, grating supported 2″ above floor on rustproof thimbles 30″ apart.

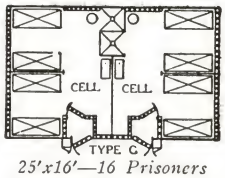
Window Guards—Tool-resisting steel ⅞″ or 1″ round verticals 3¾″ on center, ends shouldered and electrically welded. Horizontals 2¼″x⅜″—12″ apart, ends projecting 8″ into wall and bent back for building in.

Doors for Masonry Walls—$\frac{3}{16}$″ Open Hearth Plate stiffened with 2″ angles, Grated doors, ⅞″ verticals 4″ on center, horizontals 2¼″x⅜″—12″ apart, mortised and welded to frame. Heavy forged hinges, 5-tumbler flat jail deadlock, corrugated key. Channel jambs or 2½″ angle frames, connected with 11-gauge steel plate, ¼″ diamond threshold plates.

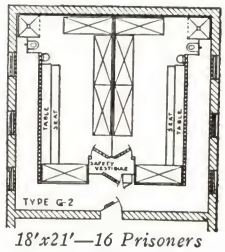
City Police Station Cells—Shown below "C-1" to "C-6" have hinged doors 2′x6′, grating 10 lbs. to sq. ft. $\frac{3}{16}$″ plate work on 2″ cement curbs, grating 2″ above floor. Built in both tool-resisting and open hearth steel.



38′x32′—32 Prisoners



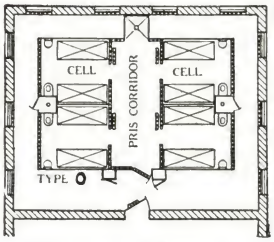
25′x16′—16 Prisoners



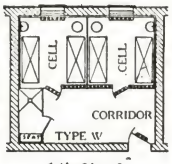
18′x21′—16 Prisoners



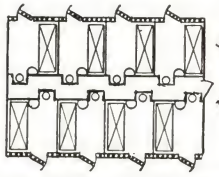
C4—24′x7′—12 Prisoners



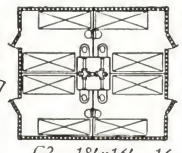
24′x16′—16 Prisoners



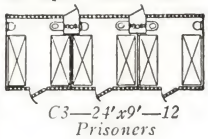
16′x9′—8 Prisoners



C-1—24′x17′—16 Prisoners

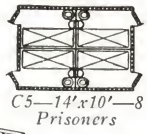


C2—18′x16′—16 Prisoners



C3—24′x9′—12 Prisoners

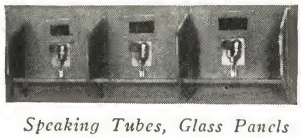
Below—Perspective Cage "D," Prison Corridors. Control Cabinets, Cell Fronts, Toilet Niches, Utility Corridor



C5—14′x10′—8 Prisoners



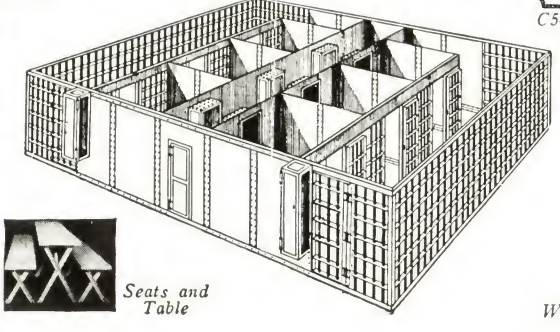
C6—17′x9′—8 Prisoners



Speaking Tubes, Glass Panels

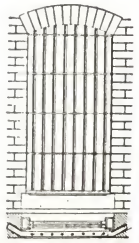


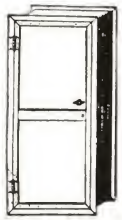
Toilet Niche 34″x16″ Push Button Flush



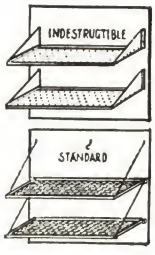


Seats and Table









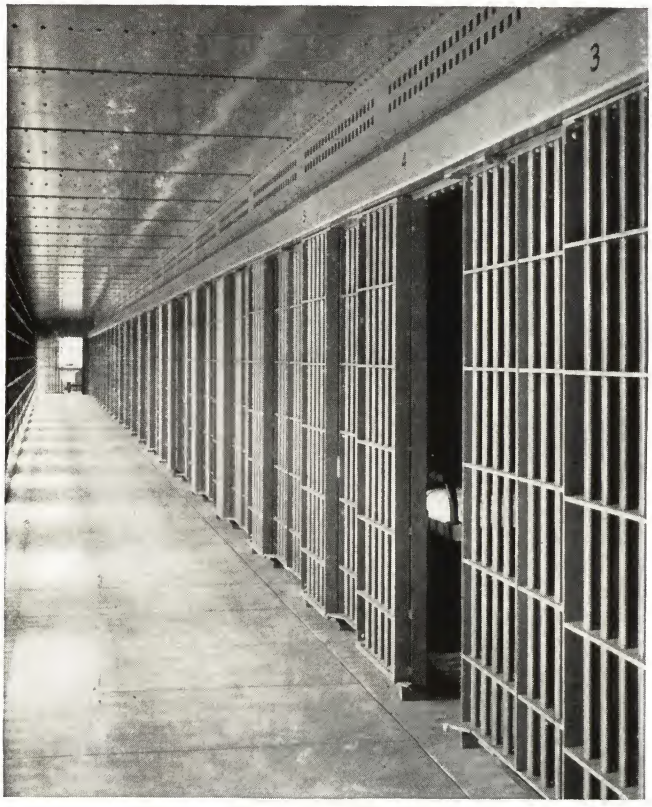
Window Guards, Plate and Grated Doors, Bunks

PAULY JAIL BUILDING COMPANY

2215 De Kalb Street
ST. LOUIS, MISSOURI

1856—Pioneers of the Industry—1939

Engineering Service—*Sketches, Details, Specifications and Data on modern arrangements of Prison Equipment based on Security—Safety—Sanitation, available to Architects and Engineers*



Prisoners Passage and Safety Corridor



Prison Cafeteria
Tables and Seats of Stainless Steel



Consultation Compartments in Visitors Corridor

List of Our Representatives

Mr. R. R. Lippincott, 167 South Burnett St., East Orange, New Jersey

Mr. J. H. Leversedge, P. O. Box 1192, or 19 West Prentiss Ave., Greenville, S. C.

Mr. S. R. Cloud, 517 North Texas Bldg., Dallas, Texas

Mr. W. R. Fox, 557 Market Street, San Francisco, Calif.

Colorado Builders Supply Co., 1534 Blake Street, Denver, Colorado

Mr. Allan C. Peel, Special Representative, North Pacific Coast

DESIGNERS—Modern Equipment by Pauly—CRAFTSMEN

ROANOKE IRON & BRIDGE WORKS, INC.

Experienced Prison and Jail Builders

ROANOKE, VA.

Roanoke Products

Fabricated Tol-Resisting and Open Hearth Steel Equipment for Federal, State, Municipal and County Jails, Prisons, Prison Camps and Police Stations;

Including Cells, Keyless Sliding Door Selective Locking Devices, Entrance Doors, Plate and Grating Partitions, Movable and Stationary Bunks, Window and Skylight Guards, Sanitary Plumbing.

Experience

For more than thirty years we have specialized in the design and construction of prison work, and a plant, modernly equipped, supervised by specially trained Engineers, Mechanics, and Erectors, insures prompt and accurate execution of contracts.

Service

Backed by a wide and successful experience in making layouts and designs in this special class of work, we are prepared to give overnight consulting service and furnish prompt estimates. Owners, Architects and Engineers are requested to make use of our service for preliminary designs and estimates.

Representative Installations

Mecklenburg County Jail, Charlotte, N. C.
Vero City Jail, Vero City, Fla.
City of Petersburg Jail, Petersburg, Va.
City Police Department Building, Baltimore, Md.
District of Columbia Reformatory, Lorton, Va.
Wythe County Jail, Wytheville, Va.
McDowell County Jail, Welch, W. Va.
Floyd County Jail, Prestonburg, Ky.
Twenty-one Prison Camps, State of North Carolina.
Iredell County Jail, Statesville, N. C.
Knox County Jail, Knoxville, Tenn.
Florence County Jail, Florence, S. C.
Greene County Jail, Greeneville, Tenn.
Rockingham County Jail, Harrisonburg, Va.
State Penitentiary, Women's Building, Nashville, Tenn.
Jefferson County Jail, Charleston, W. Va.
Tulsa City Jail, Tulsa, Okla.
State Penitentiary, Shop Building, Richmond, Va.
Knoxville City Jail, Knoxville, Tenn.
Cleveland County Jail, Shelby, N. C.
Knox County Jail and Criminal Court Building, Knoxville, Tenn.
City Jail, Lynchburg, Va.
Hamblen County Jail, Morristown, Tenn.
Wise County Jail, Wise, Va.

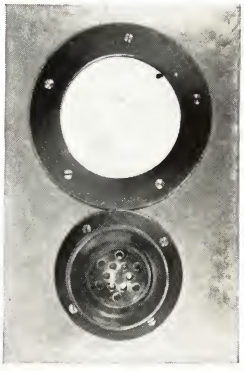


Cell Fronts and Guards Corridor

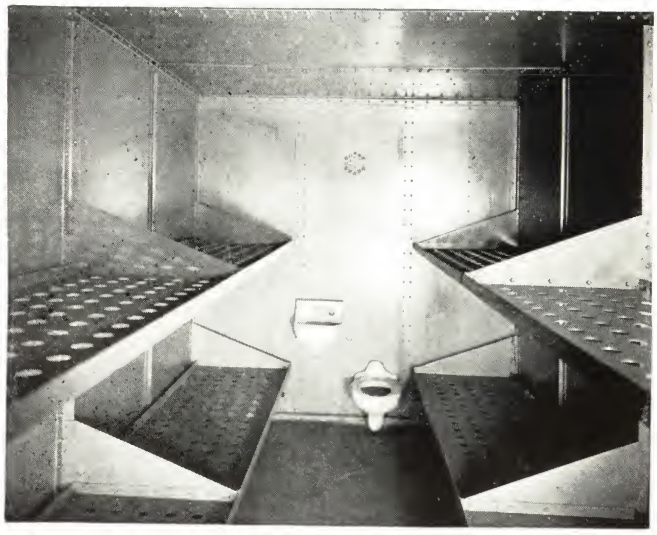




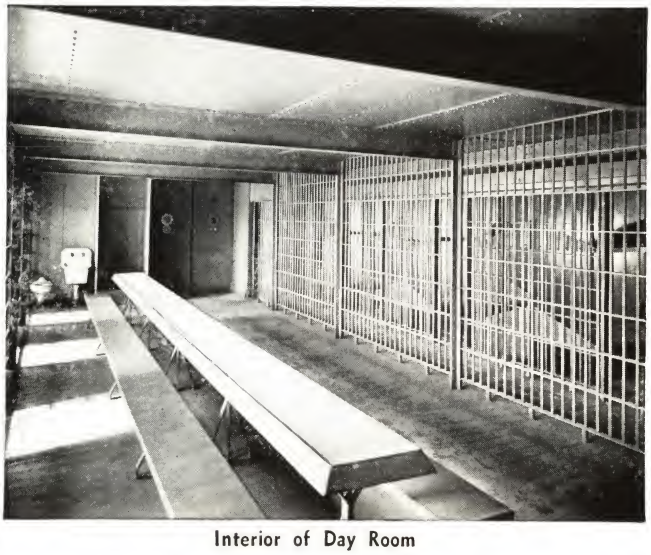
Entrance Doors



Speaking and Observation Panel



Interior of Cell



Interior of Day Room

SOUTHERN PRISON COMPANY

MAIN OFFICE AND WORKS
SAN ANTONIO, TEXAS
P. O. Drawer 2021

TELEPHONE
Kenwood 1231

Products

PRISON EQUIPMENT comprising such parts as Cells, Locking and Operating Devices for cell doors, Locks, Windows, Window Guards, Cell Furnishings, and related specialties and parts for jails, prisons, police stations, lockups and holdovers.

Also Miscellaneous Equipment, Steel Grating, Cell Room Lining, Doors, Bunks, Hammocks, etc.

Experience

For over forty years the management of this company has been actively engaged in preparing layouts, designing and equipping jails and prisons, giving special attention to the proper classification of prisoners, perfection of tool resisting steel cells; fully selective type sliding door locking and operating devices—the most vital features in jail and prison construction.



Maricopa County Courthouse and Phoenix City Hall, Phoenix, Ariz.
EDWARD F. NEILD, LESCHER and MAHONEY, Architects

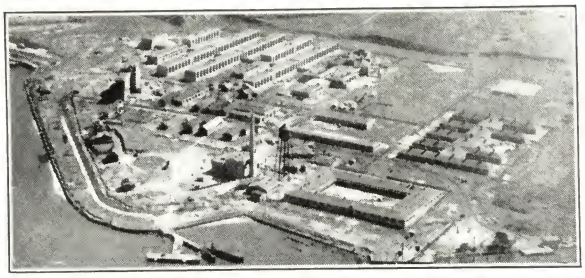
Service

Representatives in various parts of the country experienced in this special line will call in person on architects, engineers and interested officials and submit free of charge and without obligation, designs, layouts and estimates with samples and models complete, when desired.

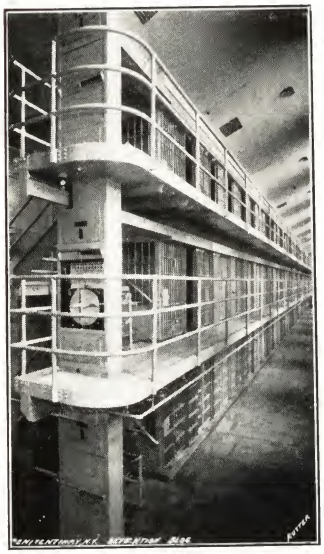
Communicate with us.



Jefferson County Courthouse and Jail, Birmingham, Ala.
HOLABIRD & ROOT and HARRY B. WHEELOCK, Architects



Rikers Island Penitentiary, New York, N. Y.
SLOAN & ROBERTSON, Architects

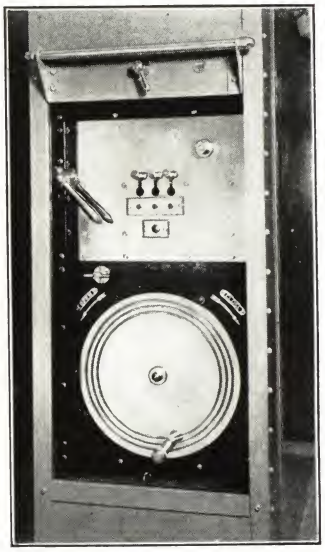


View of Three-Tier Cell Block for Penitentiary

Long lines of cell doors locked and operated from single control cabinet as illustrated



Interior View of Receiving Building, Massachusetts State Prison Colony, Norfolk, Mass.
MCLAUGHLIN & BURR, Architects



Control Cabinet with Bi-parting Doors

Simple, secure and efficient operation and locking of cell doors is accomplished by single movement of the wheel by means of our patented intermittent gear unit

SOME REPRESENTATIVE INSTALLATIONS

Illustrations show a few of our recent representative installations. Other installations include, among many:

Anamosa, Iowa
Woodstock, Va.
Santa Barbara, Calif.
Rawlins, Wyo.
Lakeport, Calif.
Morrillton, Ark.
Lexington, Neb.
Texarkana, Ark.
Flint, Mich.
McAlester, Okla.
Raiford, Fla.
Tucson, Ariz.
Kankakee, Ill.
Houma, La.
Amite, La.
Laredo, Tex.
Boise, Ida.
Wharton, Tex.
Jefferson City, Mo.
Greenwood, Miss.
Fordson, Mich.
Roseburg, Ore.
Fort Worth, Tex.
Austin, Tex.
Lowville, N. Y.
Silver City, N. M.
Provo, Utah
Ventura, Calif.
Oklahoma City, Okla.
Quincy, Fla.
Racine, Wis.
Wichita, Kan,
Kalamazoo, Mich.
Brandon, Miss.
Detroit, Mich.
Jackson, Tenn.
Lovington, N. M.
Fort Smith, Ark.
Cortez, Colo.

THE STEWART IRON WORKS COMPANY, INCORPORATED

Jail and Prison Builders to America Since 1886

CINCINNATI, OHIO

Products

STEEL CELLS for penitentiaries, county and city jails. Hinge and Sliding Type Doors; Locking Devices; Gratings in tool-resisting and Bessemer steels; Bunks, Window Guards, Iron Stairways and all modern jail equipment.

For our pages on Fencing, see File Index.

Stewart

Service

When requested to do so, we extend to architects the entire facilities and experience of our engineering, designing and drafting departments. Designs, estimates, specifications and layouts gladly furnished.



MISSOURI STATE PENITENTIARY, JEFFERSON CITY, MO.

Above view of Missouri State Penitentiary shows Cell House Number 3, one of the two cell houses containing 774 cells recently fabricated and installed by Stewart



AIRPLANE VIEW OF UNITED STATES PENITENTIARY, ALCATRAZ ISLAND, CALIFORNIA

174J

SOME PRINCIPAL INSTALLATIONS

State and Federal

New York State Penitentiary, Attica, N. Y.
Onondaga Penitentiary, Syracuse, N. Y.
United States Penitentiary, Alcatraz Island, Calif.
United States Penitentiary, Atlanta, Ga.
Georgia State Penitentiary, Reidsville, Ga.
Nebraska State Penitentiary, Lincoln, Neb.
Kentucky State Penitentiary, Eddyville, Ky.
South Carolina State Penitentiary, Columbia, S. C.
North Carolina State Penitentiary, Raleigh, N. C.
Colorado State Penitentiary, Canon City, Colo.
Virginia State Penitentiary, Richmond, Va.

County

Sheboygan County, Sheboygan, Wis.
Claiborn County, Tazewell, Tenn.
Coffey County, Burlington, Kan.
Morrison County, Little Falls, Minn.
Allen County, Fort Wayne, Ind.
Swain County, Bryson City, N. C.
Wicomico County, Salisbury, Md.
Kent County, Dover, Del.
Fulton County, Atlanta, Ga.
Jefferson County, Louisville, Ky.
Union County, Elizabeth, N. J.
Hamilton County, Cincinnati, Ohio.
Shelby County, Memphis, Tenn.
Dade County, Miami, Fla.
Multnomah County, Portland, Ore.
O'Brien County, Pringhar, Iowa.
Davidson County, Nashville, Tenn.
Oklahoma County, Oklahoma City, Okla.
Winnebago County, Oshkosh, Wis.

Alcatraz

All cell and prison equipment in Uncle Sam's government penitentiary, Alcatraz, located on Alcatraz Island, California, was manufactured and installed by Stewart. It is recognized as being the world's most secure prison. The island covers an area of 12 acres.

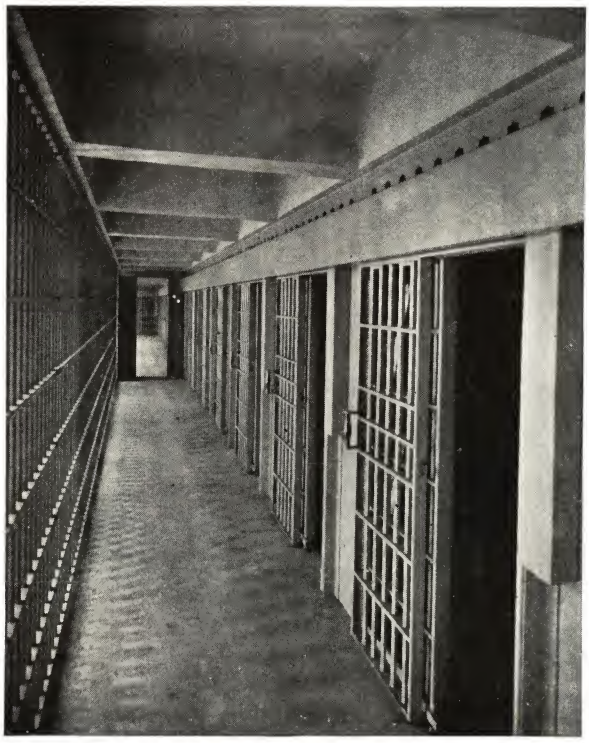
THE VAN DORN IRON WORKS COMPANY

ESTABLISHED 1878

Manufacturers of Prison Equipment

CLEVELAND, OHIO

For over 60 years, THE VAN DORN IRON WORKS CO. have been originators, designers and manufacturers of universally recognized prison and jail equipment and accessories.



Los Angeles Hall of Justice
Corridor view of cell installation occupying the five top stories

Starting in 1878 with a small shop employing a dozen or so individuals, we have progressed uninterruptedly through the intervening period in a constant attempt to improve our products and services. The success of our enterprise is clearly indicated in the fact that our 60th anniversary finds us the largest manufacturer in the field, carrying on in a modern plant with a floor area of over 400,000 square feet.

Products

Steel Cells for penitentiaries, county jails, and police stations.

Fully selective Keyless Locking Devices for the operation and control of sliding cell doors either singly or collectively.

Plate and Grating Doors (sliding and hinged), Door Locks, Window Guards, Gratings, Stairways; and all Cell Accessories such as bunks, plumbing fixtures, speaking and observation panels, partitions, tables, chairs, padded cells, and Bulletproof Glass and Steel Partitions, Visitors' Booths and Shower Stalls.

Services

Through our long experience and large staff of expert engineers and field representatives, we are in a position to render every necessary service from the inception to the completion of any project in connection with prison equipment. Our facilities are at the service of the Architect to co-operate in the development of plans for alterations to present structures, giving special attention to modern approved ideas of arrangement and segregation with facilities for classified accommodation of prisoners, as well as new building construction.

Upon request, we will gladly furnish without obligation, designs, estimates and working models for demonstration purposes.

The Van Dorn Iron Works Company service also includes the writing of complete cell work specifications.



The Largest Prison Equipment Contract Ever Awarded in America—Cook County Court and Jail Buildings, Chicago, Ill.

Features of Van Dorn Construction

Accepted as Standard

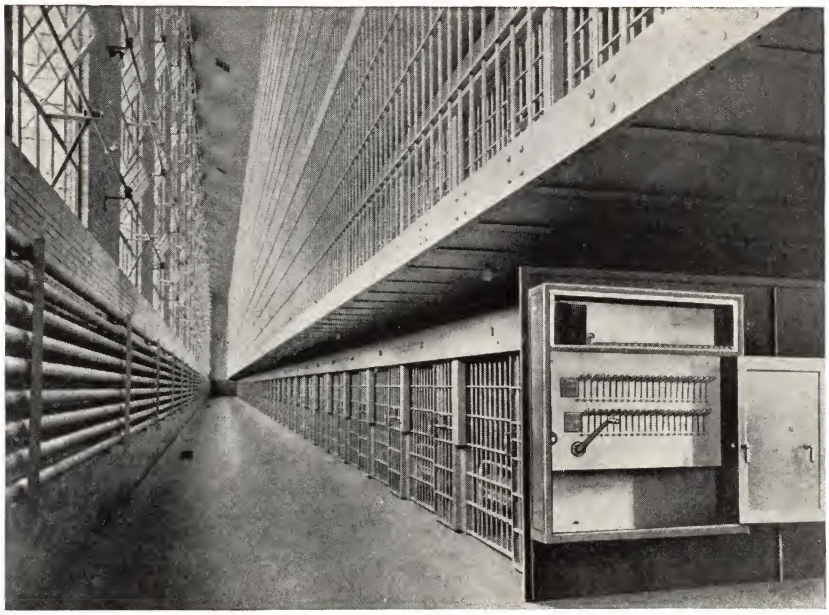
Van Dorn Standard Cell Construction is a combination of hexagonal vertical bars with round edge channel horizontal bars. The vertical bars are inserted in the channel and locked by a one-sixth turn; a flat bar provided with corresponding hexagonal holes is inserted in the channel and *prohibits turning of the vertical rods.*

This construction is recognized as providing the maximum of strength, rigidity and good appearance.

Van Dorn Selective Keyless Locking Devices

We are the originators of the Fully Selective Keyless Locking Devices for the operation and control of all sliding type cell doors which bear our name. (Illustration at right.) This device permits the operator to open or close, lock open or lock closed any one door or series of doors collectively from lock box position *which is outside the prisoner's corridor.*

Leading architects have accepted this item as the standard for locking systems.



Auburn State Prison, Auburn, N. Y.
Showing 43 cells in a line operated and controlled by Van Dorn Fully Selective Keyless Locking Device

Van Dorn Tool-Resisting Steel

The design and manufacture of tool-resisting steel for prison use was pioneered by THE VAN DORN IRON WORKS COMPANY, and, as a result, there has been produced a non-annealable, toolproof steel, which, although difficult to fabricate, is a markedly superior product.

In the Van Dorn System, the barred gratings which separate the prisoner's corridor from the guards' corridor is of this special toolproof steel, as are the interlocking window guards. Individual cell fronts are of barred construction with doors of the sliding type and need not be tool-resisting.

For name of our nearest representative, wire us collect at Cleveland.



Rhode Island County Jail, Howard, R. I.
Showing a typical Tier and Balcony arrangement



Bronx County Jail, New York City

Typical Installations

Installed	Location	Number of Cells
1923	Los Angeles County Jail, Los Angeles, Calif.	721
1909	San Quentin State Prison, San Quentin, Calif.	800
1894	State Prison, Wethersfield, Conn.	276
1925	Bibb County Jail, Macon, Ga.	131
1926	Cook County Jail, Chicago, Ill.	1400
1923	State Reformatory, Pendleton, Ind.	648
1911	Iowa State Prison, Fort Madison, Iowa	400
1935	Maine State Prison, Thomaston, Me.	280
1897	Maryland Penitentiary, Baltimore, Md.	820
1901	Deer Island Reformatory, Boston, Mass.	360
1902	Workhouse, St. Paul, Minn.	100
1924	Nebraska State Prison, Lincoln, Neb.	301
1928	Erie County Penitentiary, Wende, N. Y.	1170
1936	Bronx County Jail, New York, N. Y.	245
1922	State Penitentiary, Rockview, Pa.	500
1931	State Reformatory for Men, Howard, R. I.	214
1927	Penitentiary, Windsor, Vt.	144
1931	D. C. Reformatory, Lorton, Va.	100
1929	King County Jail, Seattle, Wash.	100
1907	West Virginia Penitentiary, Moundsville, W. Va.	608
1915	Jail, Honolulu, Hawaii	64
1907	State Prison, Chihuahua, Mexico	152
1906	Northumberland and Durham County Jail, Cobourg, Ontario, Canada	24
1929	Jail, Cristobal, Panama Canal	20

E. H. SHELDON & COMPANY

Laboratory and Vocational Furniture in Metal and/or Wood

MUSKEGON, MICHIGAN

Sheldon Service

Sheldon's 250-page complete laboratory furniture catalog and engineering hand book available free on request.

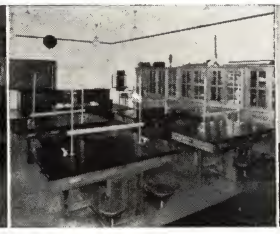
Includes all technical data on mechanical services, laboratory ventilation and over 1,000 designs of equipment.



U. S. Government Laboratory



College Chemistry Laboratory



High School Physics Laboratory



Foods Laboratory



Industrial Laboratory

Data on Secondary School Equipment

"Recommended minimum" sizes of various special rooms, including usual mechanical services required. Room sizes listed are for actual class workrooms, exclusively, and are intended to provide for the established recommended accommodations for 32 students. Auxiliary rooms for each of these departments vary with size of school and curriculum. Auxiliary rooms are indicated under each heading and can be elaborated on considerably. While 22 ft. is the accepted width of a schoolroom, if possible, laboratories should be contained in special wings of the building to give a minimum width of 24 ft. to the rooms. Room sizes given below are based where necessary on this premise. Certain of the special rooms listed can logically be accommodated in the standard 22-ft. width room and are so indicated.

Chemistry—Where special lecture room adjoins: 24 x 38 ft.
Including lecture space within the laboratory: 24 x 49 ft. Chemistry laboratories should essentially be on top floor of the building. *Services:* Water, gas, electric A.C. and D.C. Drain lines installed in inaccessible places should be especially resistant to chemicals. Vent outlet for fume hoods and electrical connections for fan.

Physics—Where special lecture room adjoins: 24 x 36 ft.
Including lecture space within the laboratory: 24 x 47 ft. *Services:* Gas and electric A.C. and D.C. for student tables. Gas, electric, and water at instructor's table, and water at one other location in room.

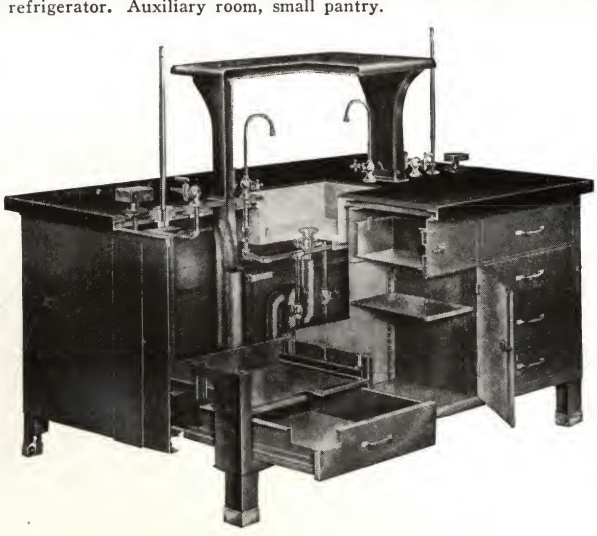
Biology—Special lecture room not considered necessary. Room should essentially be on ground floor where a growing room can be provided. 24 x 38 ft. *Services:* Water, gas and electric A.C. and D.C. at instructor's table and one other location in room.

General Science—Separate lecture room not considered necessary. 24 x 35 ft. *Services:* Water, gas and electric A.C. and D.C. at instructor's table and one other location in laboratory.

Note: Lecture room can be located between any two laboratories and should be large enough to take two sections of classes at one time or, 64-seat capacity—24 x 28 ft. Each laboratory should have a storeroom minimum of 200 sq. ft. that can be locked off from the laboratory. A Chemistry storeroom should be segragated from the rest but storerooms for other Sciences may be combined if necessary, providing they are adjacent to the respective laboratories and where size is correspondingly increased to provide 200 sq. ft. per department. Physics should have a dark room which may be used in conjunction with Biology if adjacent.

Homemaking group may be extended to include in addition to the Foods Laboratory and Clothing Laboratory a complete apartment unit, i.e., a living room, dining room, model kitchen, bedroom and bath.

Foods Laboratory—Group plan, 22 x 40 ft.
Unit plan, 26 x 40 or 24 x 44 ft. *Services:* water, conveniently located to all groups or units. Gas or electric outlets for stoves, electric outlet for refrigerator. Auxiliary room, small pantry.



Clothing Laboratory—24 x 39 ft. *Services:* Electrical outlets along window walls for sewing machines. Electric outlets on end or side walls for flat irons. Water for lavatory. Auxiliary rooms: fitting room, 8 x 10 ft. and storeroom 8 x 11 ft.

Wood Shops—22 x 54 ft. This provides space for minimum amount of machinery, also finishing space but no lumber storage. When space permits, a room 28 ft. or wider is desirable. *Services:* Water for wall sink, electric outlets for glue pots, power outlets for machines. Machine Shops, Sheet Metal, Home Mechanics, Forge, Pattern Making, Auto Mechanics and other technical shops can be as extensive as circumstances permit. No formula for floor space can be offered without definite information as to requirements.

Art—22 x 38 ft. Auxiliary room—small stockroom, corridor adjoining generally arranged for exhibit space. Provide water for wall sink.

Mechanical Drawing—22 x 43 ft. Auxiliary rooms—storeroom and blue print room. Water for wall sink in main room. Water and electric in blue print room.

Commercial and/or Typewriting Rooms—Combined or individual 22 x 42 ft.

Suggested Specification Form for Laboratory and/or Vocational Furniture

Sections listed that are not applicable to job at hand may be dropped.

(1) General Conditions.

(2) Instructions for Proposal.

(3) Special Note—*When using catalogue number*—"Use of catalog numbers herein shall serve as a guide and every item specified by a number shall be governed by features of the general specifications. It shall be understood that all features and accessory items shown in the catalog referred to shall be incorporated in the item whether specifically mentioned in an itemized listing or covered in the general specification, or not."

(4) Materials—(a) Exterior cabinets; (b) Interiors; (c) Panels; (d) Tops; (e) Special materials; (f) Fume hoods.

(5) Cabinet Construction—(a) Thickness of stiles, rails; (b) Method of joining; (c) Base and crown mouldings; (d) Leg construction for open frames; (e) Attached seats or chairs; (f) Doors—hinged and sliding; (g) Drawers.

(6) Table Tops—(a) Laboratory—composition, wood or stone. (b) Foods Laboratory tops, composition, stainless metal or wood; (c) Drawing, Art, Sewing, Commercial table tops (generally wood); (d) Shop Bench tops (wood).

(7) Shop Bench Construction—(Separate construction specification because generally of heavier materials than other types of furniture.)

(8) Hardware—Locks, hinges, pulls, leg shoes, door latches, special hardware, sliding sash for fume hoods, balance support rods, adjusting devices, etc.

(9) Plumbing—(a) Water cocks, gas, air, vacuum, steam, distilled water, hydrogen sulphide, shut-off valves for supply line; (b) piping materials and sizes (exposed and concealed), finishes, etc.; (c) traps, sink fittings and drain lines; (d) special treatment of Chemistry Department exposed pipe and fixtures; (e) sinks.

(10) Electrical Work.

(11) Finish—(a) Cabinet exterior and interior; (b) special acid-resisting finishes for Chemistry cabinets; (c) top finishes; (d) parts to be rubbed.

(12)—Miscellaneous items applicable to special requirements such as steam baths, Kjeldahl units, special locking systems, vent and exhaust fans for laboratory hoods, drying compartments, etc.

Industrial Laboratory Furniture

Furniture of either wood or metal. Steel furniture for chemical laboratories should be a special copper-bearing lead-coated steel in the various gauges required, with all sheared edges recoated with lead.

Proper co-ordination of all mechanical services required demands highly specialized information to properly prepare complete and thorough specifications and details.

Fume removal is one of the major problems of any industrial research or control laboratory, and one to which we have devoted years of study and experiment.

Our long experience, as indicated by our record of forty years of continuous manufacture in the laboratory and vocational furniture field, exclusively, is evidence of our ability to furnish architects and engineers with the necessary technical data on laboratory layouts. Our representatives are available in all parts of the country. *Their service is without obligation. Feel free to call on us.*

AUTOMATIC DEVICES COMPANY

Manufacturers of Curtain Machines, Curtain Tracks and Motor Generators

1035 Linden Street, ALLENTOWN, PA.

EXPORT DEPARTMENT—220 W. 42nd Street, NEW YORK, N. Y., U. S. A.

DIRECT FACTORY REPRESENTATIVES

CHICAGO, ILL., N. C. Nussbaumer, 825 S. Wabash Avenue

ST. LOUIS, MO., A. M. Pollack, 1310 Midland Drive

"SILENT STEEL" CURTAIN TRACK

The theater or auditorium owes to the audience the full dramatic value of the entertainment. Except for the picture or performance, the curtain is the one object continually in sight and can contribute much to the success of the show. "Silent Steel" Curtain Tracks provide the proper operation of any size horizontal draw curtains at the most economical cost.

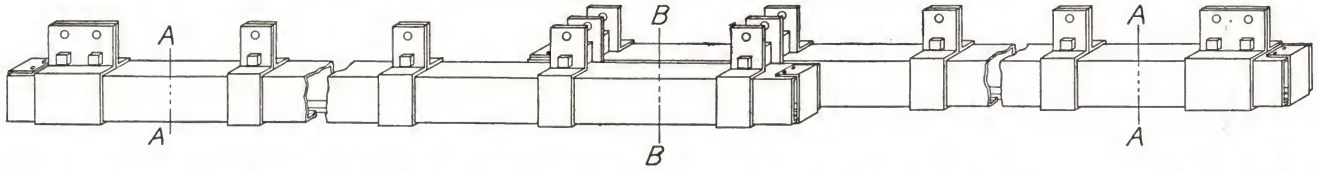
The "Silent Steel" track is formed from one piece of heavy gauge steel, fully enclosed on all four sides except for slot in bottom. Each half of track is supplied in one continuous unit without riveted or other mechanical joints.

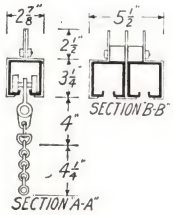
Curtain carriers are of metal body containing large ball-bearing supported shaft with special rubber composition wheel on each end. From the bottom is suspended a swivel and chain for trimming the curtain. Rubber buffers ride on operating line between each carrier. Track clamps are adjustable to any location by merely turning one nut. Pulley blocks are equipped with steel ball-bearing wheels adequately guarded. Cotton sash cord is supplied for hand operation and steel-core cable for machine operation.

Special wheels and ball-bearing construction combined with perfect alignment make operation quiet and effortless. Installation is simple and rapid.

Also obtainable in Special Model with plain bearing carriers and special accessory group.

Turnbuckles, Pipe-Batten Hangers, Wall or Ceiling Brackets Supplied as Desired





Section Dimensions

To Determine Gross Length of Track Required

As a basis, start with the clear width of opening which curtain is to uncover; i.e., distance between inside edges of curtain halves when in open position.

Add 10% for lap at center for curtain when closed.

Add 10% for extension on each end to accommodate each half of curtain when in open position.

Total addition is 30%.

Example: Open curtain is to expose 30 ft. clear width. Add total of 30% or 9 ft. for center lap and both end extensions.

Specify 39 ft. gross length, in two sections each 19 ft. 6 in.

Suggested Specifications

Curtain Tracks shall be of steel construction, fully enclosed, except for slot in bottom, and free of any riveted or other mechanical joints regardless of length, except at center lap. Each curtain carrier shall be supported on ball bearings by two special composition rubber wheels rolling on two separate parallel treads and all pulley blocks equipped with steel, ball-bearing wheels adequately guarded; all as manufactured by AUTOMATIC DEVICES COMPANY of Allentown, Pa.



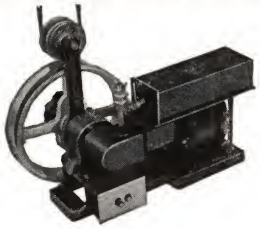
Silent Steel Track Assembly



Silent Steel Balanced Ball-Bearing Curtain Carrier

AUTOMATIC CURTAIN MACHINES

Allentown Automatic Curtain Machines have been developed over a period of 18 years. They operate smoothly and reliably in the simplest manner by finger-tip control from any points desired and at the most economical cost.



"Autodrape" Standard Model

Over-all dimensions: 19½ in. long, 10 in. wide, 15½ in. high

"Autodrape" Curtain Machines

All "Autodrape" machines are equipped with exactly the same gear reduction unit, base and automatic reversing switch mechanism, including the following features:

(1) Limit Switch Arrangement—Adjustment for "open" and "close" positions reduced to simplest form.

(2) Elevator Type Traction Drive—Maximum delivered power without slippage.

(3) Mounting—Endless cable design allows installation of machine at any position in vertical plane of track.

(4) Disconnecting Clutch—For conversion to hand operation.

(5) Automatic Overload Protective Breaker—Protects machine against excessive loads.

(6) Motor—¼ or ⅓ hp., single phase.

(7) Speed—92 or 115 ft. per minute, equivalent to curtain separation of 2¾ or 3½ ft. per second, respectively (based on 60-cycle current).

"Autodrape" Special Models—These models have features listed above and are the lowest priced fully automatic machines on the market.

Recommended for use with "Silent Steel" Tracks up to about 40 ft. gross length.

"Autodrape" Standard Models—In addition to the above features these models include idler system and finger-tip control switch attached to machine.

Recommended for use with "Silent-Steel" Curtain Tracks up to about 50 ft. gross length.

"Silver Service" Curtain Machines

The "Silver Service" Model has all the features of the "Autodrape" machines, but is equipped with ½ hp. motor and develops a speed of 155 ft. per minute, equal to curtain separation of 5¼ ft. per second. Recommended for use where length of track, weight of curtain, or speed is beyond the stated capacity of the "Autodrape" equipment.

REPRESENTATIVE INSTALLATIONS

Public Schools
New York, N. Y.
Philadelphia, Pa.
Baltimore, Md.
Cleveland, Ohio
Washington, D. C.
Newark, N. J.
Buffalo, N. Y.
Seattle, Wash.
Providence, R. I.

Theatre Circuits
Paramount-Publix
Warner Bros.
Balaban & Katz
R-K-O
Loews
Fox
Wilmer & Vincent
Comerford

Hotels
Waldorf-Astoria
Miami-Biltmore
Palmer House

Industrial Exhibits
General Motors Co.
Sears-Roebuck
Ford Motor Co.
General Electric Co.

U. S. Government
Army Posts
Naval Stations
Veterans' Hospitals
Department Bldgs., Washington, D. C.
Public Health Hospitals
Resettlement Projects

Colleges
University of Chicago
U. S. Military Academy
Swarthmore
University of Maine
University of British Columbia
New York University

Miscellaneous
Radio Stations
Municipal Auditoriums
Masonic Lodges
Y. M. C. A.
Churches
Clubs
Art Museums

For Complete Information and Samples of Track write to Automatic Devices Company, Allentown, Pa.

MEMORANDA

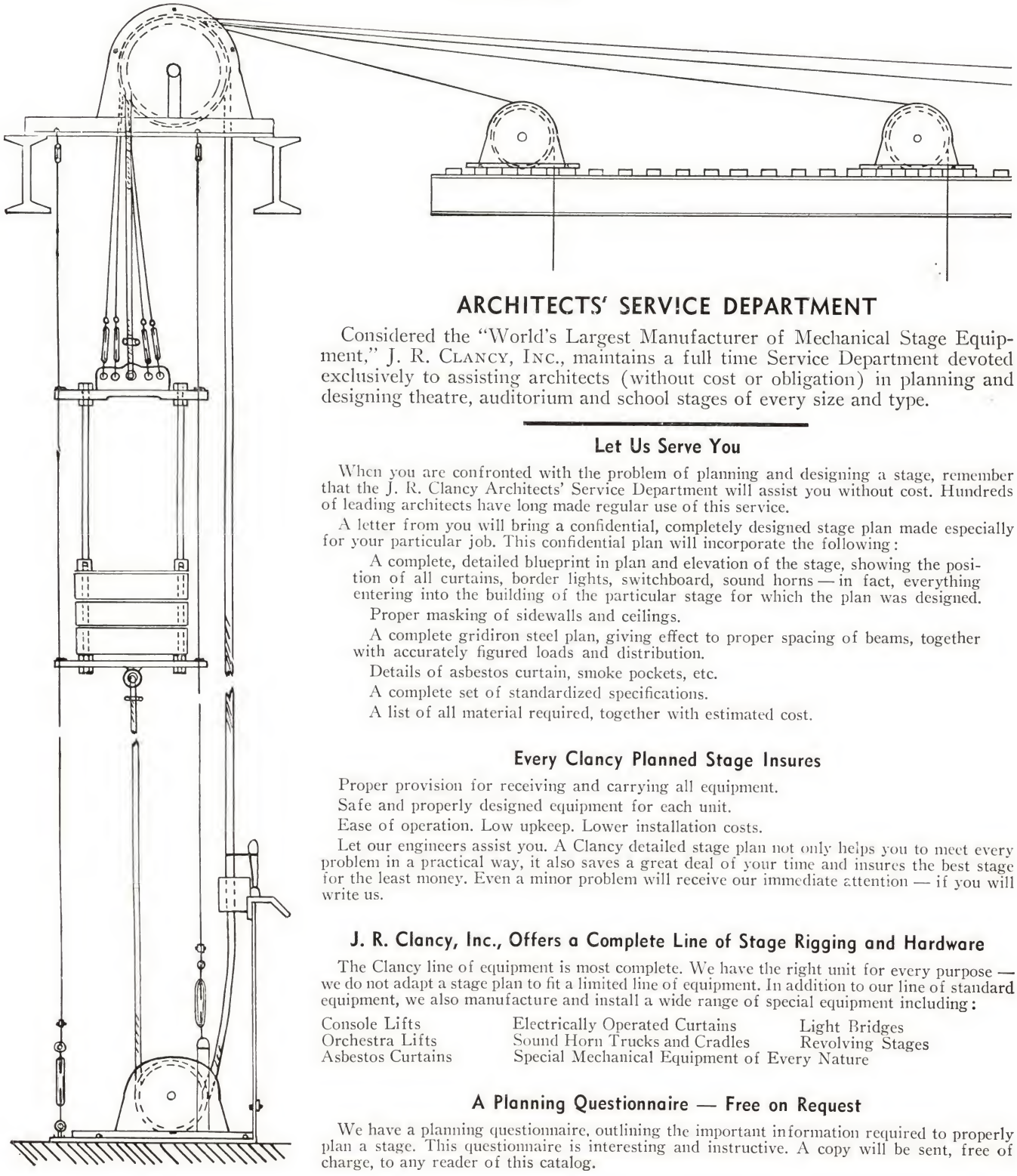
ESTABLISHED 1885

J. R. CLANCY, INC.

Manufacturers of Curtain Hoists, Stage Rigging and Hardware

1010 West Belden Avenue

SYRACUSE, N. Y.



ARCHITECTS' SERVICE DEPARTMENT

Considered the "World's Largest Manufacturer of Mechanical Stage Equipment," J. R. CLANCY, INC., maintains a full time Service Department devoted exclusively to assisting architects (without cost or obligation) in planning and designing theatre, auditorium and school stages of every size and type.

Let Us Serve You

When you are confronted with the problem of planning and designing a stage, remember that the J. R. Clancy Architects' Service Department will assist you without cost. Hundreds of leading architects have long made regular use of this service.

A letter from you will bring a confidential, completely designed stage plan made especially for your particular job. This confidential plan will incorporate the following:

A complete, detailed blueprint in plan and elevation of the stage, showing the position of all curtains, border lights, switchboard, sound horns — in fact, everything entering into the building of the particular stage for which the plan was designed.

Proper masking of sidewalls and ceilings.

A complete gridiron steel plan, giving effect to proper spacing of beams, together with accurately figured loads and distribution.

Details of asbestos curtain, smoke pockets, etc.

A complete set of standardized specifications.

A list of all material required, together with estimated cost.

Every Clancy Planned Stage Insures

Proper provision for receiving and carrying all equipment.

Safe and properly designed equipment for each unit.

Ease of operation. Low upkeep. Lower installation costs.

Let our engineers assist you. A Clancy detailed stage plan not only helps you to meet every problem in a practical way, it also saves a great deal of your time and insures the best stage for the least money. Even a minor problem will receive our immediate attention — if you will write us.

J. R. Clancy, Inc., Offers a Complete Line of Stage Rigging and Hardware

The Clancy line of equipment is most complete. We have the right unit for every purpose — we do not adapt a stage plan to fit a limited line of equipment. In addition to our line of standard equipment, we also manufacture and install a wide range of special equipment including:

Console Lifts	Electrically Operated Curtains	Light Bridges
Orchestra Lifts	Sound Horn Trucks and Cradles	Revolving Stages
Asbestos Curtains	Special Mechanical Equipment of Every Nature	

A Planning Questionnaire — Free on Request

We have a planning questionnaire, outlining the important information required to properly plan a stage. This questionnaire is interesting and instructive. A copy will be sent, free of charge, to any reader of this catalog.

MACHINERY BUILDERS, INC.

Manufacturers and Engineers of Movable Displays and Equipment
Theatrical Stage Equipment

TELEPHONE
STillwell 4-8081-2

5-17 Forty-Sixth Road, LONG ISLAND CITY, N. Y.



Samuel H. Gottscho

Revolving Floor in Chrysler Salon for Automobile Display, Chrysler Building, New York City
REINHARD & HOFMEISTER, Architects — BARR, IRON AND LANE, General Contractors

Three forward and backward speeds automatically controlled
52 feet outside diameter — 32 feet inside diameter

PRODUCTS

Mechanical Display Equipment; Mechanical Stage Equipment; Photo Electrically Operated Devices, and the developing and manufacturing of any special mechanical equipment or machinery.

Stage Equipment — Orchestra, Stage and Organ Console Elevator; Asbestos and Soundproof Curtains; Picture Sheet Frames; Horn Rigging; Draw Curtain Tracks; Controls; Mechanical Stage Effects; Portable Stages; Floor Traps; Revolving Floors; Movable Floors; Piano Trucks; Stage Band Cars.

Mechanical Display Equipment — Automatically Operated Doors; Photoelectrically Operated Doors and Devices; Automatically Operated Windows, Gates, Blackboards, Awnings, Store Fronts, Floors, Roofs, Ceilings, Skylights, Bars, Walls, and partitions, Revolving Floors and Turntables.



Merry-Go-Round Bar designed and built for Copley Plaza Hotel, Boston, Mass.

Material—Blisterproof Formica
Diameter—23 feet.
Weight—22,000 lbs.
Driving Power—2 horse power motor unit.

ARCHITECT SERVICE

Our Engineering Department specializes in the designing of automatic movable equipment in all types of buildings. Our engineers are at your disposal, without charge, to assist you in laying out mechanical features and in developing special mechanical devices.

Full information of any of our products will be furnished on request.

Modern up-to-date plant of 11,000 square feet for manufacturing new items according to your specifications, and for developing new mechanical ideas.

All equipment is assembled and tested on our premises for your inspection.

J. C. DEAGAN, INC.

World's Largest Builders of Bells, Chimes and Carillons

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TELEPHONE
Lake View 4364

Deagan Building, 1770 Berteau Avenue, CHICAGO, ILL.

BRANCH OFFICES

CALIFORNIA—1306 Fuller Avenue, Los Angeles—Telephone, Gladstone, 1002
NEW YORK—3424 82nd Street, Jackson Heights, New York—Telephone, Newton 9-7765

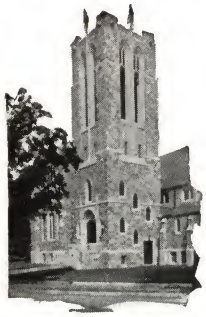
DEAGAN

ESTABLISHED 1880

Products

J. C. DEAGAN, INC., is the originator and the largest builder of electrically operated TUBULAR BELL CARILLONS. Manufacturers of ELECTRIC DOOR CHIMES. Also manufacturers of Scientific Tuning Devices (used in the U. S. Bureau of Standards, Washington, D. C.), Percussive Musical Instruments for hand-playing and organ use, Altar Chimes, etc.

Service to Architects



First Baptist Church, Winchester, Mass.

Architects planning churches, public buildings, office structures, college buildings, country estates or cemetery improvements are urged to consult the Service Bureau of J. C. DEAGAN, INC., for important information on the operation and installation of Carillons. Although Deagan Bells, immune to the elements, may be installed in almost any structure, it is obvious that for best results certain principles should be observed. These principles, involving the size of belfry, design of louvers, size of openings, size of scuttles, wiring information, etc., will gladly be explained in detail on request. Even if impossible to consider a Carillon as part of the original plan, it is sound economy to provide for its possible installation later.

Round Velvety Tone, Exceptional Volume

The richness, beauty and charm of Tower Bells without raucous clang or clamor. Bell music that is pleasing to the ear, and of far-reaching volume.

Automatically or Manually Played

From keyboard, direct from organ console, or automatically—from the Electric Player. The "services" of a Master Carilloneur at command twenty-four hours a day, three hundred and sixty-five days a year.



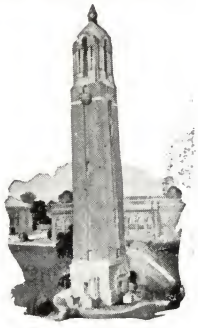
First Methodist Church (Chicago Temple Bldg.), Chicago, Ill.

Deagan Time-Marking Chiming Device

Sounds Westminster Peal (or any other time-marking peal) every 15 minutes—a reliable community time-guide—automatically shuts off for any desired period at night.

Scientifically Tuned

Tone specialists, J. C. DEAGAN, INC., whose Master Tuners are in use by U. S. Bureau of Standards at Washington, and by practically every musical instrument manufacturer and musical organization of importance in North America, tune Deagan Tower Bells to Standard Universal Pitch or to exact pitch of pipe organ.



State College, Carillon Tower Brookings, S. D.

Patented Dampers

Silence one tone at precise instant next is sounded—tone intermingling entirely eliminated—melody stands out clear and distinct—greatest improvement in all carillon history, an exclusive Deagan feature.

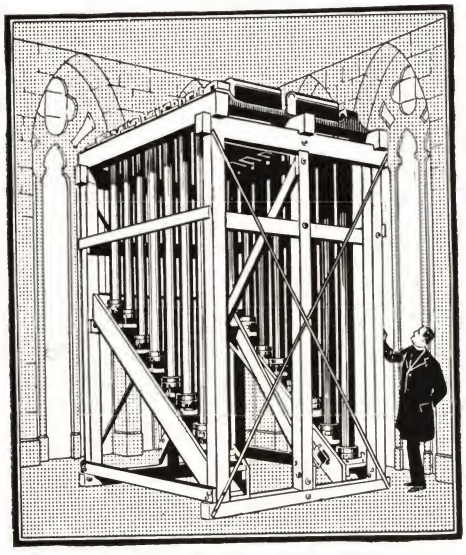
No Excessive Tonnage

Practically any belfry or roof will support a Deagan Carillon without reinforcing. Bells are suspended by flexible cables which allow every ounce of metal to vibrate—no waste weight—carrying power equal to and in many instances surpassing that of any bells on which musical selections are played.



Master Clock

By merely setting the selector the electric player may be made to start the carillon automatically at any desired hour, and to shut it off automatically when program has ended



A Twenty Bell Deagan Carillon

A Few Recent Carillon Installations

St. Paul's Episcopal Church, Maumee, Ohio
St. Ignatius' Church, Chicago, Ill.
Haddonfield Methodist Church, Haddonfield, N. J.
First Methodist Church, Atlanta, Tex.
S. A. E. Chapel, Northwestern University Campus, Evanston, Ill.
Shrine of Blessed Sacrament, Washington, D. C.
Michigan Mutual Insurance Bldg., Detroit, Mich.
City Hall, Pretoria, British South Africa.

J. C. Deagan, Inc., has built and installed nearly *twice as many* Carillons as have *all* of the other bell manufacturers in the world, *combined.*

Unconditionally Guaranteed

Deagan Bells are guaranteed unconditionally against cracking, chipping, breaking, or becoming out of tune for 99 *years* after installation.



The Deagan Electric Player Plays Carillon Automatically

McSHANE BELL FOUNDRY CO.

ESTABLISHED 1856 BY HENRY McSHANE

Founders of Superior Bells and Chimes

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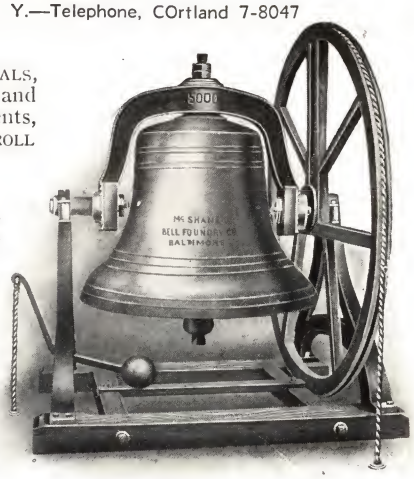
MAIN OFFICE AND FOUNDRY

Harford Avenue and B. & O. R. R., BALTIMORE, MD.

EXPORT OFFICE FOR FAR EAST: Asano Bussan Co., Ltd., 165 Broadway, New York, N. Y.—Telephone, COrtland 7-8047

Products

BELLS for churches, schools, universities, public buildings, towers and clocks; PEALS, CHIMES, CARILLONS; WESTMINSTER CLOCK CHIMES; TUBULAR CHIMES; SHIP BELLS and FIRE ALARM BELLS; RECASTING; ELECTRIC ACTION OPERATING UNITS for all requirements, relay units, keyboards; McSHANE ELECTRIC CHIMING ACTION; McSHANE PLAYER-ROLL ATTACHMENT; BELL HARDWARE.



McShane Service

Many architects have found in the early stages of planning and designing that McShane can give extensive and valuable co-operation and specific recommendations for tower construction, installation and automatic control. Appraisals of damage to bells by fire, etc. made without charge. Call our nearest office or write main office direct.

Known the World Over—More Than 75,000 in Use

Since 1856, the McShane reputation for the best in cast bells, tubular chimes, and operating mechanism has spread into every State and nearly every Nation, being the first to export American Foundry Bell Chimes to Europe. Satisfied architects have placed numerous repeat orders. In your vicinity there are hundreds of McShane installations. Let us send you a list that you may hear and never forget the lovely tone of a McShane.

Superior Cast Bells, Peals, Chimes

All McShane Bells are made of the best Lake Superior copper and Straits tin composition, scientifically attuned to McShane System of Equal Temperament by skilled musicians. Noted for richness of tone, maximum volume and carrying power. Cast in weights from 100 lbs. upwards, with long term guarantee against crackage by regular usage.

Substantial mountings insure easy action and minimum vibration with all bells for hand ringing. Peals and chimes mounted in frames built to conform to tower conditions.

Westminster Chimes—Operated electrically by automatic clock. Sounds appropriate Westminster changes on quarter hours and hours in their turn. Standard equipment.

Tubular Chimes—McShane Tubular Tower Chimes have a sweet, mellow tone, and a good carrying power—they are ideal for towers not specially designed for bells.



Chime Bells

Tubes are of bronze composition, suspended from framework, ranging from 5 to 10 ft. long, 12 to 14 ins. in circumference.



McShane Tubular Tower Chimes

Showing frame and tubes assembled. Standard sets: 10 to 20 tones. Over-all dimensions, 8 ft. square, 12 ft. high

Electrical Operation

Cast bells, peals, chimes may be electrically operated to ring, toll, or sound the Angelus by push button control. Swinging effect produced.

McShane Electric Chiming Action—Standard model consists of keyboard, relay and operating units. Instantaneous action of clapper on bell upon pressure of keyboard. Special model may be operated direct from organ console.



Electric Keyboard

McShane Player-Roll Attachment—Automatic control, similar to player piano in operation. Special automatic clock for starting player-roll attachment at specified time may be obtained.

Current—220 volts, 60-cycle a-c. or 220 volts d-c. No generators. Low consumption.

All orders for McShane Bells, Tubes and Chimes accepted subject to approval of purchaser.

Do not hesitate to call for further information or catalogs.

CHURCH BELLS AND MOUNTINGS

Bell			Mountings	
Tone	Weight, lb.	Diameter, in.	Outside measurements of frame, ft.—in. x ft.—in.	Diameter of wheel, ft.—in.
D#	300	25	3 — 4 x 2 — 8	2 —10
D	400	27	3 — 4 x 2 — 10	3 — 6
C#	500	29	4 — 0 x 2 — 10	4 — 4
C	650	31	4 — 0 x 2 — 10	4 — 4
B	700	33	4 — 5 x 3 — 3	4 — 9
A#	800	34	4 — 5 x 3 — 3	4 — 9
A	1000	36	4 — 9 x 3 — 4	5 — 6
G#	1200	38	4 — 9 x 3 — 7	5 — 6
G	1500	41	5 — 0 x 3 — 10	6 — 3
F#	1800	44	5 — 4 x 4 — 0	6 — 3
F	2000	46	5 — 8 x 4 — 6	7 — 0
E	2500	50	6 — 1 x 4 — 6	7 — 0
D#	3000	54	6 — 8 x 5 — 0	7 — 6
D	3400	55	6 — 8 x 5 — 0	7 — 6
C#	4200	59	7 — 0 x 6 — 0	8 — 0
C	5000	62	7 — 6 x 6 — 0	8 — 0
B	6200	66	7 — 6 x 6 — 0	8 — 6
A#	7000	72	8 — 0 x 7 — 0	8 — 6



Westminster Clock Chimes



Automatic Electric Player-Roll

MENEELY BELL CO.

MAIN OFFICE AND FOUNDRY
22-28 River Street, TROY, N. Y.
TELEPHONE Troy 525
SALES OFFICE: 220 Broadway, New York, N. Y.—Telephone COrtland 7-1749

BELLS FOR ALL TYPES OF SERVICES

Church, Chime, Peal, Angelus, School, Tower Clock, Westminster, Fire Alarm, Fog Signal, Ship, Farm, and other Bells.

The accompanying illustrations show a few of the principal bells manufactured by this company. Our bells are located throughout this country and abroad.

Essential Preliminary Information for Designing Towers



Church Bell

We are glad to co-operate in the proper design of towers to bring out the best physical and acoustical characteristics of bell installations. Following are some general hints:

Provide opening in tower windows, or trap door large enough to admit bells. Floor of bell deck should be level with window sills. Ceiling should be wood located as close as possible to window heads. Installation of conduits, etc., for electrical wiring at time of construction saves considerable later expense. We are glad to send diagrams and suggestions.



Electrically Operated Chime

CARILLONS, CHIMES AND PEALS

Because of the emphasis that we place on proper design and matching of tonal qualities, our bells are particularly well adapted for use in tuned sets, and we specialize in this work. A chime or *carillon* (French) consists of a set of stationary bells which contains enough notes to permit the playing of airs. Ten or more bells, tuned to the diatonic scale and including the flat seventh tone, can be used to play hundreds of appropriate pieces.



Electric Keyboard and Console

A peal contains a smaller number of bells than a chime and is used for the playing of "changes." One of the best known types is the Westminster Peal of four stationary bells on which the celebrated Cambridge Quarters can be rung. Swinging peals of two or more bells are also quite common. In these, the bells are tuned to form a musical chord and are swung together.

Due to our development of an efficient electric striking mechanism, we are able to fill the great demand for a means of mechanical operation of bells. Many of the chimes, peals and single bells which leave our foundry are now equipped to be operated from keyboards or pushbuttons; also from automatic clock-controlled chiming, quarter striking, and Angelus selectors.



Tolling, Hour and Angelus Bell

WEIGHTS, TONES AND SIZES OF CHURCH BELLS

(Specifications of Smaller and Larger Bells on Request)

Bell				Mountings	
Weight, lbs.	Medium tone	Size, in. Diam.	Size, in. Hgt.	Size of frame outside ft. in. ft. in.	Diam. of wheel ft. in.
400	D	27	23	3 5x3 8	4 4
450	C sharp	28	24	3 5x3 8	4 4
500	C	29	24	3 5x3 8	4 4
600	B	31	25	3 8x3 11	4 9
700	B	33	27	3 11x4 2	4 9
800	B flat	34	28	3 11x4 2	5 6
900	A	36	29	4 2x4 6	5 9
1000	A	37	31	4 2x4 6	5 9
1200	A flat	39	33	4 8x4 9	6 3
1500	G	42	36	4 10x4 10	6 6
1800	F sharp	45	37	5 5x5 7	7 0
2000	F	46	39	5 5x5 7	7 0
2500	E	50	41	5 9x6 0	7 0
3000	E flat	53	43	6 4x6 8	7 8
3500	D	56	45	6 4x6 8	7 8
4000	C sharp	58	47	7 4x7 2	8 6
4500	C	61	49	7 4x7 2	8 6
5000	C	63	50	7 4x7 2	8 6
6000	B	67	53	7 4x7 2	8 6
7000	B flat	69	56	8 11x9 2	9 6



Bell Cote Installation

We will gladly send list of local installations of our bells

HAMMOND INSTRUMENT COMPANY

Manufacturers of the Hammond Organ, Hammond Clocks, Electrical Instruments

2915 No. Western Avenue, CHICAGO, ILL.

The Hammond Organ is widely known and accepted because of the beauty of its music, its low price and its universal adaptability. Since its introduction in 1935, more Hammonds have been sold than all makes of pipe organs combined. Thousands have been installed all over the world—in churches, private homes, schools, radio stations, mortuaries, wherever organ music is used.

The Hammond has no pipes, reeds or vibrating parts; its tones are created by electrical impulses. It produces many different tone combinations recalling standard organ stops, plus many orchestral voices entirely new. Its volume is sufficient to flood the largest auditorium, yet it can be softened to a mere whisper. World famous musicians and conductors have been generous in their praise of the instrument.

The Hammond console fits in a space four by five feet, is easy to move and is ready to play when connected to standard 60-cycle alternating current. It is easily installed: structural changes are seldom necessary and the tone cabinets can be placed to meet any acoustical situation. With new construction, specifying a Hammond may cut down building costs thousands of dollars by eliminating the need for large organ chambers. This is in addition to the amount saved on the price of the organ itself.

The average Hammond church or school installation costs less than $2,000; operating and maintenance expense is negligible. It *cannot* get out of tune and has three times the dynamic range of other organs. Because metal and plastics are used in all mechanical parts, the tone producing mechanism of the Hammond is not affected by humidity or changes in temperature. It is guaranteed for three years and with reasonable care will last a lifetime. For complete information write to the above address.

Models and Dimensions

Consoles: Model B, the most popular Hammond for general use; closed, without pedal clavier—48⅜ in. wide, 28¾ in. deep, 38⅜ in. high; open and with pedal clavier—48⅜ in. wide, 47 in. deep, 46 in. high; Price $1220.

Model A is similar to Model B except that the tone generator for chorus effects is not included. Price $1085.

Model E is equipped to meet the most exacting concert requirements. Closed, without pedal clavier—57 in. wide, 40 in. high, 29 in. deep; open and with pedal clavier—57 in. wide, 46⅞ in. high, 47⅝ in. deep. Price $1800.

Tone Cabinets: Model C-20, richly finished for residence installations, $245—29 in. wide, 18¼ in. deep, 53 in. high; Model D-20, an all-purpose cabinet, $165—28 in. wide, 16¾ in. deep, 56 in. high; Model CX-20, $305, and Model DX-20, $225, (same dimensions as C-20 and D-20), provide an additional vibrato effect and are preferable for most installations; Model B-40, a utility cabinet for installations requiring considerable volume, $225—36 in. long, 30 in. deep, 36 in. high.

Prices f.o.b. Chicago and subject to change without notice.



Model B

A Few Hammond Owners

Canterbury Cathedral
Philadelphia Symphony Orchestra
Notre Dame University
Phillips Academy, Andover
U. S. Naval Academy
Madison Square Garden (2)
CBS (11) and NBC (7)
Chicago Musical College
Orson Welles' Mercury Theatre
Hotel Belvidere, Baltimore
Royal Opera House, London
Cornelius Vanderbilt Kelley
Charles F. Kettering
Major John Jacob Astor, M.P.
Lord Victor Rothschild
Maharajah of Indore



Model E



Note the Small Space Required for Installation



Above:
The C-20 Tone Cabinet Is Beautifully Finished in Matched Walnut



The Hammond Blends with the Finest Interiors

H. V. BRIGHT TURN STILE COMPANY

4625 Ravenswood Avenue, CHICAGO, ILL.
EASTERN REPRESENTATIVE: J. W. Fiske Iron Works, 78 Park Place, NEW YORK, N. Y.

TURN STILE EQUIPMENT FOR ENTRANCES AND EXITS

For over a quarter of a century we have manufactured and furnished Turn Stiles for use at many different places, including swimming pools, museums, libraries, pay-toilet rooms, stadia, baseball parks, university and high school athletic fields, amusement parks, expositions, fair grounds, self-service groceries, ferry and boat landings, race tracks, etc. Estimates furnished for subways and elevated railroad Turn Stile equipment. In addition we furnish hardware for metal or wood Exit or Baffle Bates; also ticket canceling machines.

"Bright-Johnson" Space-Saver Turn Stile

A four-arm registering Turn Stile that can be set up and operated in a much smaller space than the regular full size Turn Stile. Width over all from outside of aluminum top to end of arms is only 22 in. It is equipped with a patented air shock absorber that insures quiet operation. Illustrations show the idea of the space-saving feature: arms drop as they enter the housing and come into place in the entrance as each person passes through. The Turn Stile arms are round, chrome plated, 1¾-in. diameter. Each arm revolves on its own ball bearing, which makes for ease of operation. The Space-Saver can be furnished in the Coin Controlled pattern or as a regular Registering Turn Stile more generally used with tickets. Can be furnished in different combinations, such as one-way entrance only; entrance and exit, registering only on the entrance.

An outstanding feature of the Space-Saver is the position of the arms as the person passes through in that they rotate parallel to the floor during the effective port of their movement in the entrance.

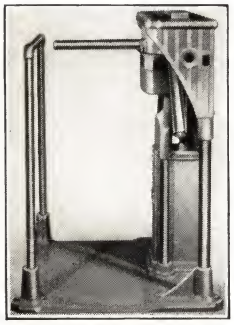


Fig. 1. Space-Saver Complete with Railing and Platform

Also furnished with the short base without railing and platform

Bright Automatic Turn Stiles

Eliminate necessity of foot lever release or other mechanical movement by attendant. Patrons operate Turn Stile. Can be furnished with foot lever control so arranged that Turn Stile cannot be operated until foot lever is held down by attendant. Air shock absorbers check arms at each quarter turn.

Bright Turn Stile Registers

Turn Stile can be equipped with printing or plain registers which run from 1 to 100,000 and then start over again at 1, without having to be reset. Printing register records the opening and closing numbers on a specially prepared slip which is inserted in an opening in the register case and printed by the turning of a key.

Some Users of "Bright's" Turn Stiles

American and National Baseball Leagues, all clubs
Playland Amusement Park, Rye, N. Y.
Niagara Falls State Reservation, Niagara Falls, N. Y.
Coney Island, Cincinnati, Ohio
Wisconsin State Fair, West Allis, Wis.
National Orange Show, San Bernardino, Cal.
Cleveland Municipal Stadium, Cleveland, Ohio
University of Kansas, Lawrence, Kan.
Chrysler Tower, New York, N. Y.
Chicago Stadium Corp., Chicago, Ill.
Miami Jockey Club, Miami, Fla.
Arlington Race Track, Arlington Heights, Ill.
University of Illinois, Urbana, Ill.
Municipal Swimming Pool, Oakland, Cal.
Los Angeles County Fair, Pomona, Cal.

DIMENSIONS

Fig.	Height, ins. To top	Height, ins. Top of arms	Height, ins. Bottom of arms	Width over all, in.
1	38¾	34½	32¾	28
2	38¾	35	32¾	22*
6	40½	36	16½	39
7	40½	36	24½	39
8	38¼	34½	25¼	39

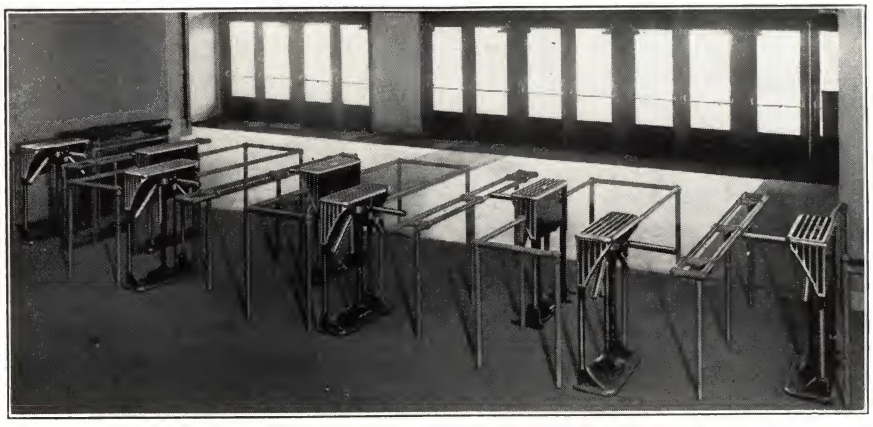
*Length of machine over all, 27¼ ins.



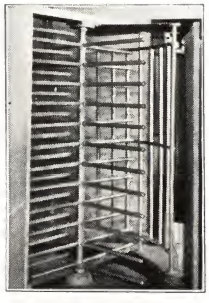
Space-Saver at "Jewel Box" Floral Observatory, St. Louis, Mo.



Fig. 2. Space-Saver at City of New York Municipal Baths, Coney Island



Installation of Space-Savers at the Cleveland, Ohio, Hockey Arena
They have the exit feature, registering on the entrance but not on the exit



All Metal Exit or Baffle Gate

Shipped complete knocked-down to be assembled on job

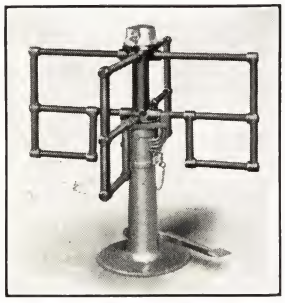


Fig. 6. Registering Turn Stile "B"

Equipped with arms that make it hard for anyone to crawl under. Also furnished in the Non-registering pattern

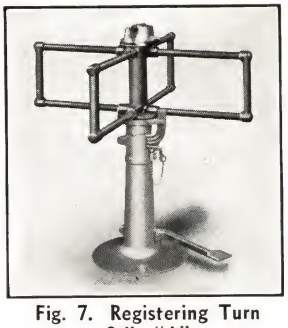
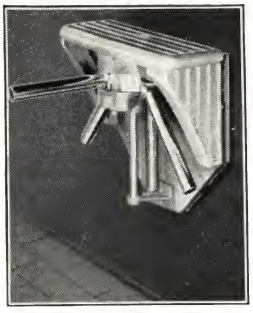


Fig. 7. Registering Turn Stile "A"

Our lowest priced Turn Stile. Also furnished in the Non-registering pattern with or without foot lever control



Wall Model Space-Saver

Can readily be removed by lifting it off of the brackets

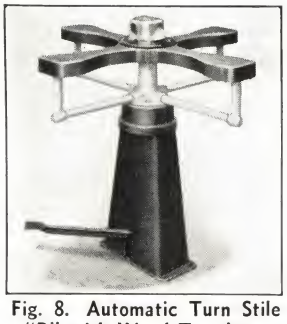


Fig. 8. Automatic Turn Stile "D" with Wood Top Arms

Also furnished with aluminum top arms chrome plated

PEREY TURNSTILE COMPANY

101 Park Avenue, NEW YORK, N. Y.

SALES OFFICES: CHICAGO, 37 W. Van Buren Street; LOS ANGELES, Suite 1200, Title Guarantee Bldg.; SAN FRANCISCO, 210 Post Street

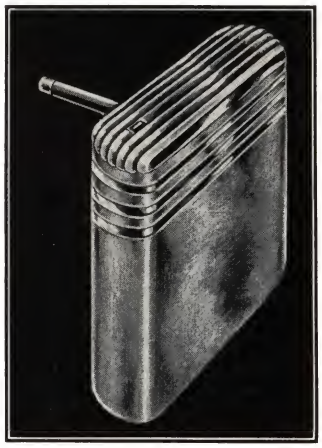
ARTISTIC ENTRANCE AND EXIT EQUIPMENT FOR REGISTRATION AND ADMISSION COLLECTION

Leadership—Acknowledged for Years

PEREY TURNSTILE COMPANY is the largest producer of turnstiles in the world, and has been building equipment for pedestrian traffic control and for registration and admission collection for the past 47 years. The first subway system in New York as well as the elevated stations were equipped with turnstiles made by Perey, which are still giving satisfactory service. Every subway in the United States is using Perey Turnstiles. The Perey Company offers the widest range of types and styles for every purpose for which turnstiles are used, such as for Rapid Transit Systems, Swimming Pools, Stadiums, Race Tracks, Amusement Parks, Theatres, Museums, Zoos, Cafeterias, Self-Service Stores, Pay Lavatories, Hotels, etc.

Real Beauty Achieved by Perey

A few years ago, Perey, realizing that turnstiles needed beauty and artistic appearance, engaged artists and designers to bring beauty of line and harmony of design demanded by architects and engineers. A specific current example is the development and building by Perey of the modern, artistic "Turnstile of Tomorrow" for the New York World's Fair of 1939 (illustrated at right), as well as another for the San Francisco Golden Gate Exposition of 1939.



A Complete Consulting Service for Architects

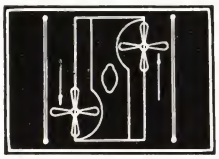
Perey offers to architects a specialized service for planning entrance and exit control and proper selection of artistic turnstile equipment to harmonize with modern surroundings. Available through the main office or through the branch offices listed above. Experience has proved that the full value of this service can be realized only if it is rendered continuously from the time the projects are in the sketch stage through to the making of working drawings.

To plan a system that is both comprehensive and practical, Perey Engineers should have a general knowledge of the function and operation of each department where entrance and exit control is desired. The wealth of experience gained from a lifetime spent in solving highly technical problems attached to control of entrances and exits, is offered to architects without obligation whatsoever. A study of present conditions and future trends renders this experience both authoritative and dependable.

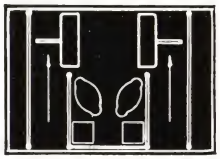
Space Saving Turnstiles

Perey originated the first practical space saving turnstile. Characterized by three tubular metal arms set in a hub, in the form of a truncated cone, it requires ⅛ *less space* than conventional four arm types. Under the trade name KOMPAK it is by far the largest selling space saving turnstile in the world. KOMPAKS are available in Traffic Controller, Passimeter, Attendance Recorder and Coinpassor models.

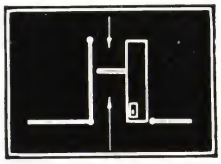
Typical Entrance and Exit Layouts



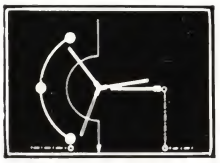
Entrance and Exit Controlled by 2 Passimeters—1 attendant.



Entrance using 2 Kompak Passimeters, 2 attendants, 2 ticket boxes.



Entrance and Exit using 2-Way Kompak Coinpassor.



Exit using Ful-Stride Roto-Gate installed in fence.

FLOOR SPACE REQUIRED

Approximate only. There are several types of turnstiles in each classification. Full specifications on request.

Classification	Conventional 4-arm types		Space Saving Types		
	Length, In.	Width, In.	Length, In.	Width, In.	Effective Arm Length, In.
*Traffic controllers	38	38	22	20¾	14
*Attendance.. Recorders	38	38	27½	21¼	14
*Passimeters.	38	38	27½	21¼	14
*Coinpassors.	42½	34	27½	21¼	14
*Coinpassors, heavy duty	54½	42½	42½	26	15
Roto-Gates	....	....	57	65½	24

*Note: In planning installations of these turnstiles additional space should be allowed for guide railings parallel to line of travel. Provide for 3-in. clearance between end of passage barring arm and inside edge of railing. Provide railing for at least the length of turnstile.

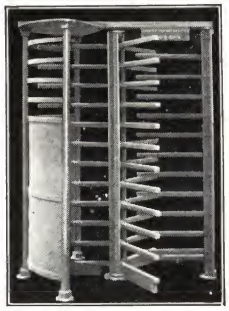
A Few Notable Perey Turnstile Users

Frick Collection, New York, N. Y., John Russell Pope
Metropolitan Museum of Art, John Russell Pope
Toledo Museum of Art
Museum of City of New York, Joseph H. Freedlander
Rockefeller Center, New York, N. Y., Harrison & Foulihoux
Empire State Building, Shreve, Lamb & Harmon
University of California
Los Angeles Memorial Coliseum (Olympic Stadium)
Buffalo Municipal Stadium, George F. Townsend
William & Mary Stadium, Norfolk, C. A. Neff
Yale University Gymnasium, John Russell Pope
Michigan State Fair, Harley & Ellington
Santa Anita Race Track, California, G. B. Kaufman
Brooklyn Botanic Garden, McKim, Mead & White
New York Zoological Park, Charles A. Platt
City of Chicago, Parks and Beaches
City of Washington, D. C., Swimming Pools
Saratoga Springs Spa, Dwight James Baum
TransLux Theatres, Thomas Lamb
Grand Central Terminal, Warren & Wetmore
A. & P. Food Stores Super Markets
Subways, City of New York
Subways, City of Philadelphia
Subways and "Els," Boston Elevated Railroad
Chicago Rapid Transit Company "El" Lines

Major Classifications of Perey Turnstiles

World's largest range of turnstiles to choose from. Space permits us to show but a few of the many types we make.

Traffic Controllers (Non-Registering)



Full-Stride Roto-Gate High Traffic Controller

High Traffic Controllers

High, one-way revolving gates of the baffle type for controlling direction of traffic and protecting exits. Can be used either indoors or out. Can be tied in with fence. Furnished complete, knocked down. Easy to erect. Made in Impenetrable and Standard Types in several designs. Mechanism is enclosed—tamper-proof, weather-proof and silent. Construction is all-metal, roomy, space-saving. Artistic in appearance.



Traffic Controller

Low Traffic Controllers

Control the direction of pedestrian traffic, prevent exit through entrances or vice versa, separate opposing streams of traffic. Made in several artistic models including all metal four arm types with chromium plated arms or in special metals, bronze, etc. to order; all metal Kompaks (space saving) types; Wooden Arm (four arm) type with metal pedestal. All are silent operating—feather weight action.

Coin Controlled Turnstiles (Coinpassors—Superstiles)



Portable Superstile

Automatically collect cash fares and admissions. Coin deposited in slot unlocks the turnstile. Exclusive Perey operating principle—coin operates no mechanism, acts only as a key. Can be calibrated for any coin or round metal token, or for combinations of certain related sizes of coins and tokens. Furnished in several artistic types, including Kompak (Space Saving) Coinpassors and Superstiles, Heavy Duty Coinpassors and Little Giant Coinpassors (four arm). All are silent operating—feather-weight action — speedy, faster crowd handling capacity proven by test.

Registering Turnstiles (Attendance Recorders, Passimeters)



Solid Bronze Attendance Recorder

Attendance Recorders Non-Attendant

Automatically count people as they pass through, and at the same time control traffic. Made in several artistic models—Empire State, Kompak (Space Saving) and special museum types. All of these artistic models can be furnished in bronze, aluminum or other special metals to order. Special *Silent* Models.



Empire State Passimeter

Passimeters

Record number of persons passing through. Cashier or ticket taker can control passage of persons, prevent "gate-crashers," etc., with locking levers. Furnished either in "always locked" type, which attendant must unlock for each patron, or "always open" type which passes patrons faster and is under instant control of attendant. Made in many artistic types and finishes including Empire State and Kompak (Space Saving). Special *Silent* Models.

MEMORANDA

FRED MEDART MANUFACTURING CO.

Gymnasium and Playground Apparatus, Gym Seats, Swimming Pool Equipment

326 W. Madison Street, CHICAGO, ILL. | 3562 DeKalb Street, ST. LOUIS, MO. | 16 W. 61st Street, NEW YORK, N. Y.

Engineering and Sales Service in Principal Cities

For Medart Steel Lockers, Steel Wardrobes and Gym Seats, see File Index

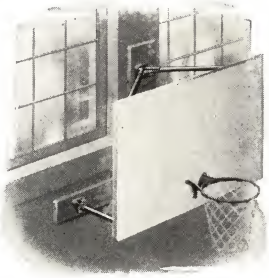
GYMNASIUM APPARATUS AND BASKET BALL BACKSTOPS

Basket Ball Backstop installations for new buildings require specialized engineering. Girder fittings, extensions, drops, guys, braces, and hoisting devices are planned according to individual structural conditions. Reinforced concrete beams and suspended plastered ceilings require advance planning of the correct type and number of pipe hanger girder fittings for both Backstops and Suspended Gym Apparatus. Such fittings should be specified in the general building contract so as to be in place before concrete is poured or ceilings closed in. A few standard Medart Backstops are shown on this page.

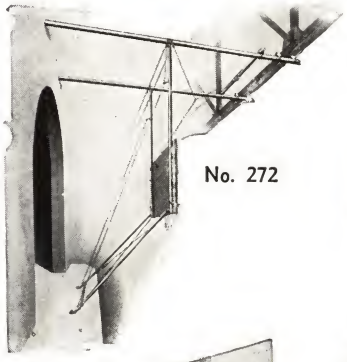
The Medart Engineering Department will completely plan Backstop installations for architects without cost or obligation. Send floor and elevation prints.



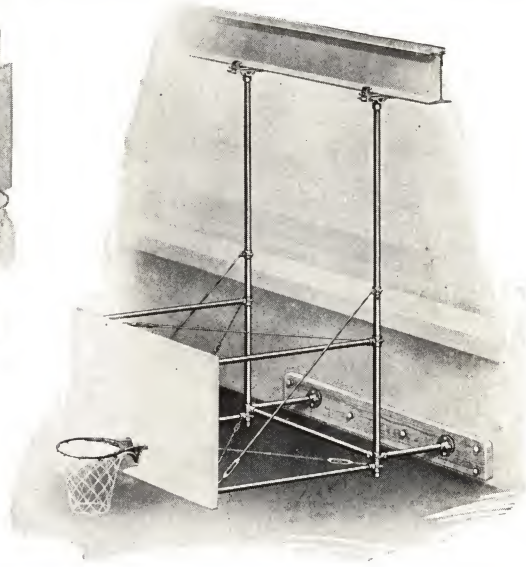
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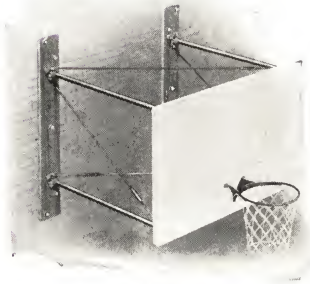
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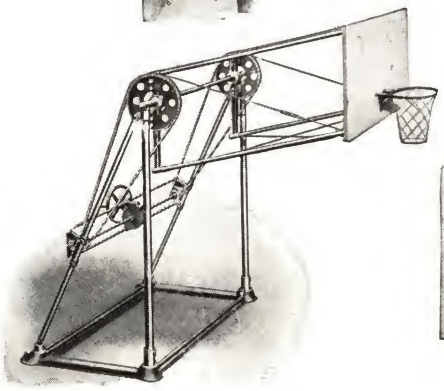
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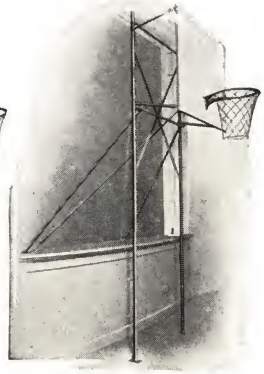
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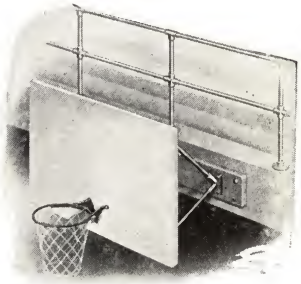
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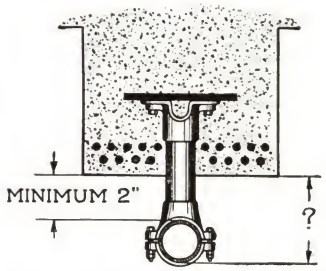
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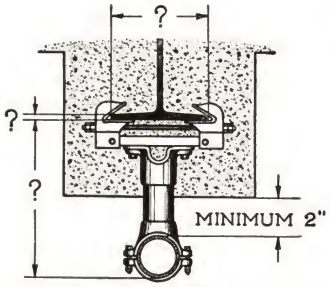
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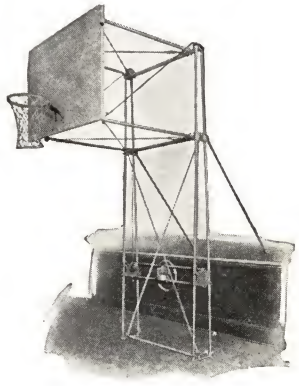
No. 271



Concrete Beam Fitting No. 294



Enclosed I-Beam Fitting No. 325



No. 460

Catalogs

Catalog BB-2 is devoted entirely to Basket Ball Backstops; Catalog G-3 to Gym Equipment; Catalog P-4 to Playground Apparatus; Catalog GS-2 to Gym Seats, Catalog WS-1 to Pool Equipment, Catalog L-6 to Steel Lockers, and Catalog LR-3 to Steel Wardrobes. Sent free on request.

ESTABLISHED 1909

BABCOCK-DAVIS CORPORATION

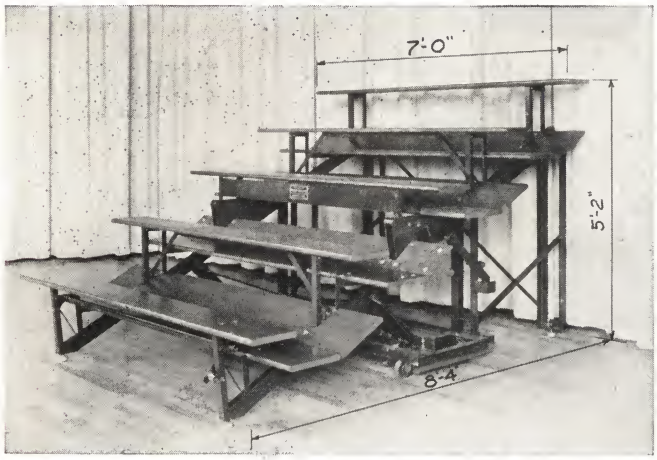
Manufacturers of Folding Semi-permanent and Permanent Grandstands

474 Dorchester Avenue, BOSTON, MASS.

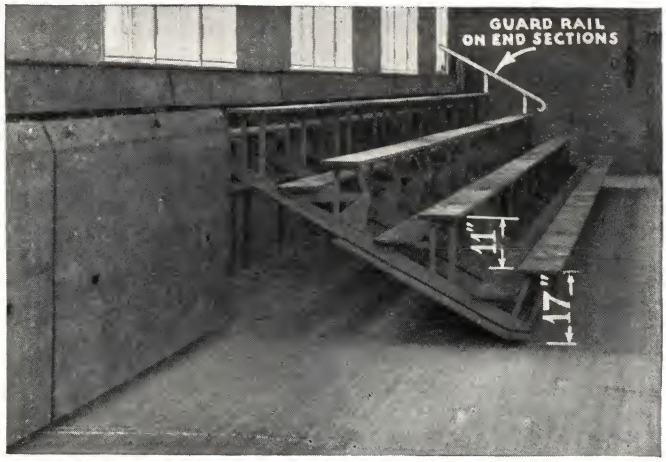
For other Babcock-Davis pages, see File Index

GYMSEATING

Portable Folding (PATENTED) **Self-Balancing**



Five-row Portable Folding Gymseating on Stage of Wellesley, Mass. Senior High School
Self-supporting on castors.



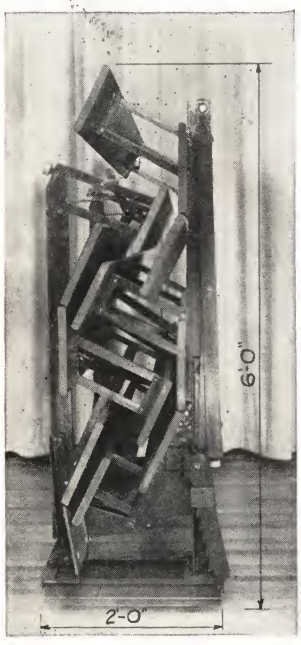
Five-row Self-balanced Gymseating Installed at Curtis High School, St. George, Staten Island
New York City Board of Buildings

Valuable floor space is made available for other uses by Babcock-Davis Gymseating. The Portable Folding Type is not attached to building—may be used on the stage, etc. and stored away when not in use. The Self-balancing Type folds neatly and compactly in place along the wall.

Gymseating provides for: (1) Correct vision and comfort with 11-in. rise and 22-in. spacing between seats. (2) Absolute safety to spectator and operator—automatic lock. (3) Self-balancing and easy to operate. (4) Panel on stand may be made to match wainscot. (5) Panel enclosure does not touch floor at any time. (6) Permits entire floor to be cleaned. (7) Adequate circulation of air around radiators or heat units. (8) Protection against ball going behind stand.



Illustrating the self-balancing principle and how compactly the seats are folded.



Five-row Portable Gymseating Folded

SPECIFICATIONS

Operation—Each unit consists of two articulated sections pivoting in a counter-balanced arrangement so that one person may open or close a section.

Construction—Made in various lengths and number of rows. Structural steel supporting members. Each seat and footboard to support 120 lbs. live load per linear foot with safety factor of 4. Rubber footpads for each bearing point on floor.

Lock—Automatic locking device secures each unit in open or unfolded position. Lock is furnished to prevent tampering with this locking device.

Guard Rail—On the upper section of Self-balancing Type Stand a guard rail is furnished. Folds automatically.

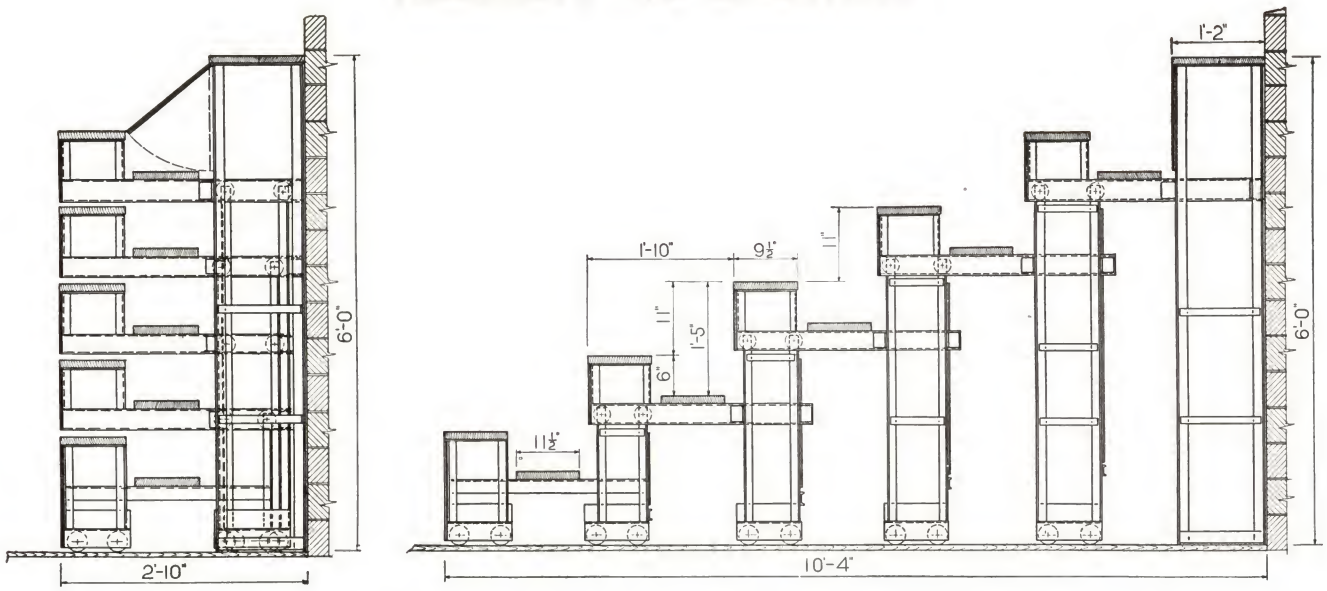
Woodwork—Seat and footboards of No. 1 Douglas Fir 9½ x 1¼ in. before finishing. All edges to be eased. Panel enclosure (not usually furnished on Portable Type) of best grade 5-ply Douglas Fir ½ in. thick. Forms a flush protective wall when stand is folded. Panel facing does not touch floor at any time.

(Dimensions given on following page)

A Few Installations

Building	Location	Architect
Lee High School	Lee, Mass.	Morris W. Maloney
Montgomery High School	Montgomery, N. Y.	Knappe & Morris
East Chester High School	Tuckahoe, N. Y.	Tooker & Marsh
Belleville High School	Belleville, N. J.	Guilbert & Betelle
La Salle Academy	New York, N. Y.	Delano & Aldrich
Hope Street High School	Providence, R. I.	Public Building Dept.
Curtis High School	St. George, Staten Island	Board of Buildings
Brooklyn Technical School	Brooklyn, N. Y.	Board of Buildings
Franklin K. Lane High School	Brooklyn, N. Y.	Board of Buildings
Andrew Jackson High School	Queens, N. Y.	Board of Buildings

PROGRESSIVE TYPE "GYMSEATING"



A less expensive type of folding gymstand that meets P.W.A. Specifications.

One person can open or close a section of "Gymseating" quickly, easily and safely. The construction makes folding or unfolding of the seats a smooth gliding movement.

Designed for comfort and correct vision which, according to the best authorities, is 11-in. rise and 22-in. spacing for each seat. Removable guard rails are furnished at open ends for safety.

Progressive Gymstands have double supports under each seat and footboard which prevents swaying or rocking. Rugged construction and materials insure a long life for the seats *without repair.*

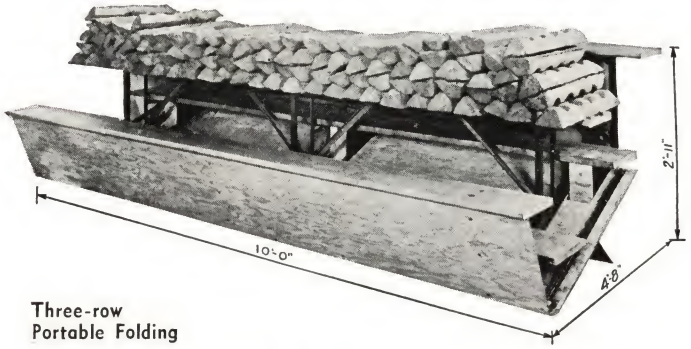
No springs to lose tension and let supports drag on the floor. No plates in the floor for locks.

Neat in appearance—open or closed. Adapted to various types of architectural design. Finish is comparable to that used on school furniture. Easy to clean under, assuring sanitary conditions.

SPECIFICATIONS

The standard unit is 16 ft. long, with 3 to 12 rows of seats, complete with steel understructure, footboards, seatboards and face panels.

Operation—Seats and footboards glide one into another, and one or more rows may be opened for use with the others remaining closed. The first row of seatboards is 18 in. above floor. Each additional row rises 11 in. Width of each row is 22 in.



Three-row Portable Folding

One seat holds 4587 lbs. in a test made on this 10 ft. section of portable gymstand.

Construction—Each seat and footboard has 4 sets of two-angle iron upright supports to carry weight of seat and footboard to the floor through 8 roller bearing Babolite composition wheels. These wheels shall have safety factor of 4. Seats and footboards travel progressively on ball bearing wheels that roll in special "J" type tracks.

Safety—Constructed to support safely their own weight and a live load of 120 lbs. per linear foot of seatboards, plus 120 lbs. per linear foot of footboard, and a horizontal swaying force applied to the seats of 24 lbs. per linear foot, plus a safety factor of 4.

Woodwork—Seatboards and footboards are No. 1 Douglas Fir surfaced four sides with all edges neatly finished. Seatboards 9½ in. wide and 1¼ in. thick before finishing. Footboards 11½ in. wide and 1¼ in. thick before finishing. Bottom riser hinged to lower seat for cleaning. Top riser hinged to make complete enclosure and exclude basketball. All risers are 3-ply Douglas Fir Plywood ⅜ in. thick.

Lock—A cylinder lock is furnished for locking gymstand in either open or closed position. Removable guard rails 30 in above seatboards are furnished for open end sections. For circulation of air, vent grilles may be installed in lower riser.

Paint—Woodwork is given one coat of oil stain, one coat of shellac, and finished with two coats of varnish. All metal parts receive one coat of metal primer and one coat of finish paint of desired color.

Guarantee—All Progressive gymstands are guaranteed for a period of five years against faulty operation and workmanship, normal wear and negligence excepted.

Note: We will be glad to work with you on any problem. Gymstands can be built to other than standard specifications given above.

DIMENSIONS — PROGRESSIVE TYPE GYMSTANDS

Number of Rows	Height Open or Closed	Depth Open	Depth Closed
3	3′-3″	4′-7¾″	2′-7¾″
4	4′-2″	6′-6½″	2′-8½″
5	5′-1″	8′-5¼″	2′-9¼″
6	6′-0″	10′-4″	2′-10″
7	6′-11″	12′-3″	2′-11″
8	7′-10″	14′-2″	3′-0″
9	8′-9″	16′-1″	3′-1″
10	9′-8″	18′-0″	3′-2″
11	10′-7″	19′-11″	3′-3″
12	11′-6″	21′-10″	3′-4″

DIMENSIONS — PORTABLE AND SELF-BALANCING GYMSTANDS

Number of Rows	Depth with 22-in. Spacing		Height with 11-in. Rise per Row		
			Portable		Self-balancing
	Open	Closed	Open	Closed	Open or Closed
4 row	6′-7″	24″	4′-3″	4′-9″	4′-2″
5 row	8′-4″	24″	5′-2″	5′-6″	5′-1″
6 row	10′-4″	24″	6′-1″	7′-0″	6′-0″
7 row	12′-0″	27″	7′-1½″	8′-0″	7′-1½″

Can be made to lower height by cutting down rise.

HORN FOLDING PARTITION COMPANY

Manufacturers of Folding Partitions, Folding Bleachers, Sound Proof Doors and Vertislide Partitions

GENERAL OFFICES
FORT DODGE, IOWA

NINTY-SIX SALES AND SERVICE OFFICES FROM COAST TO COAST

For Horn Partitions, see File Index

HORN FOLDING BLEACHERS

Modern Gymnasiums Need Modern Equipment

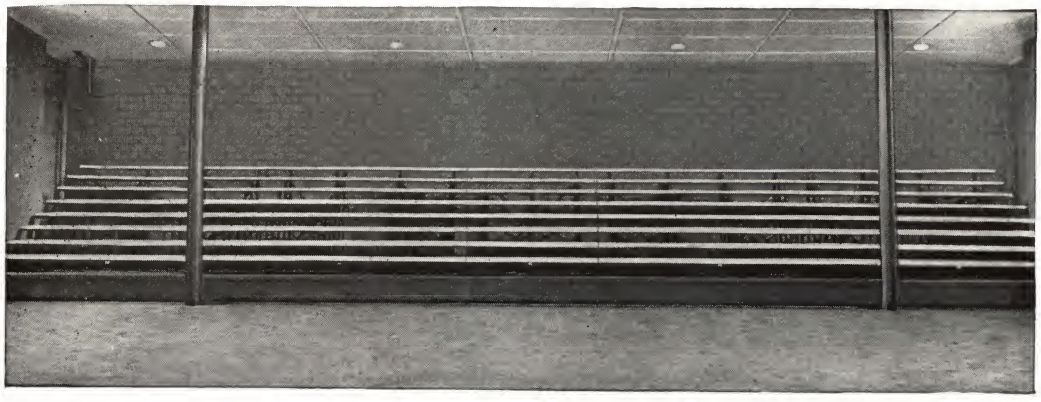
Accordion Folding Bleachers by Horn are the newest and most practical solution to the gymnasium seating problem. In designing these bleachers, Horn Engineers carefully considered all the features which make modern gymnasium seating desirable and practical.

The entire steel understructure is electrically welded by the latest and most efficient methods. Rivets, bolts, and screws are not depended upon at the vital loading points. The smooth "telescoping" action, originated by Horn, is accomplished by means of folding arms, not slides. This insures against binding and sticking and permits the bleachers to be folded into the least possible space.

Seats and footboards are of genuine vertical grain Douglas Fir, with edges neatly rounded. When in the closed position, the seats automatically raise thus forming the enclosure for the bleacher without the use of special counter-balanced panels.

Exclusive Horn Features

Telescoping folding arms, not slides.
No skirt boards required.
Completely enclosed when folded.
Seatboards 9½ ins. wide.
Footboards 11½ ins. wide.
Uniform rise from row to row.
18 in. chair height seats.
Closes into minimum space.
All supports directed to floor.
Genuine no-mar rockite wheels.
Can be 20 rows in height.
Approved in all states.
Guaranteed 5 years.
No heavy lifting springs.
Easily installed in old or new buildings.
Steel understructure amply X braced.
All steel is electrically welded.





Top:

Horn Bleachers in Open Position

This is an installation consisting of 9-row units requiring 15 ft. 1 in. while in use. When the sections are pushed back to the wall, they are stacked into a space of 3 ft. 3½ in. This includes a 4-in. space between the top seat and the wall to allow spectators to sit comfortably on the top row.

Note how perfectly the boards line up in both the open and closed positions.

For beauty, economy, ease of operation, and strength, the Horn bleacher is unexcelled.

Through the patented principle of fold-arms it is possible to use ample X-bracing in the steel understructure. For that reason wood riser boards are not required to insure against side sway. The complete absence of riser boards affords more comfortable seating for spectators since the leg room is greater.

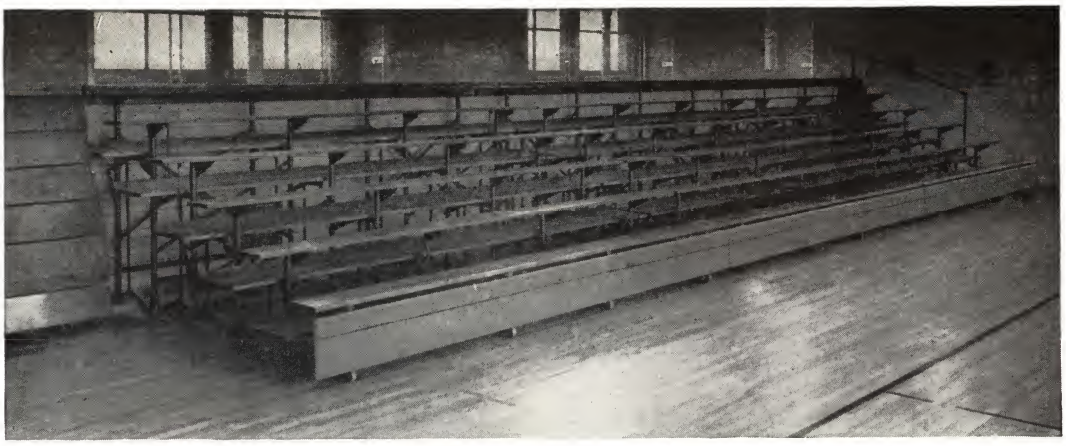
Bottom:

Horn Bleachers Closed

Three Sections of Bleachers in Open Position and Part of One Section Completely Closed

Standard units of Horn bleachers are 14 ft. long. Shorter sections are furnished to make any given length. Each 14-ft. unit has four rows of supports directly to the floor.

Note removable guard rail.



SPACE REQUIREMENTS, STANDARD BLEACHER

Rows	Floor Space				Height†	
	In use*		Closed*			
	Ft.	In.	Ft.	In.	Ft.	In.
3	4	7	1	7¼	3	0
4	6	4	1	10⅝	3	9
5	8	1	2	2	4	6
6	9	10	2	5⅜	5	3
7	11	7	2	8¾	6	0
8	13	4	3	0⅛	6	9
9	15	1	3	3½	7	6
10	16	10	3	6⅞	8	3
11	18	7	3	10¼	9	0
12	20	4	4	1⅝	9	9
13	22	1	4	5	10	6
14	23	10	4	8⅜	11	3
15	25	7	4	11¾	12	0
16	27	4	5	3⅛	12	9
17	29	1	5	6½	13	6
18	30	10	5	9⅞	14	3
19	32	7	6	1¼	15	0
20	34	4	6	4⅝	15	9

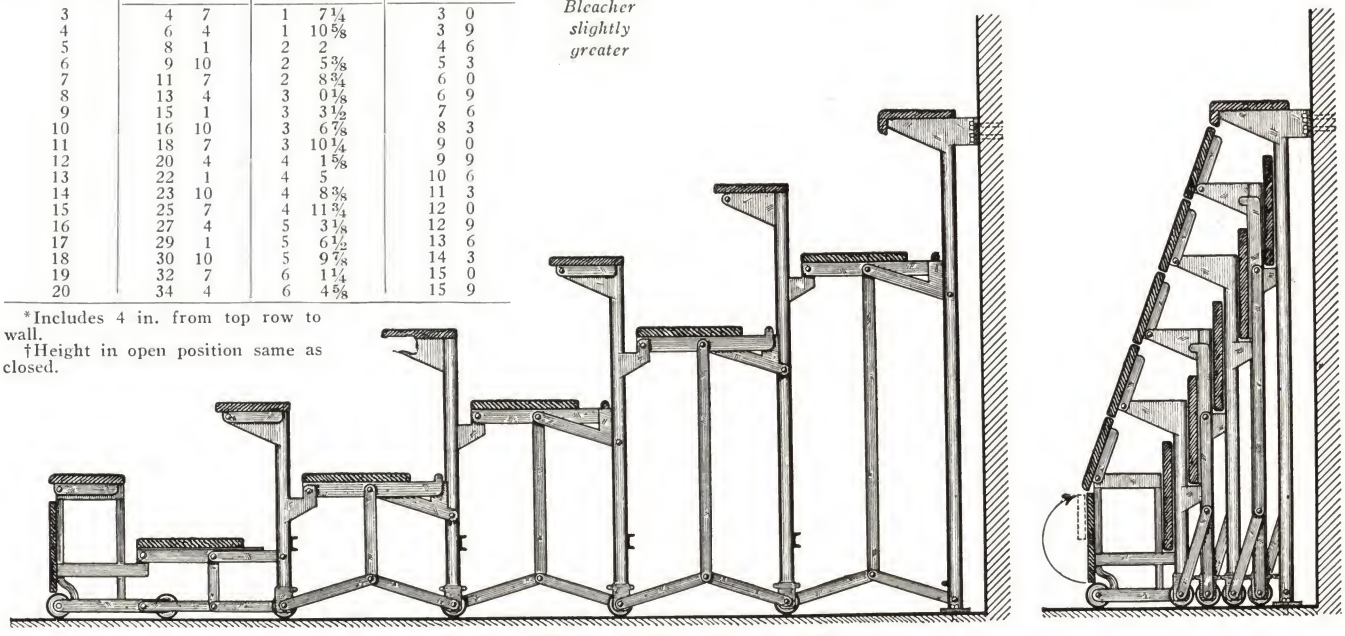
*Includes 4 in. from top row to wall.

†Height in open position same as closed.

Height of Panel Type Bleacher slightly greater

Open

Closed



Sections Through Horn Standard Bleacher

SPECIFICATIONS

Furnish and erect in gymnasium as shown on plans and hereinafter specified Folding Bleachers as manufactured by Horn Folding Partition Company, Fort Dodge, Iowa, or other bleachers equal and approved, similar in construction, design, and operation. The bleachers shall be of the following quantities: (State length of sections and number of rows). Bleachers shall consist of steel understructure, footboards, seatboards, and all fittings connected together to form one integral assembly.

Principle of operation shall provide that seats and footboards shall telescope to the wall requiring only one continuous operation for opening and closing and shall be so constructed that one or more rows can be opened for use while the rest of the seats remain in the closed position. The first row of seatboards shall be not less than 18 in. above the floor and each additional row shall have a rise of not less than 9 in. There shall be a space of 4 in. between the top seat and wall.

Bleachers shall be designed and constructed to safely support, when in use, in addition to their own weight, a live load of 120 lbs. per lin. ft. of seatboard plus 120 lbs. per lin. ft. of footboard, and a horizontal swaying force applied to the seats of 24 lbs. per lin. ft. plus a safety factor of 4.

All woodwork shall be B or better strictly clear vertical grain Douglas Fir. Seatboards and footboards shall be surfaced four sides with all edges neatly rounded. Seatboards shall not be less than 9½ in. wide and 1¼ in. thick before sanding. Footboards shall be not less than 11½ in. wide and 1¼ in. thick before sanding. Foot and seatboards shall be secured to steel understructure with not less than two ¼-in. step bolts for each structural support.

Furnish front hinged kickboard which shall be ¾-in. thickness, said boards to be full length of bleacher unit and made up of two pieces totaling 14 in. in width. Lower sections shall be hinged by means of steel offset strap hinges recessed into kickboard. Kickboard shall be so hinged that it can be extended into a vertical position and held there by means of special hinged arm whcih shall be securely fastened to underside of kickboard.

All vertical supports shall consist of structural steel tubing. The seat brackets shall be of formed sheet steel and shall be electrically welded to tubing supports. Standard units shall be 14 ft. long and shall have four vertical supports, such supports must be fastened together in pairs by X bracing which shall be electrically welded to said supports. X bracing shall be spanned from the top of the support to the bottom so that the structural strength may be increased to the maximum. Provide continuous steel channels approximately 8 in. above floor line which shall connect the four vertical standards.

Bleachers shall lock in the closed position by means of a special key lock and bolt arrangement. Bleachers shall not require any locking in the open position.

Bleacher shall be transported from the open or closed position on genuine Rockite composition wheels. Such wheels to be not less than 3-in. diameter and having a face dimension of 1⅛ in. All wheels to be furnished with bronze bushings and operated on a cold rolled steel axle not less than ½-in. diameter.

Woodwork shall be given two coats of genuine Horn Sealer mixed with stain to give desired shade. All metal parts shall be free from shop grease and carefully cleaned with thinner. They shall receive two coats of approved School Furniture Brown.

When the bleacher is in the closed position the seatboards shall automatically tilt into a vertical position, thus forming a completely enclosed unit. This operation shall be entirely automatic.

All bleachers shall be installed by factory-trained mechanics and guaranteed for a period of five years against faulty operation and workmanship, normal wear and negligence excepted. Manufacturer must certify that he has previously furnished equipment which meets the general design as called for in the specifications and that it has given continuous service for a period of not less than one year.

UNIVERSAL BLEACHER CO.

Manufacturers of Folding Gymnasium Stands; Portable Bleachers and Portable Wood and Steel Bleachers

606 So. Neil Street, CHAMPAIGN, ILL.

FOLD-A-WAY GYMNASIUM STANDS



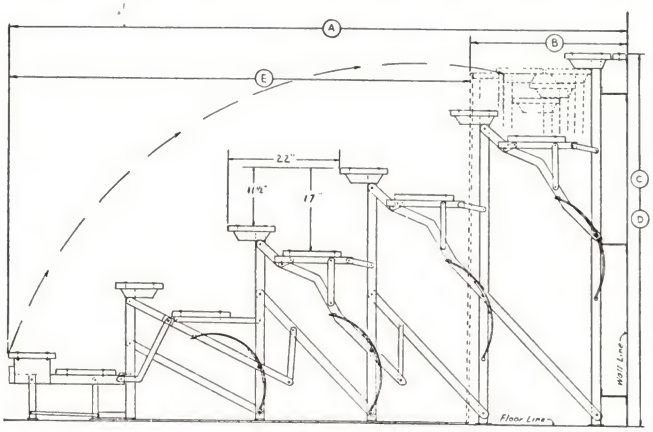
COMFORTABLE, ROOMY SEATING—Universal Fold-A-Way Stands are rigid and safe. The seat and foot boards are of such width and placement as to assure maximum spectator comfort.

MORE USABLE GYMNASIUM SPACE—When closed these stands fold compactly against the wall, concealed behind beautifully finished solid cabinets, making available for athletic uses many additional square feet of floor space.

EASY ACCESS FOR CLEANING—Because cabinet and stand sections operate independently, these stands may be folded and the cabinets left open, assuring ready access to both floor and wall areas.

GYM FLOOR PROTECTION—The closure panel lays out on the floor for the stand to rest upon, thus protecting the floor. There are no composition casters to wear out or to grind dirt into the floor. Self-contained locks operate automatically when the stand is opened or closed, eliminating holes in the gym floor and avoiding uncertain alignment with these holes as found in some of the roll or push type stands.

DIRECT SUPPORT AND X-BRACING OF SEATS—Each row of seats is supported every four feet on steel legs extending from seat to floor. Each vertical leg is diagonally X braced against thrust and side sway.

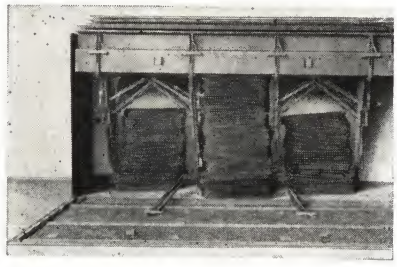


FOLD-A-WAY SIZES

Rows high	A Depth opened	B Depth closed	C Height in use	D Height closed	E Space gained
3	4′ 8″	1′ 8″	3′ 0″	3′ 0″	3′ 0″
4	6′ 6″	1′ 11½″	3′ 11½″	3′ 11½″	4′ 5½″
5	8′ 4″	2′ 3″	4′ 11″	4′ 11″	6′ 1″
6	10′ 2″	2′ 6½″	5′ 10½″	5′ 10½″	7′ 7½″
7	12′ 0″	2′ 10″	6′ 10″	6′ 10″	9′ 2″
8	13′ 10″	3′ 1″	7′ 9½″	7′ 9½″	10′ 9″
9	15′ 8″	3′ 5″	8′ 9″	8′ 9″	12′ 3″
10	17′ 6″	3′ 8″	9′ 8½″	9′ 8½″	13′ 10″

SCORING TABLE BUILT-IN—Adequate table space for scoring athletic events is an added feature with Universal. The table is six feet long, is mounted back of the first row of seats, for use from the second row, and is so placed that it does not interfere with any spectator.

AUXILIARY CHAIR STORAGE—Where gymnasiums also serve as auditoriums, the auxiliary chairs may be stored beneath these stands thus the chairs are instantly available for use and also partly distributed about the floor. Approximately 300 folding chairs can be stored beneath one eight-row section. Variations in stand height effect storage capacity.



ROLL-A-WAY STANDS—We also make a roll type stand, similar in design to the Fold-A-Way except mounted on rollers which operate on tracks mounted on the cabinets.

ESTIMATES—Send us dimensions of spaces available for stands or a floor plan with size of playing floor indicated; we will develop our uniform section length to best meet your space requirements. Plain walls, free from exits, low windows or pilasters, are best for stand attachment. Radiators behind the stands should be avoided where possible. Folding grandstands take the same classification as lockers in regard to finish, therefore color matching with walls is not essential. Our standard finish is light oak stain with one coat of shellac and two coats of spar varnish, well sanded and rubbed; all metal parts painted school furniture brown.

SPECIFICATIONS—For use in obtaining competitive bids, glady furnished on request.

TYPICAL INSTALLATIONS—Albuquerque, N. M., Senior High School. Bellingham, Wash., Bellingham High School. Canisteo, N. Y., Central School. Chicago, Ill., St. Sabina Community Center. Cincinnati, Ohio, Withrow High School. Darlington, Wis., Darlington High School. Haverstraw, N. Y., High School. Kane, Pa., Kane High School. Los Angeles, Calif., Leuzinger High School (Lawndale). Mahopac, N. Y., High School. Minonk, Ill., Community High School. Norristown, Pa., Senior High School. Pendleton, Ore., Pendleton High School. Ravenna, Ohio, Charlestown Township School. Springfield, N. J., Regional High School. Swampscott, Mass., High School. Warren, Pa., Beaty School.

WAYNE IRON WORKS

Manufacturers of Folding and Rolling Gymstands, Steel Portable Grandstands, Permanent Stadia, Fencing of All Types

100 Arch Street, WAYNE, PA.

WAYNE ROLLING GYMSTANDS

Products

Wayne Folding and Rolling Gymstands.

Also, Wayne Steel Portable Grandstands for compact seating outdoors or indoors; Wayne Permanent Grandstands and Wayne Complete Stadia.

Also, Chain Link Fence, Tennis Court Enclosures, Backstops.

WAYNE STANDS for SAFETY

Safety and Other Features

Absolute safety is the first requirement of all Wayne Stands, combined with durability, highest quality materials and workmanship. The Wayne Rolling Gymstand gives maximum comfort and visibility, attractive appearance, open or closed, low cost, saving in floor space. One man can open or close a thousand seats in five minutes without damage to floor.



Suggestions for Architects

For maximum economy the total length of each section of the bleachers should be a multiple of 16 ft. If the seats are to extend the entire length of the room, keep vent shaft openings in the end walls at least 2 ft. 11 in. from the wall against which the bleachers are placed, to eliminate interference with air circulation. If possible, put openings in side of shaft facing room, and make vent shaft form an end closure for the bleachers.

All finish can be omitted from walls covered by Wayne Rolling Gymstands. The risers are completely closed whether the stand is open or closed, thus the wall to the level of the top seat is never exposed. Grilles for wall vents or radiators behind the Gymstand may be omitted. No provision for wall attachment is necessary, as all weight is carried by the floor to which the back row supports are attached. Recessed radiation is not necessary. Wall radiators, extending not more than 6 in. from the wall at any point, will cause no interference with the Gymstand. If possible, wall radiators should be at least 6 in. above the floor and the tops of the radiators should be at least 3 in. below the height of the top seat. Each 16-ft. unit has an opening of approximately 384 sq. in. under the front riser board, and 672 sq. in. between the top seat board and the wall. If this is not sufficient for air movement grilles will be installed when specified. Doorways into the gymnasium should be located near the corners of the room, leaving the central parts of the side and end walls clear for seating.

For further suggestions, estimated seating capacities, solving of special problems, and preliminary estimates, consult Wayne engineers.

Engineering and Installation

Years of experience has given the WAYNE IRON WORKS a reputation second to none. An Engineering Department is at the call of architects who are interested in problems of mass seating. Many types of grandstands have been designed to meet all problems, meeting the construction requirements of different states and localities.

DIMENSIONS AND SEATING CAPACITY

	3 Rows ft. in.	4 Rows ft. in.	5 Rows ft. in.	6 Rows ft. in.	7 Rows ft. in.	8 Rows ft. in.	9 Rows ft. in.	10 Rows ft. in.	11 Rows ft. in.	12 Rows ft. in.
Depth* Open	4–6	6–4	8–2	10–0	11–10	13–8	15–6	17–4	19–2	21–0
Depth* Closed	2–8	2–8	2–8	2–8	2–8	2–8	2–8	2–8	2–8	2–8
Height Open and Closed	2–11	3–8¼	4–5¼	5–2½	5–11½	6–8¾	7–5¾	8–3	9–0	9–9¼
Number Seats in 16-ft. Unit	36	48	60	72	84	96	108	120	132	144

Note: Dimensions are of actual stand. For comfort, top seat should be at least 2 in., preferably 3 in. from wall, which will in effect increase depth dimensions by those amounts.

The standard length of a Gymstand unit is 16 ft. Special lengths are also made when required.

Specifications

Scope of Work—Furnish, deliver and install complete, telescopic or rolling bleachers as shown on plans. Bleachers shall consist of ..... sections ..... rows high.

Design—The bleachers shall be designed and constructed to safely support when in use, in addition to their own weight, a live load of 120 lbs. per linear foot of seatboard, plus 120 lbs. per linear foot of footboard, and a horizontal swaying force applied to the seats, of 24 lbs. per linear foot of seats, with a factor of safety of four.

Unit Construction—The folding bleachers specified shall be constructed of independent units, each not exceeding 16 ft. in length. Each unit shall be complete in itself; consisting of steel structure, footboards, seatboards, and risers connected together to form one integral assembly, with means for attaching said assembly to the building. Each row shall have a depth of not less than 22 in. and a rise above the next of not less than 9 in. to insure good visibility. The height of the bleacher in the closed position shall not exceed the height of the top seat when the bleacher is opened ready for use.

Principle—Seats shall telescope to the wall, requiring only one continuous operation for opening or closing and shall be so constructed that one or more rows may be opened ready for use while the rest of rows remain closed.

Risers—All vertical risers shall be completely closed, each riser consisting of two Douglas Fir boards, select structural grade, ⅝ x 8 in. before surfacing. Riser boards shall be rigidly attached to the structure, moving with it.

Locks—Each unit shall be provided with cylinder lock, to automatically lock it in the closed position. All locks shall be keyed alike. Each unit shall be provided with automatic devices to prevent accidental or unauthorized closing when in the open position, without the use of floor fittings.

Foot and Seatboards—Foot and seatboards shall be Douglas Fir, select structural grade. ⅝ x 10 in. before surfacing, surfaced four sides with corners eased. Seatboards shall slope back 1/16 in. in 12 in.

Painting—All steel parts of the understructure shall be given one coat of approved school furniture brown enamel. Seats, footboards and closure panels shall be given one coat each of oil stain and shellac, color of stain to be as selected.

RECREATION EQUIPMENT COMPANY

Manufacturers of Swimming Pool and Playground Equipment

ANDERSON, INDIANA

For Beach and Pool

Pool Ladders, Diving Board Outfits, Diving Towers, Water Slides, Life Lines, Life Guard Chairs, Racing Lines, Pool Cleaning Devices, Diving Mask Outfits, Cocoa Matting, Umbrellas, Life Buoys.

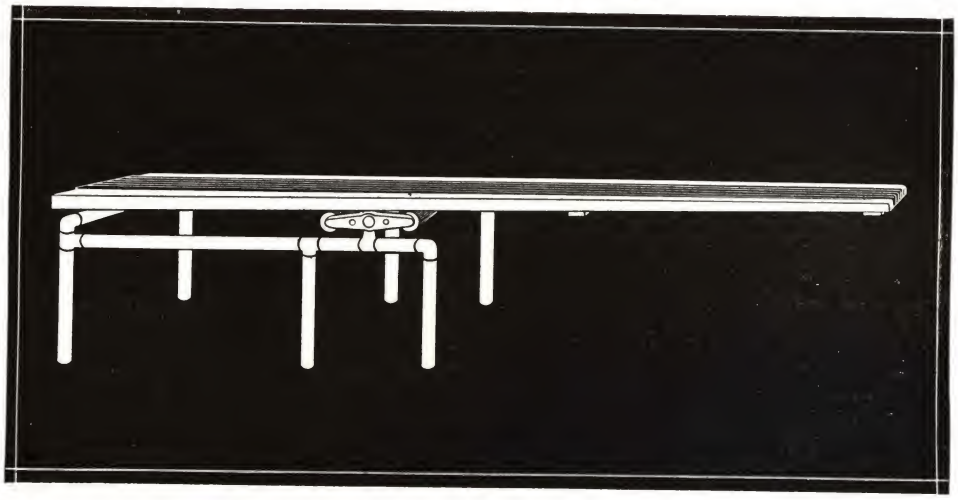
THE RECREATION LINE

For the Playground

Climbing Gyms, Swing Sets, Slides, Gym Combinations, Giant Strides, Ses-Saw Boards, All-Metal Tennis Nets, Basket Ball Outfits, Horizontal Ladders, etc.

"Recreation" The Diving Board of Champions

(See opposite side for records)



National Championships Won During 1938

1. National A.A.U. Indoor.
2. National A.A.U. Outdoor.
3. National Y.M.C.A. Indoor.
4. National A.A.U. Junior Outdoor.

OFFICIAL AND REGULATION ONE-METER DIVING OUTFIT WITH DUAL FULCRUM

The Most Important Improvement in Recent Years

The Dual Fulcrum should double the life of the boards, at the same time giving the satisfaction of perfect action. Investigate the principles underlying the design and construction of the "Recreation" Dual Fulcrum.



Diving Mask

Materials

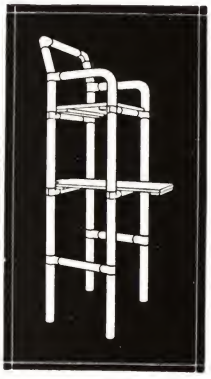
Standard materials are hot galvanized steel and malleable iron. Bolts are cadmium plated. No threaded pipe or fittings used, except on special order. We thus avoid rust and breakage at the threads. Polished brass and chromium plated brass furnished when desired. We also supply chromium plate over hot galvanized steel and malleable iron.

Many Options in Design

Choice as to type of Diving Board Frames is offered, to meet different conditions. Frames made of 1½ or 2-in. inside diameter pipe.

Either one-piece or laminated boards, all of official dimensions, furnished at difference in price.

Adjustable fulcrums, either single or dual.



Life Guard Chair



Pool Edge Slide
Many designs and sizes offered

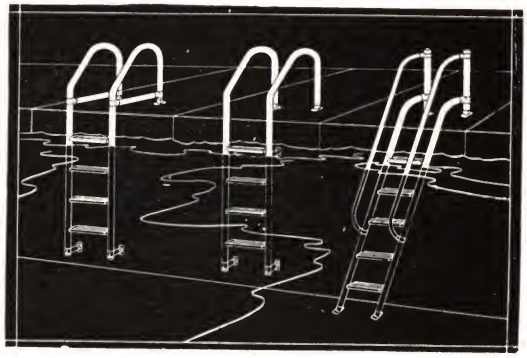
Official Score Card

For judging diving.

Free for the asking, in whatever number desired.

Write for a supply of these heavy, tagboard score cards. They are a great convenience.

Write for catalog.



Pool Ladders
All styles and materials

ESTABLISHED 1888

VAN ARSDALE-HARRIS LUMBER CO., INC.

SOLE MANUFACTURERS OF

"Brandsten" International and Intercollegiate Official Springboard Equipment

Fifth and Brannan Streets, SAN FRANCISCO, CALIF.

NEW "BRANDSTEN" AUTOMATIC ADJUSTABLE FULCRUM SPRINGBOARD (PATENTED)

The Only Springboard Used at Olympic Games—Antwerp, 1920, Paris, 1924, Amsterdam, 1928, Los Angeles, 1932, and at Berlin, 1936. The United States Diving Teams Both Men and Women Placed First, Second and Third at Each of These Olympiades

"Brandsten" International and Intercollegiate Official Springboards and Automatic Adjustable Fulcrum and Platforms for one and three-meter diving, also ladders, official lane markers and life lines.

General Information

This springboard and Automatic Adjustable Fulcrum is official according to the rules of the Amateur Athletic Union of the United States and its affiliates, also the National Collegiate Athletic Association, the Federation Internationale de Natation and the Amateur Diving Association of Great Britain.

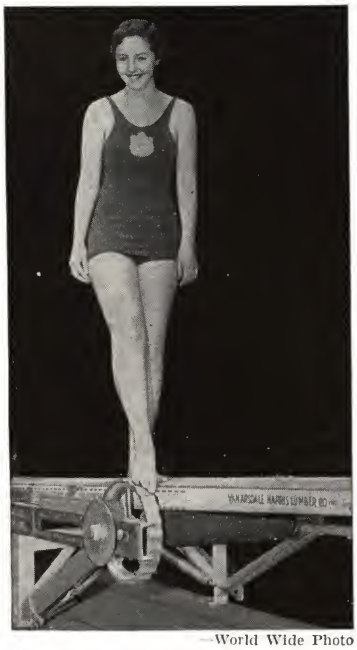
The "Brandsten" International and Intercollegiate Regulation Springboard was originated and designed by Ernst Brandsten—director of aquatic sports, Leland Stanford Jr. University, and coach of the American diving and swimming teams at the Olympic Games at Antwerp, 1920, Paris, 1924, Amsterdam, 1928, Los Angeles, 1932, and Berlin, 1936—in collaboration with Van Arsdale-Harris Lumber Co., Inc.

Stocked in One and Three-Meter Height

The new official automatic fulcrum first used at the Olympic Games Diving Events at Los Angeles, California, 1932, has received the enthusiastic approval of the Federation Internationale de Natation, the National Collegiate Athletic Association and the Amateur Athletic Union. Was officially used at Olympic Games, Los Angeles, 1932, and was officially used, Olympics, Berlin, 1936.

As former disadvantages of a haphazardly fixed fulcrum were studied the need for an easily adjusted, automatic fulcrum became apparent. The spot of greatest resiliency in a wooden springboard varies. The location of this spot also varies according to weight of the particular performer. To synchronize these two elements so that proper timing and height may be attained in the take-off and permit of necessary aerial acrobatics before entering water, was the problem involved.

The answer to the problem is found in the new Brandsten Automatic Adjustable Fulcrum.



—World Wide Photo

From a standing position on springboard the individual performer, by a flip of the foot on wheel advances or recedes fulcrum to the proper position for his or her weight or particular dive. Twenty-six different adjustments can be instantly made. Fulcrum can be stopped and locked, if desired, at any one of twenty-six adjustments

All working parts are of brass; no lubrication required. No parts that can get out of order.

Write for detailed drawings.

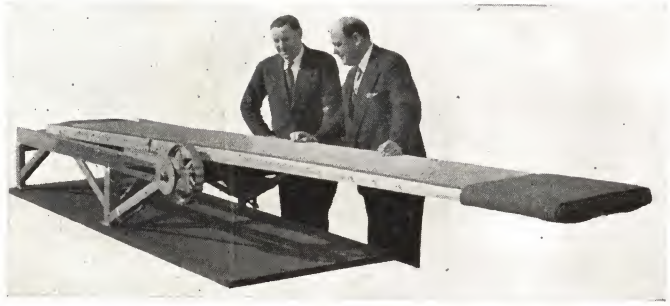
From a standing position on the springboard the individual performer can instantly adjust the new fulcrum by a flip of the foot. In this way board can be made as rigid or limber as height of take-off requires for the performer's particular weight and style. In this way performers of different weights suffer no disadvantage. The show feature of diving events is likewise speeded up.

Description

This springboard is a one-piece board, 3 in. thick, 20 in. wide, in 14 and 16-ft. lengths, both of which are official, from *strictly clear specially selected vertical grain Douglas fir* (pseudotsuga taxifolia). This board is not built up or laminated, but is one solid piece. It is tapered to conform to regulations, cleated, bored, oil treated and tested and will not warp, swell or shrink. ("Brandsten" International and Intercollegiate regulation Springboards installed over fifteen years ago are still in use.)

Service to Architects

Complete working details of plans and specifications of springboard and fulcrum equipment for both the 1-meter height from water line, and diving platform with adjustable fulcrum for the 10-ft. height from water line, will be supplied to architects and engineers upon request without charge.



Ernst Brandsten, Olympic Games Coach (Left) and H. W. Handley, Designers of the New Automatic, Adjustable Fulcrum for One and Three-Meter Diving

Above illustrates one-meter automatic adjustable official fulcrum. *Photograph and drawings of three-meter equipment sent on request*

References

Any champion diver, expert or coach in America or abroad.

The Federation Internationale de Natation.

The Amateur Athletic Union.

The National Collegiate Athletic Association.

Olympic Games Swimming and Diving Committee.

A Few Prominent Installations

More than 5,000 of our springboards are in use all over the world. A few prominent installations follow:

Universities	Athletic Clubs	Hotels	International Swimming Stadiums
Yale	Olympic Club, San Francisco	St. George Hotel, Brooklyn	Olympic Games Stadium, Berlin, Germany
Princeton	New York Athletic Club	El Mirador, Palm Springs	Olympic Games Stadium, Los Angeles
Harvard	Westchester Country Club, Rye, N. Y.	Hollywood Beach Casino	Panamanian Olympics, Canal Zone
Pennsylvania	Los Angeles Athletic Club	Santa Barbara Biltmore	Melbourne Stadium, Australia
Columbia	Palm Beach	Hotel Del Monte, Monterey	Wembley Stadium, London, England
U. S. Military Academy	Bath and Tennis Club	Ambassador Hotel, Los Angeles	Cumnock Stadium, Ayrshire, Scotland
U. S. Naval Academy	Detroit Athletic Club	White Sulphur Springs	Messina Stadium, Messina, South Africa
Dartmouth	Toledo Club	Lake Tahoe Tavern	East London Stadium, South Africa
Syracuse	Hollywood Athletic Club	Yosemite Valley	Baribada Stadium, Baribada, India
New York	Manursing Island Club, Rye, N. Y.	Battle Creek Sanitarium	La Paz Stadium, La Paz, Bolivia
Minnesota		Fairmont Hotel, San Francisco	Oslo Kommune Stadium, Oslo, Norway

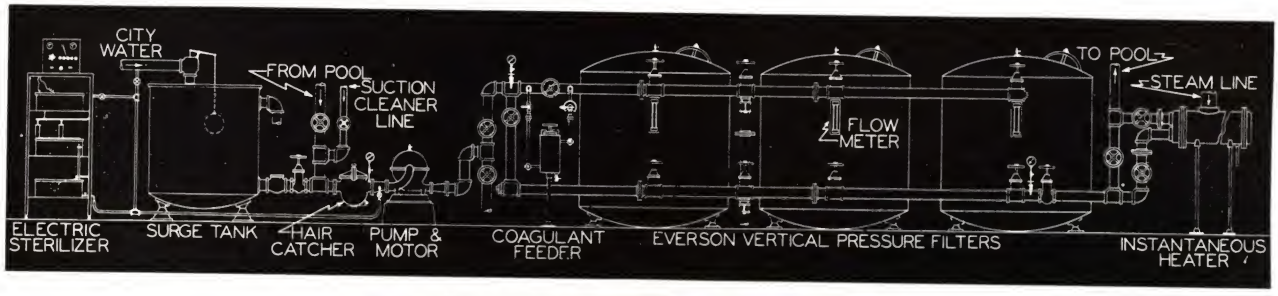
We still stock Manually Adjusted Fulcrums.

EVERSON MANUFACTURING COMPANY

"The Swimming Pool People"

224 West Huron Street, CHICAGO, ILL., U. S. A.

NEW YORK, N. Y. BOSTON, MASS. AMARILLO, TEX. ST. LOUIS, MO. DETROIT, MICH. WICHITA, KAN. PITTSBURGH, PA. ST. PAUL, MINN. SAN ANTONIO, TEX. DALLAS, TEX. HOUSTON, TEX. MOLINE, ILL. NASHVILLE, TENN. OKLAHOMA CITY, OKLA. MISSOULA, MONT. DAYTON, OHIO MIAMI, FLA. WORTHINGTON, IND.



Everson Filtering and Sterilizing System for an Indoor Pool

Products

"Everything for the Swimming Pool": Complete re-circulating systems and component parts—FILTERS, PUMPS, COAGULATORS, HAIR and LINT CATCHERS, HEATERS, SPECIAL POOL FITTINGS. A complete line of Sterilizing Equipment for Measuring, Mixing and Feeding Chlorine, Chloramine, and other gases or dry chemicals in solution: Everson Safety Electric (Sodium Hypochlorite) SterElator, Under Water Lights and Observation Windows; Suction Pool Cleaners; Swimming Pool Ladders, Diving Stands and Appointments.

Experience

Everson products embody over a quarter century of specialization in the design and manufacture of swimming pool equipment. Most of the features that today mark the modern swimming pool were pioneered and perfected by EVERSON, including: The re-circulating system of water purification, Electrolytic sterilization of water, Underwater Lighting, etc., etc. Everson equipment more than fulfills all requirements of all Federal, State and Municipal Health Codes.

Service

The EVERSON MANUFACTURING COMPANY will furnish architects and engineers, detail drawings, estimates, bulletins and technical aid upon request.

Essential Factors in Pool Design and Layout

This designing of a modern swimming pool involves more than questions of construction and materials, location and layout. It is equally a matter of sanitary engineering, for regardless what the demands made upon it, the modern pool must be maintained spotlessly clean and bacteriologically and chemically pure. Fundamentally a recreational and health building project, it must be attractive, enjoyable, healthful and safe.

To this end, the Everson organization has worked tirelessly, with architects, health boards and pool builders. As a result of this endless research, not only are most swimming pool problems solved but standards have been established as requisites of a modern pool, including:

Shapes—Rectangular shapes are best for indoor pools. For outdoor pools: rectangular, circular, U or T shapes or other variations dependent on local conditions. In public pools the tendency is to build more than one pool at each location—one for wading, one for depths not exceeding 4 to 5 ft., and another entirely of deep water for swimming and diving.

Dimensions—Use multiples of 5 ft. for width and 15 ft. for length. For Olympic requirements use multiples of 5 ft. for width and 25 meters for length.

Depths—3 ft. 6 in. minimum at shallow end, 10 to 12-ft. depth at 15 ft. from deep end of pool to accommodate 3 meter or 10-ft. high dive.

Bathing Loads—Figure 12 persons within 10-ft. radius of each board, 27 sq. ft. for bathers. Water over 5 ft. to be considered swimming area. Allow 12 ft. of free and unobstructed headroom above diving boards. Space around pool for spectators should be absolutely separated from space used by bathers or swimmers.

Wading Pools—Wading area shall be separate from swimming pool. Source water to come from filtration system but not recirculated. Wading pool to be entirely emptied and cleaned daily.

Piping System—Provide for the following: Filling of pool, circulation of pool water, washing of individual filters, filter to waste, operation of suction cleaner and discharge to sewer, emptying of pool, overflow drainage, regulation of flow through pool inlets. See Everson Adjustable Flow Inlet fitting.

Water Supply—A direct connection to portable water supply is prohibited; install Everson's open surge tank or vacuum break. Install overflow drains around entire pool on 10-ft. centers. Inlets on 20-ft. centers around perimeter of pool; main drain fittings at lowest point in pool not over 10 ft. from sidewalls and on 20-ft. centers. A trench grating is advisable for all open air pools.

Filtration—For clarification, equipment shall be of sufficient capacity to provide turnover of pool capacity once in every 4 to 6 hours, based on filtration rate of 3 g.p.m. per sq. ft. for pressure filters, and 2 g.p.m. for gravity filters. Make-up of battery of 4 or more filters recommended. Backwash, rate of filter should be equal to 12 to 15 g.p.m. per sq. ft. of filter area of filter. Because re-circulating pump must deliver this supply, battery of 4 filter units is recommended.

Sterilization—Chlorine in one form or another is recommended for effective results and simplicity in taking tests. In indoor pools the Everson Electric Safety SterElators eliminate necessity for separate vaults, fans and vents.

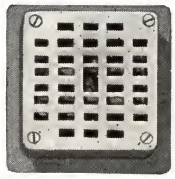
Recirculating Pump—Locate below pool water level to insure priming. Any pump located above pool water level should be self-priming.

Underwater Lights—Locate in both sidewalls on 10-ft. centers, starting not over 7½ ft. from either end.

Suction Cleaner—Should be provided, operated by circulating pump or special portable self-priming pump, the latter for large outdoor pools.

Diving Boards—Provide regulation one-meter and three-meter stands and boards.

Ladders—Locate in sidewalls of pool near ends; on indoor pools provide 4 ladders; on outdoor pools, locate ladders on 50 to 75-ft. centers for depths. Ladders of recess or built-in type are preferable.



Outstanding in the line of EVERSON Re-circulating Pool Fittings is the new patented Adjustable Inlet Fittings. Adjustable Orifice assures perfect distribution with simplified straight line piping. Recommended for all new construction, corrective and remodeling work.

SELECTION TABLE FOR CIRCULATING EQUIPMENT

Pool capacity, gals.	Filters	Sterilizer	Hair catcher	Pump capacity, g.p.m.	Space requirements, height
50,000*	3-48″ diam. V	E-6	4″	110	20′x15′x 8′
75,000*	3-60″ " V	E-6	4″	160	25′x15′x 8′
100,000	3-66″ " V	R-51	4″	210	25′x15′x 8′
150,000	3-84″ " V	R-52	6″	325	30′x15′x 8′
200,000	3-90″ " V	R-52	6″	420	30′x15′x 8′
300,000	4-96″ " V	R-53	8″	625	35′x17′x10′
400,000	3-8′x12′ H	R-54	8″	850	35′x20′x10′
500,000	4-8′x12′ H	R-55	8″	1050	40′x20′x10′

*Indoor.

Everson Pool Fittings

"A Pool is no better than its Fittings."

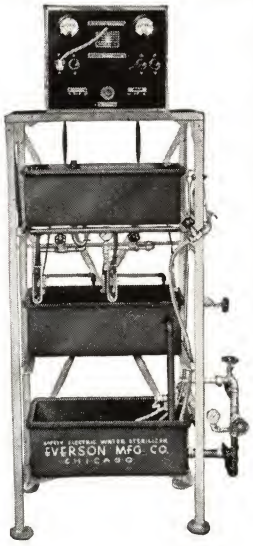
The life of the pool depends on its fittings. For only with properly designed fittings can the water be recirculated efficiently. To insure long life, low maintenance costs and proper operation, architects, engineers and pool operators insist on EVERSON Pool Fittings throughout.

Adjustable Flow Inlet Fittings
Main Drains
Angle Floor Drains
Gutter Drains
Floor and Gutter Drains
Sidewall Drains

Write for Specifications

Everson Safety Electric SterElator

The EVERSON Safety Electric SterElator is the highest development in swimming pool sterilizing equipment. By means of an electrolytic cell it manufactures "chlorine" in its perfect form—sodium hypochlorite (NaOCl), from ordinary rock salt and water. It eliminates the need for special vented vaults, gas masks and other expensive precautionary equipment, the hazards and cost of transporting, storing and using high pressure drums of deadly chlorine. Introduced as a surgical germicide during the world war, sodium hypochlorite is exceedingly effective, non-irritating to skin and membranes, is exceedingly stable and pervades every corner of the pool. Output is set at any point by turning a rheostat dial; operating cost for average indoor or small outdoor pool, is only a few cents per day.

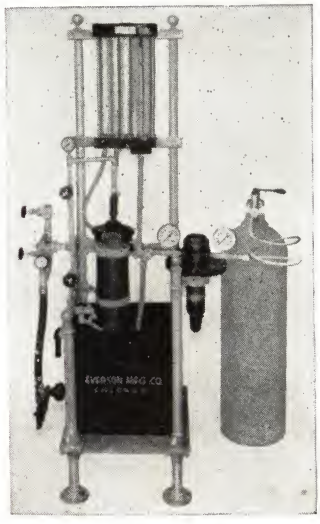


Everson Rota Meter SterElator

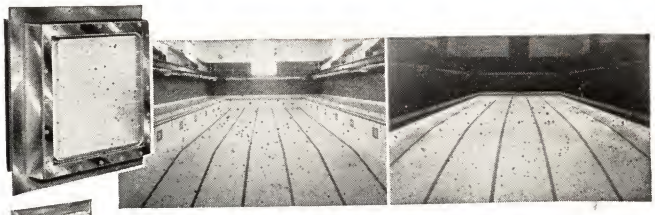
Measures, mixes and feeds chlorine gas in solution under vacuum. Absolutely accurate, dependable and fully visible Rota Meter. Flow indicated by position of spinning rotor that rises and lowers in calibrated glass tube. 1-valve control (no chance of error). Tremendous capacity range. Automatic syphon break to prevent back flooding, automatic venting and thorough mixing of gas and water. Gas lines and gas valves of rubber, glass or non-corrosive silver or tantalum. Smart new cabinets. Automatic gas and automatic water shut-off when specified.

Everson provides sterilizing apparatus exactly suited to every pool, a complete line of equipment including many types of solution feed SterElators, dry chemical feeders where minimum initial cost is essential and metering pumps. All





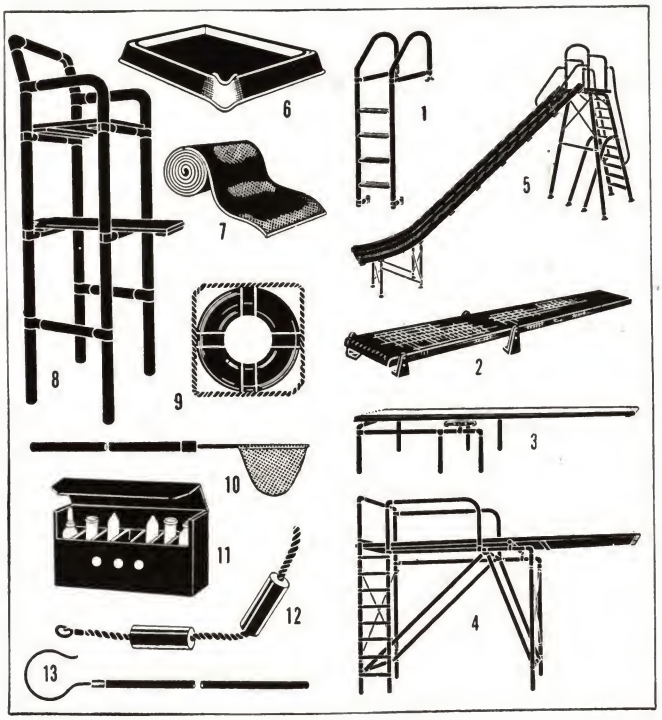
is distinctly swimming pool equipment developed for (not adapted to) swimming pool use. EVERSON sterilizing equipment more than fulfills all Municipal, State and Federal Health Codes. Write for special bulletins.





Underwater Lights

With EVERSON Underwater Lights every part of the pool and persons in the pool are fully visible at all depths. Underwater lighting makes pools safer, makes bathing far more enjoyable, simplifies swimming instruction and coaching, stages and intensifies enjoyment of exhibitions and contests, and adds greatly to the popularity and enjoyment of the pool. Pioneered by EVERSON, Underwater Lighting is part of every strictly modern pool. EVERSON Lights can be serviced either from tunnels or pool walk trenches. Comes wih flush (new construction) or overlapping frame. Have special correction lenses that compensate for all water reflection and diffuse light evenly throughout the pool. Write for detail drawings.

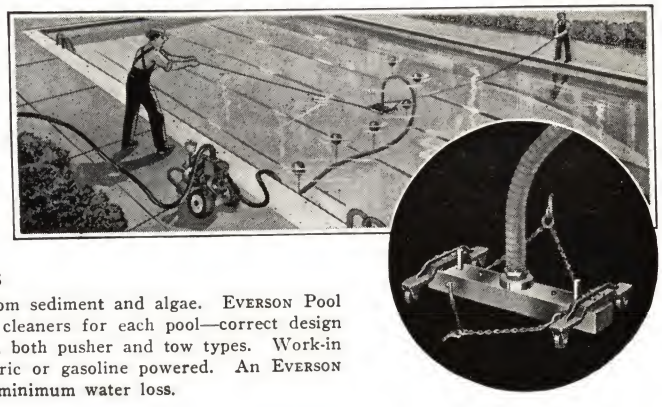


Everson Pool Accessories

Of tested strength and quality, and safe. They are correctly designed and certain to give long satisfactory service. If it is for a swimming pool, it is a safe rule to specify "EVERSON."

(1) Everson Pool Ladders. (2) Everson Low Diving Board. (3) National 1-Meter Regulation Diving Board. (4) Everson Improved Regulation 3-Meter Diving Board Stand. (5) Everson Natatorium Slides. (6) Rubber Footbaths. (7) Cocoa Matting. (8) Life Guard Chair. (9) Life Buoys. (10) Skimming Net. (11) Testing Outfits. (12) Life Line. (13) Rescue Pole.

Write for Accessory Bulletin.



Everson Suction Pool Cleaners

Every pool needs a suction pool cleaner to keep walls and floor free from sediment and algae. EVERSON Pool Cleaners with standardized parts permit assembly of "custom built" pool cleaners for each pool—correct design brush and features for individual construction, type of floor, etc. 6 sizes, both pusher and tow types. Work-in units that "plug into" re-circulating system or portable units either electric or gasoline powered. An EVERSON "Custom Built" Cleaner assures maximum efficiency—glistening walls with minimum water loss.

MARSH ELECTRO CHLORINATION COMPANY, INC.

TELEPHONE
AShland 4-5777

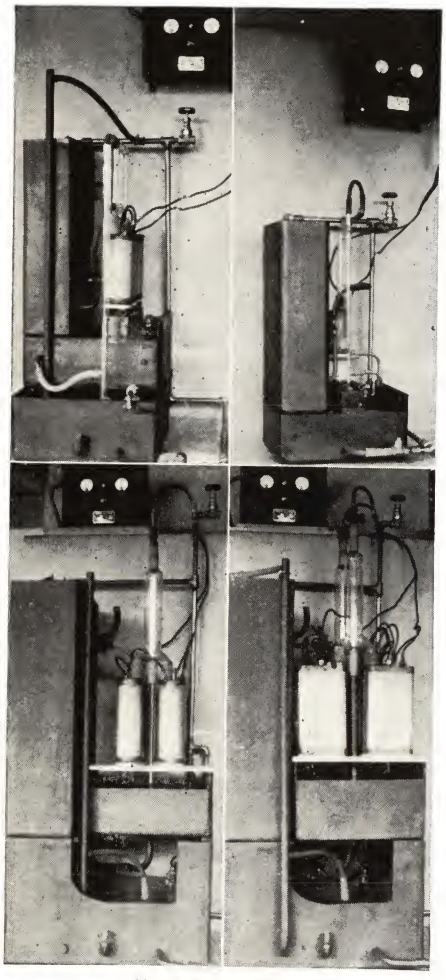
101 Park Avenue, NEW YORK, N. Y.

PERFECT SANITATION OF SWIMMING POOLS

Neutral Disinfection with Marsh System of Electro Chlorination

Marsh System provides the safest, most effective and most desirable form of chlorination. It produces a powerful yet neutral (non-irritant) oxidizing solution, sodium hypochlorite, a product similar to Dakin's solution, and delivers it to the water in accurately controlled doses.

WATER AND AIR SAFETY — MARSH ELECTRO CHLORINATOR — PURIFICATION NON-IRRITANT
MARSH SYSTEM
PERFECT SANITATION SWIMMING POOLS
MARSH ELECTRO CHLORINATION COMPANY, Inc.
NEW YORK CITY



Hard Rubber Types

Important Advantages

Provides complete and uniform sterilization in every part of pool.

Control is accurate, dependable and convenient because it is operated by electricity.

Operates on alternating or direct current.

No commodity to buy but salt.

Simple and easy to install.

Eliminates extra cost for protection in handling and storing hazardous chemicals.

Filtration is improved.

Eliminates outlay for expensive prepared solutions.

Inexpensive to operate.

No irritating and unpleasant conditions in the water.

Has long life because all parts are non-corrodible.

Apparatus is kept new and accurate by inexpensive renewals of Marsh cells.

Foot baths automatically sterilized with the antiseptic solution for prevention of "athlete's foot," etc.

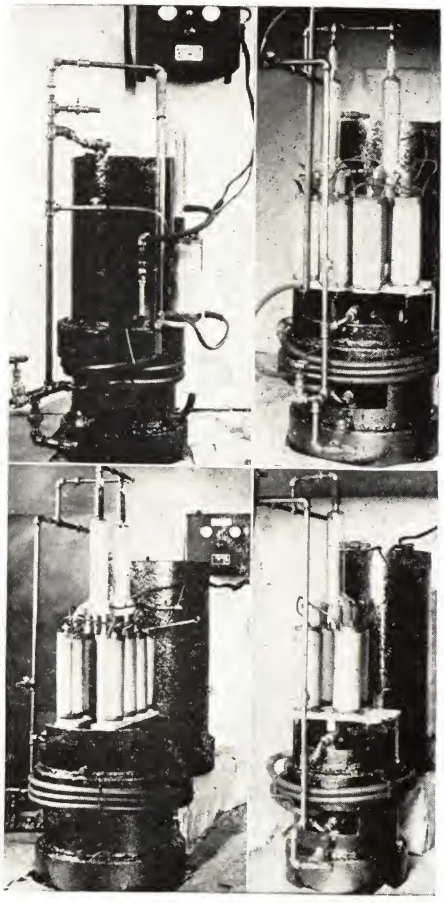
Complete Marsh Equipment

Includes battery of Marsh Cells with pyrex manifold, chlorine outlet, electrolytic soda solution feed and absorber coils, battery charger, electrical control board, upper tank containing salt and water for brine feed to cells, middle tank containing soda solution from cells for feed to absorber coils, and lower tank receiving electrolytic sodium hypochlorite solution from the absorber coils for delivery to pool or storage for sanitary uses.

Complete Marsh Recirculation, Filtration, Chlorination System furnished for outdoor and indoor pools.

Wide Scope of Installations

The Marsh Electro Chlorinator has been installed over a period of years in every type, size and kind of swimming pool for universities, hotels, hospitals and clubs, and in private pools. Each year finds a larger number installed than the year before. More and more architects and engineers recognize that here is a quality equipment offering the most desirable features of a sterilizing apparatus that successfully surmounts previous disadvantages.



Transite Types

Co-operative Service

We will be glad to co-operate with architects and engineers in furnishing them with suggestions as to the proper application of the Marsh System to any water purification requirement, as well as to submit quotations, specifications, and other information desired.

Short Specification for Swimming Pools

Note: Architects and engineers can be assured that by specifying a Marsh Electro Chlorinator they are stressing quality and effectiveness of results, the use of modern convenience of electrical control with its ease and simplicity of operation, its dependable accuracy, and above all, pleasantness and non-irritation. They can be assured also that the owner obtains the best at reasonable initial cost, and operating, maintenance and depreciation cost which will keep his overhead at a minimum year in and year out.

Specification—Contractors to furnish and install in accordance with manufacturer's directions, one Marsh Electro Chlorinator, manufactured by the MARSH ELECTRO CHLORINATION COMPANY, INC., 101 Park Avenue, New York, N. Y., of sufficient capacity to provide sterilization by available chlorine dosage in the form of non-irritant (neutral) electrolytic sodium hypochlorite solution.

Other Uses for Marsh System

Marsh equipment provides convenient and effective means of supplying solutions for many other purposes as follows:

Hospitals: Highest quality of antiseptic and disinfectant solutions.
Laundries: Neutral electrolytic bleaching solution protects fabrics with reduction of cost in most cases.
Water supplies: Most effective and pleasant form of sterilization.
Sewage problems: Stabilized chlorine solutions produce better results.
Deodorization: For comfort stations in bathing houses, etc.
Country estates, stock farms, dairies: An incomparable disinfectant at the lowest cost.
Algae: Removal of algae and other growths in water is accelerated by chlorination.

Note: The finest and purest soda and bleaching solutions can be made for use in textile, paper and industrial plants.

WALLACE & TIERNAN CO. INC.

Manufacturers of Chlorine and Ammonia Control Apparatus for Swimming Pool Sterilization—"Swim in Drinking Water"

NEWARK, N. J.

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CANADA: Wallace & Tiernan Ltd., TORONTO, ONT., MONTREAL, QUE., WINNIPEG, MAN.
ENGLAND: Wallace & Tiernan Ltd., LONDON

REPRESENTATIVES IN MOST FOREIGN COUNTRIES

Products

CHLORINE CONTROL APPARATUS (trade name "Chlorinators") for all types and sizes of indoor and outdoor swimming pools—capacities to meet all conditions.

AMMONIA CONTROL APPARATUS ("Ammoniators") for application of anhydrous ammonia—in the practice of the chloramine process of swimming pool sterilization.

Direct Feed types with all capacity ranges.

DRY CHEMICAL FEEDERS for application of chemicals in the dry state, either coarse, granular or finely powdered.

"Swim in Drinking Water"

A Nationwide Service

Continued satisfactory operation of W & T equipment is the direct responsibility of a nationwide service organization. A field staff operating from 29 district offices is available to assist architects and engineers in selecting the proper equipment for each job. Their recommendations involve no obligation. Call on them.

Current Literature

Current literature on the sterilization of swimming pools, swimming pool design and practice, diagrammatic layouts of suggested recirculating equipment is available free to architects and engineers on request.

W & T PROCESSES

Chlorination

Swimming pool sterilization with chlorination properly applied not only completely sterilizes the water at the point of application but also leaves a certain amount of chlorine in the treated water.

This is spoken of as a residual chlorine and acts to disinfect immediately any subsequent pollution which may be introduced by bathers or otherwise. It is this residual action that makes chlorination the complete and safe method of sterilizing swimming pool water. At every point in the pool—from top to bottom and from inlet to outlet—this penetrating residual action searches out pollution and disinfects it before it can be transmitted from one bather to another.

Over 3500 pools throughout the world are now employing chlorination's certain protection.

Ammoniation

A further advantage in swimming pool water purification results from the use of ammonia in addition to chlorine, to form chloramine. Chloramine (chlorine plus ammonia) offers several refinements and benefits over the use of chlorine alone. Chloramine residuals are more stable and persist for longer periods. On large outdoor pools where the bathing load is heavy and rate of recirculation slow, this persistent chloramine residual increases the factor of safety and provides constant sterilization. Chloramine is not affected by aeration or the actinic rays of the sun, and its use has often resulted in a substantial saving in the operating cost.

Chloramine is odorless and tasteless enabling the operator to maintain high residuals. Algae control is more complete by virtue of the stable and persistent residual.

W & T APPARATUS

Chlorine may be applied either by solution feed or direct feed, that is, either first mixed with a minor flow of water and the resulting solution applied, or applied directly to the water being treated. Of the two, solution feed method is far the best as all dangers of incomplete mixing are nullified and mechanical parts for handling gas reduced to a minimum.

Ammonia on the other hand, being far more soluble in water than chlorine, is handled easily by direct feed method. Ammoniators of this type are similar to direct feed chlorinators, differing only in materials particularly adapted to handling ammonia gas.

Application of such minute quantities of gas as are employed in water treatment requires that apparatus must be carefully and precisely built. Non-corrodible materials must be used and every precaution exercised in design and construction to insure continuity of operation in the important work it has to do.



W & T Type MSP Chlorinator



Equiscale Chlorinator

Wallace & Tiernan Chlorinators and Ammoniators are built to the highest standards. More than twenty years' experience in the design and manufacture of gas control apparatus have enabled W & T to eradicate points of weakness and offer equipment so durable, accurate and easy to operate that every demand is satisfied. Over 20,000 units of W & T apparatus are now in use in all parts of the world.

W & T Type MSP Solution Feed Chlorinator—For pools up to 500,000-gal. capacity. Operates on a semi-vacuum principle giving accurate control of small amounts of chlorine with a feed range sufficiently wide to include all changes in bathing loads. Ease of operation and dependable, trouble-free service please both operator and owner.

Equiscale Chlorinator—An improved type of visible vacuum chlorinator for small installations requiring less than 12 lb. of chlorine per 24 hours.

Rotor Chlorinator—A visible vacuum chlorinator designed to meet the demand for extremely low capacity apparatus. This machine will accurately feed as little as .03 lb. of chlorine per 24 hours.

W & T Chloro Clock—Feeds predetermined quantities of sodium hypochlorite or similar solutions by means of a traveling displacement cylinder operated by clock work. Efficient sterilization for the very small pool. Easy to understand and operate.

W & T Direct Feed Ammoniator—Applies ammonia gas directly to water being treated. Simplified design and sturdy construction make it a fit companion in every way for world famous W & T Chlorinators.



Rotor Chlorinator



W & T Type MDPA Ammoniator

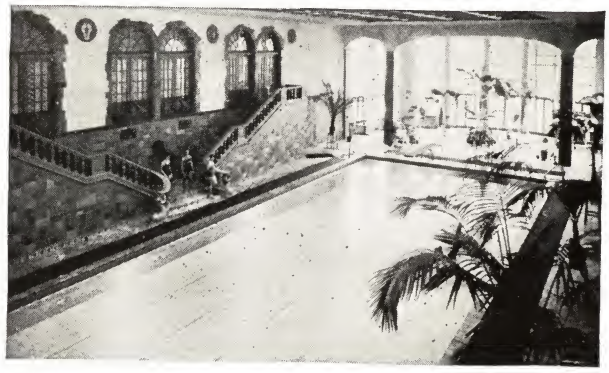
ROBERTS FILTER MANUFACTURING CO.

638 Columbia Avenue
DARBY, PA.

For our page on Filters, see File Index

SWIMMING POOL RECIRCULATION SYSTEMS

Swimming Pool Sanitation



Recirculation has completely solved the question of Swimming Pool Sanitation. It is mandatory under State Board of Health regulations in many States. With recirculation, the fouled water is drawn from the pool by a centrifugal pump and returned to the pool through filters and sterilizing equipment, and, in the case of indoor pools, through a heater.

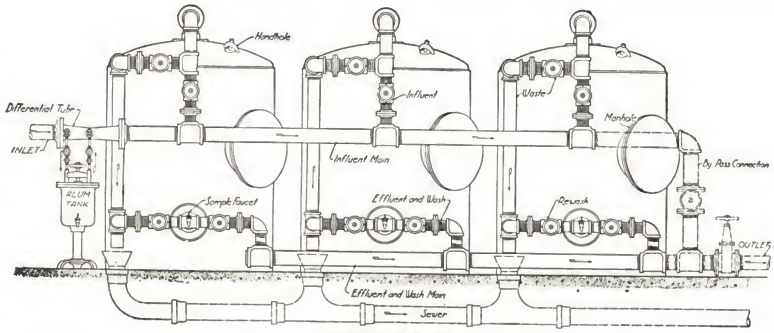
Architects and engineers planning the design of a swimming pool should apply to the Health Board in their respective States for such printed matter as is available, and State requirements or recommendations should form a part of their specifications. This is particularly desirable in connection with establishing the "period of recirculation" and "rate of filtration," as there is variation of opinion among authorities regarding these important design factors.

A typical recirculating plant for an indoor pool is shown in this catalog, but every pool should be given separate study so that the arrangement of pool fittings, recirculating equipment and piping will be such as to insure greatest efficiency and economy. Our Bulletin 110 will prove a great aid in designing the recirculating plant, and our Engineering Department welcomes the opportunity to assist architects and engineers in making the proper selection of equipment. Typical specifications will be supplied as a part of this service.

Design

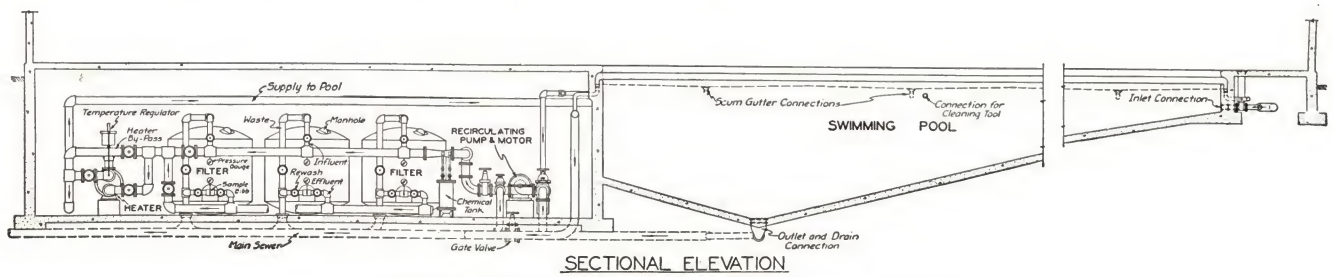
Where the bathing load is normal, the recirculating plant for pools of not more than 100,000 gallons capacity should be designed to recirculate the entire capacity of the pool in 8 hours. For non-congested pools containing greater capacity, a recirculating period of 12 hours can be employed. The rate of filtration should preferably be 3 gallons per square foot per minute, but in no case should it exceed 4 gallons per minute per square foot.

The arrangement of filters and piping should always be such as to allow use of the same pump for both recirculating and backwashing the filters with water from the pool. This will avoid illegal cross connections between city water service and the recirculating plant. We recommend a backwashing rate of 12 gallons per square foot per minute, which requires 4 filters in parallel, operating at a 3 gallon per square foot per minute rate; or, at the higher filtering rate of 4 gallons per square foot per minute, a battery of 3 filters, similarly arranged.



FRONT ELEVATION
BATTERY OF THREE STYLE-H-VERTICAL PRESSURE FILTERS

We have illustrated in this Catalog a suitable piping arrangement for a battery of 3 filters, and, of course, this same arrangement of piping is proper for 4 filters in parallel.



SECTIONAL ELEVATION

Typical Arrangement of Swimming Pool Recirculating System

While we endorse a closed recirculating system for usual indoor pools and small outdoor pools, with a hair and lint catcher in the pump suction line, we urge the inclusion of an open screen well in the recirculating facilities for larger pools. With a closed system, the water passing into the scum gutter is lost; whereas, with an open suction or screen well, this water can be recovered and returned with the recirculated pool water. Furthermore, an open screen well permits the feeding of coagulating chemicals by means of calibrated orifice boxes, assuring accuracy and economy.



Responsibility

It is accepted practice to purchase all items of recirculating equipment from one source under a single order. This avoids divided responsibility and places on the one manufacturer the task of co-ordinating all equipment and supplying finished installation drawings of the recirculating plant.

The equipment contract should cover the filters, pump and motor with starter, coagulant and alkalinity devices, flow indicators, heater, hair catcher or screens, sterilizer and testing outfits, vacuum cleaner, and pool fittings. To make the installation altogether complete, the same contract can include all piping for the recirculating plant within the equipment room.

Experience

Roberts Filters and Recirculating Plant Equipment are in service on more than eight hundred swimming pools. Installations can be found in every State of the Union and throughout Canada and Latin America.

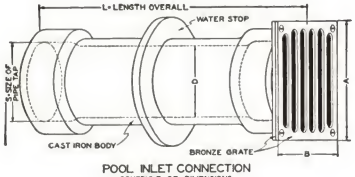
The pools range from small Therapeutic Baths to the largest Outdoor Swimming Centres.

The list includes schools and colleges; athletic clubs; branches of the Young Men's and Young Women's Christian Associations; commercial baths; hotels; apartments; private estates and residences; amusement centres; and, finally, community-owned pools, both indoor and out.

Water Rectification has been our specialty for more than thirty years.

Filters

Data on all types of Roberts Pressure Filters will be found in the Filter Section of this Catalog, also in our Bulletins 60, 80 and 100.



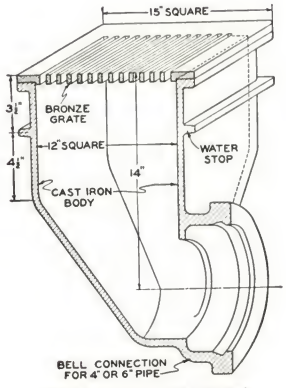
POOL INLET CONNECTION

SCHEDULE OF DIMENSIONS

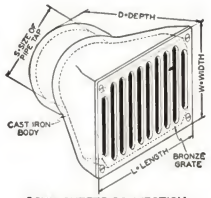
S	D	L	A	B
1½"	2"	13"	4"	4"
2"	2"	13"	4"	4"
2½"	3"	13"	5"	5"
3"	3"	13"	5"	5"

Accessories

We manufacture pool fittings and hair catchers as shown, as well as other accessories. Obtain our Bulletins 105 and 120.



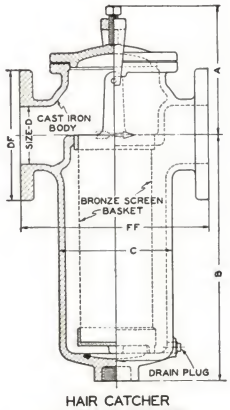
POOL OUTLET AND DRAIN CONNECTION



SCUM GUTTER CONNECTION

SCHEDULE OF DIMENSIONS

S	L	W	D
1½"	6"	3"	3½"
2"	6"	3"	3½"
2½"	8"	4"	4"
3"	8"	4"	4"



HAIR CATCHER

SCHEDULE OF DIMENSIONS

SIZE-D	DF	FF	A	B	C
2½"	7"	10"	7½"	13"	5½"
4"	9"	13"	6½"	17"	8"
6"	11"	17"	9½"	23"	10"
8"	13½"	20"	9½"	23"	10"

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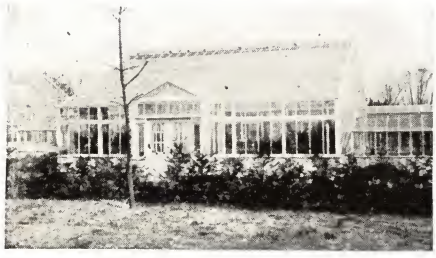
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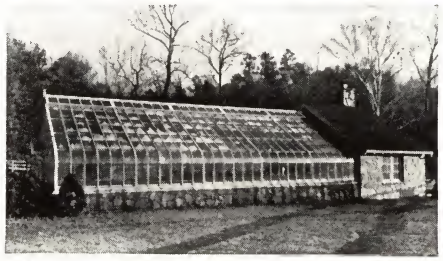
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Services

We will be glad to send catalogs and prepare preliminary plans and specifications, and otherwise co-operate with the Architect. Personal calls made when desired. No matter what your glass enclosure problem may be, American-Moninger can assist you in planning and building.







STANDARD WIDTHS, LENGTHS OF SECTIONS, ETC.

Curved Eave and Semi-Curvilinear Types: 11, 16, 18, 21, 25, 29, 36 ft. Straight Eave Type, Ornamental Gutters: 11, 16, 18, 21, 24, 29, 36 ft. Standard Sections (16-in. g.ass spacing) 8 ft. 4¾ in., (24-in. glass spacing) 8 ft. 3⅝ in.

OUTLINE SPECIFICATIONS FOR AMERICAN-MONINGER GLASS ENCLOSURES

Steelwork—American-Moninger Glass Enclosures are carefully designed, in accordance with approved practice for this exacting type of construction. Great care is exercised to assure a design of framework that is safe and rigid, yet neat. Standard structural shapes are used throughout with the exception of American-Moninger $\frac{3}{16}$-in. steel plate wall sills and ornamental gutters. These members are specially bent to proper form and are *hot process galvanized after fabrication.* The sills are designed to cap 8-in. masonry walls. Proper sway bracing is provided whenever necessary to assure proper longitudinal rigidity. Where truss members are required, such members are neatly designed, and shop riveted connections are provided so far as is practical. Other connections are securely bolted, using substantial bolts.

Woodwork—All wood members are milled from only genuine air-dried Tidewater Gulf Red Cypress; they are guaranteed to be free from sap, wanes, checks or other imperfections. All items are accurately machined to appropriate pattern, and correct for the purpose intended. Curved members are cut from one-piece lumber. They are never steamed and bent. All sash and doors are made with blind mortise joints, and are carefully assembled true and square.

Ventilating Apparatus—Encased gear type of ventilating machines, self-locking and self-oiling, are furnished, with hand wheels conveniently located for access from walks or doors. Standard 1¼-in. wrought-steel pipe shafting securely connected with double pinned malleable couplings operates in hangers bolted to the supporting framework. Elbow type ventilator arms are furnished.

Glazing—Glazing bars are arranged to receive glass either 16 or 24-in. wide, as desired. For all standard work glass is clear, double thick, flat drawn, greenhouse quality. Special grades of glass are supplied when, and as, specified. Curved glass is carefully bent to proper radius. All glass is carefully bedded in special elastic glazing composition, and secured with American-Moninger ¾-in. 16-gauge *hot galvanized glazing brads,* the best greenhouse glazing brad in use today.

Painting—All woodwork is painted at the factory with one coat of selected primer, the entire structure, except the galvanized parts, is painted with two additional coats of the best quality of greenhouse paint after erection, the final coat being applied after glazing.

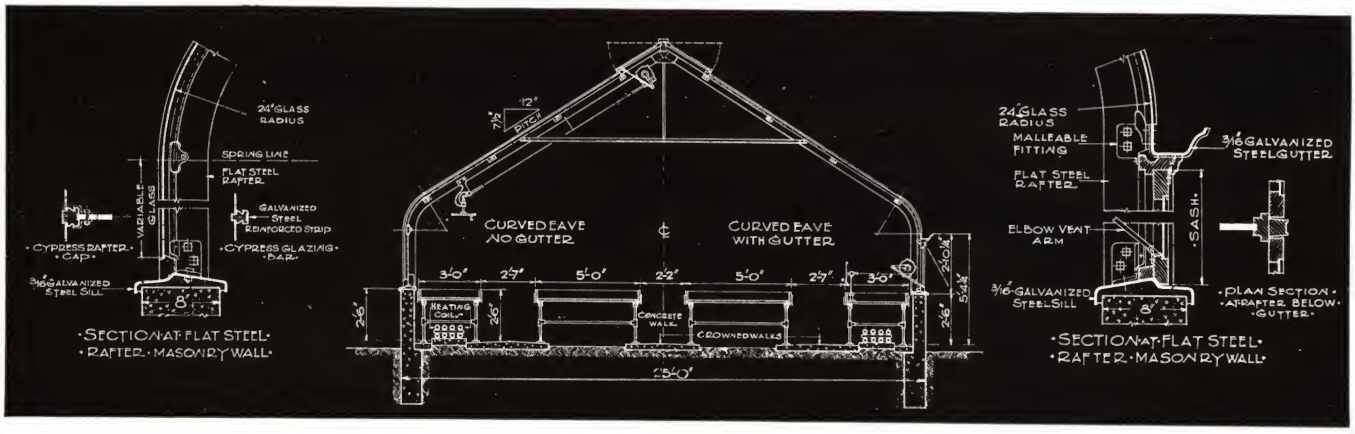
Hardware—All sash are hung with three hot galvanized butts, each with fast brass pins. The doors are furnished with brass butts with loose brass pins, bronze locks and knobs. Tumbler locks and knobs furnished for all outside doors. Bolts, screws and nails are all either hot galvanized or cadmium plated.

Benches—Several types of plant tables or benches are available. They can be furnished with either 1-in. *galvanized* pipe legs and framework throughout, with cypress bottoms and sides, or, if desired, American-Moninger *galvanized* steel frame type, with tile bottoms and slate sides. Other plain, economical types can be furnished when desired.

Heating—Hot water systems, using 2-in. wrought steel pipes, with individual greenhouse boilers, have proven best for the purpose. Steam systems can be furnished if preferred. Mains are usually placed in trenches, coils are individually valved and vented. Thermostatic control systems are furnished when specified. For systems heating several compartments, a mechanically circulated system is recommended.

Plumbing—Watering systems are usually arranged to permit use of 25-ft. lengths of hose, one ¾-in. brass hose valve in each aisle. All pipe and fittings, except valves, are furnished galvanized.

Note: American-Moninger offers a complete service, from the design stage to completion. Full satisfaction is assured. We will be glad to mail work sheets and specifications. State size and type of structure being considered.



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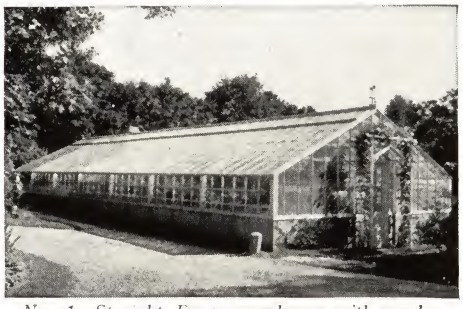
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No. 1—Straight Eave greenhouse with workroom contained in the Glass structure. Built for Roy E. Tomlinson, Montclair, N. J.

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Designers, manufacturers and builders of *every* type of glass enclosure from those that are simple and inexpensive to those of monumental and of classic beauty. All embody the best weathertight, light and shadow-free principle of construction and are fabricated from the highest grade of materials practical for the purpose. All engineering and erection work is done by specialists in greenhouse manufacturing and heating.



No. 2—Curved Eave greenhouse with workroom contained in the Glass structure. Built for C. R. Gay, Halesite, L. I., N. Y.

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Our representatives and engineers are always ready to assist with complete service directly applicable to the particular requirements of any glass-enclosed job. They will furnish you with preliminary visuals, architectural renderings in color and complete *finished* plans, including specifications, masonry plans, etc.



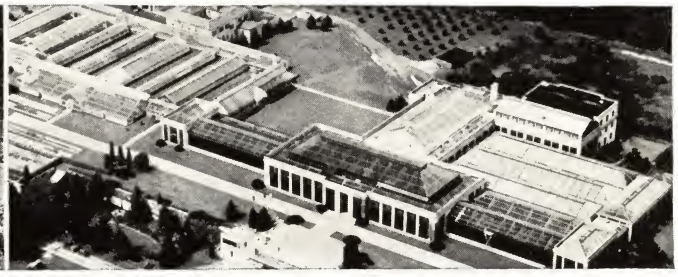
No. 3—Glassed-over Swimming Pool. Built for J. P. Donahue, Southampton, L. I., N. Y.

A. I. A. FOLDERS

Our A. I. A. folders are yours for the asking. They contain specifications and detailed plans for modern greenhouse and conservatory construction, including complete data on newest heating equipment. Also plans and large reproductions of actual greenhouses and conservatories built on many of the finest estates in America!



No. 4—Tropical Plant House with wings. Built for Walter D. Bellingrath, Mobile, Ala.



No. 5—Longwood Gardens, Kennett Square, Pa. Built for Pierre S. du Pont

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See two following pages for Details and Further Information

Standard greenhouse details are shown here in brief only. Send for our A. I. A. Folders for further information. See following page for adaptive features for Conservatories, Sunshine Rooms, Flower Rooms, etc.

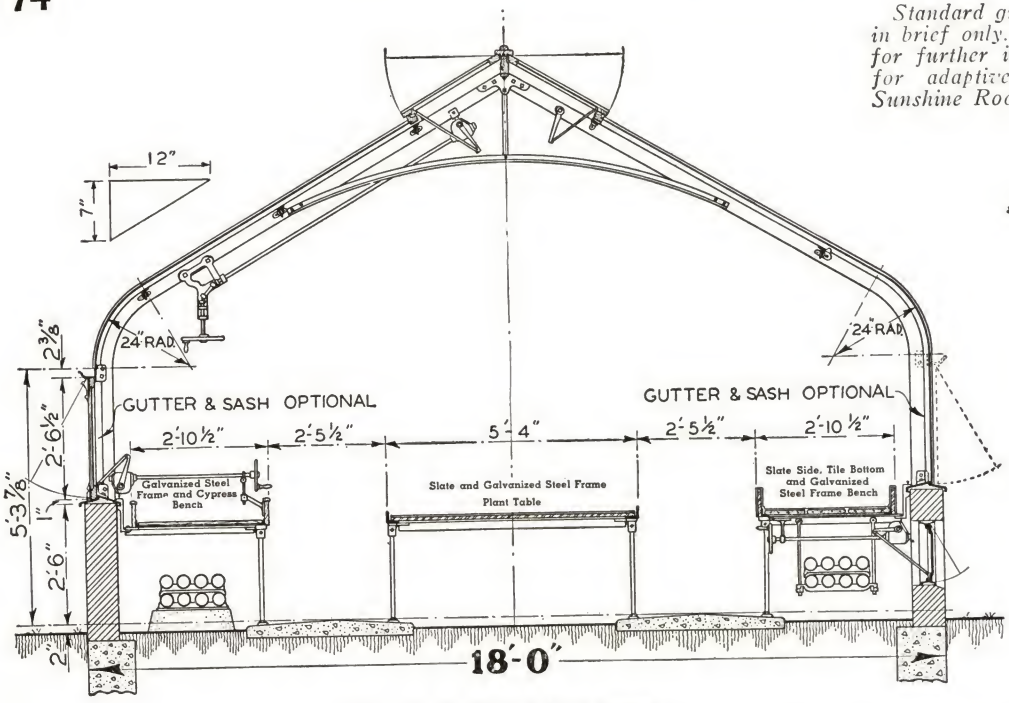


Fig. No. 6. Curved Eave Section

Built with curved steel rafters and glazing bars with curved glass at the eave line. Glass is 24 in. wide, bays are 8 ft. 3 ins. long. Standard widths are 10 ft., 14 ft. 6 ins., 18 ft., 21 ft. 6 ins., 25 ft.

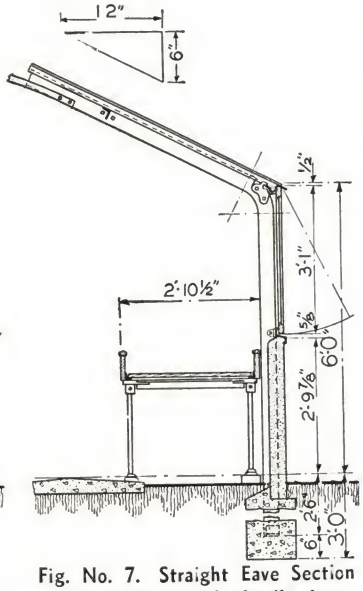


Fig. No. 7. Straight Eave Section

Except for the side details shown the straight eave house is same as the curved. See "General." Standard widths are 14 ft. 6 ins., 16 ft., 18 ft., 21 ft. 6 ins., and 25 ft.

General

Both curved eave and straight eave houses are built with steel rafters, angle purlins and arched steel ties as shown in the sketches. Glazing bars can be of the U-Bar, V-Bar or wood bar type as shown in Figs. 8, 9 on this page, or Fig. 17 on page 3. Side sash and cast iron gutters may be omitted on narrow width houses or conservatories. Panel wall vents can be used in cases where side sash are eliminated.

All wood members are made of tidewater red gulf cypress-tank grade. All cypress parts are painted 3 coats. On U-Bar and V-Bar houses, all steel and cast iron parts are usually specified galvanized by the hot dip process and painted with aluminum paint. Painted steel work may be substituted at a lower cost.

The walls can be brick, stone, concrete or double boarding. U-Bar and V-Bar houses are built with 10-in. cast iron sills and concrete, stone or brick walls. Wood bar houses can be built with 4-in. concrete or double board walls and "Z" sills as shown in Fig. 7. Gables and partitions are of similar construction.

U-Bar Houses—The U-Bar makes an excellent greenhouse. It is lighter because the steel "U," being one of the strongest structural shapes, permits a design using fewer and narrower members. It will last longer because all the steel parts are hot galvanized and for extra protection copper caps and webbing may be placed over the tongue of the bars. See Fig. No. 17 on page 3. It can be used with or without the channel drip.

Master V-Bar Houses—The Master V-Bar is a noteworthy refinement that makes a most beautiful greenhouse. The glazing bars are reinforced with a special steel bar and all the steel parts are galvanized by the hot dipping process after fabrication. See Fig. No. 8. A copper cap may be placed over the tongue of the bar as in Fig. 17.

Lean-to Greenhouses

These are one-half the width of a standard greenhouse section. Fig. No. 10 shows curved eave side detail; Fig. No. 11 straight eave. Minimum width is indicated by dimension B, but can be extended up to 4 ft. wide by use of a deck, shown by dimension X. All items under "General" apply to this construction. Standard minimum widths follow: 7 ft. 3 ins., 9 ft., 10 ft. 9 ins.



Fig. No. 8. Improved Master V-Bar for Greenhouse and Conservatory Construction

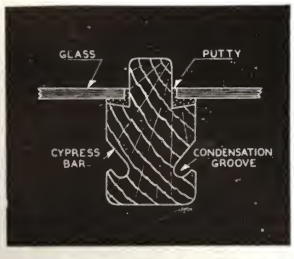


Fig. No. 9. Master Cypress Bar for Greenhouses and Conservatories

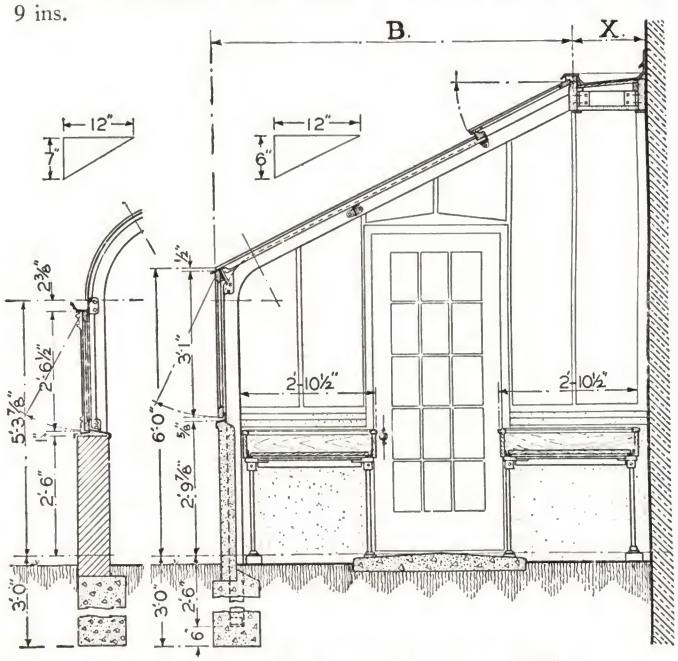


Fig. Nos. 10 and 11. Lean-to Greenhouse Details

For Steel U-Bar detail, see Fig. 17, page 3.

See preceding and following pages for further information

ADAPTIVE FEATURES

Greenhouses, Conservatories, Sunshine Rooms, etc., are primarily practical structures of glass and are readily adaptable to a wide variety of treatments. The numerous forms of glass that are available and practical for use with other materials, make it possible to style the structures in harmony with the architecture of any building or setting. The subjects and descriptions on this and the two preceding pages give you an idea of what has been done. Write to us for further information applicable to your own conceptions.

Roof Pitches—Roof pitches can be made to suit existing requirements and be guaranteed drip-proof.

Eaves—(a) Curved Eave with smooth sides as shown in Fig. No. 6, right side (page 2) or with gutters as shown on the left side.

(b) Straight Eave with standard greenhouse eave plate, Fig. No. 7 (page 2), or with a gutter.

(c) Gutters can be our standard cast iron moulded face, or of a structural shape, such as a channel or H-section, or they can be moulded to match other designs.

Side Constructions—(a) Smooth side fixed glazing as in No. 13.

(b) Regular hinged greenhouse sash as shown in Nos. 6, 7, and others.

(c) Metal sash, large horizontal as shown in No. 12.

(d) Casement sash, cypress or metal, with large lights as in No. 15 or small lights as in No. 14.

(e) Large plate glass solid or adjustable lowering into a pocket as in Fig. No. 16.

(f) To match any adjoining construction.

Walls—Walls can be of any material from shingle or clapboard to cut stone. While greenhouse walls are usually as shown in Figs. No. 6, 7 (page 2), they are often as shown in Nos. 15 and 5, or built to match the walls of adjoining buildings.



No. 12—Glass Enclosed Cocktail Lounge on the fourteenth floor of a mid-town Chicago apartment Pent house

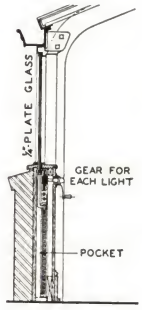


Fig. No. 16 Adjustable Plate Glass Side Construction



No. 13—Curved Eave Lean-to Greenhouse. Built for Charles P. Stokes, Narbeth, Pa.

Ventilation

Ample ventilation is absolutely necessary. Conventional ventilating sash is shown in Figs. No. 6 and 7. For drip-proof construction, louvres, with top hinged outswinging sash are used—Fig. 19. This ventilation can easily be screened. When sash in the sides are fixed closed, panel wall vents, as shown in Fig. No. 6 right side (page 2) are recommended.

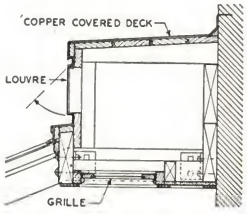


Fig. No. 19 Example of Louvre Type



No. 14—Straight Eave Lean-to with drip-proof roof construction and casement sash sides. Built for Mrs. Otto Meyer, Scarsdale, N. Y.

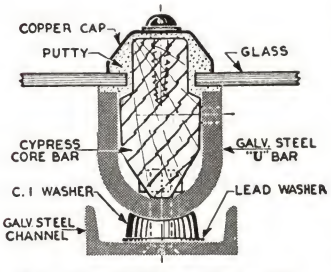


Fig. No. 17 The U-Bar with Channel Drip Gutter

Drip-proof Roof Construction

In greenhouse glazing the glass overlaps slightly like shingles. This is satisfactory for plant culture, but when the interior is to be furnished with draperies, furniture and floor coverings, which might be damaged by water, Drip-proof Construction is needed and each light of glass in the roof is joined with an H-shaped copper strip or came, cushioned between each light of glass.

Copper drip conductors are suspended under these as shown in Fig. 18 and eliminate drip in the glass enclosure.

For further protection the roof bars are covered with waterproof fabric and copper cap (Fig. 17).

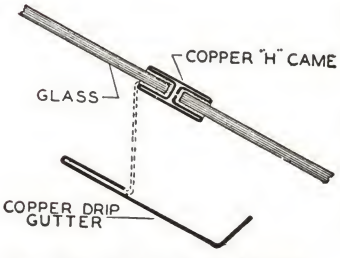


Fig. No. 18 Drip-proof Method of Glazing



No. 15—Spanish Sunshine Room executed with circular construction for W. A. Golden, Larchmont, N. Y.

See the two preceding pages for further information. Send for our A.I.A. Folder

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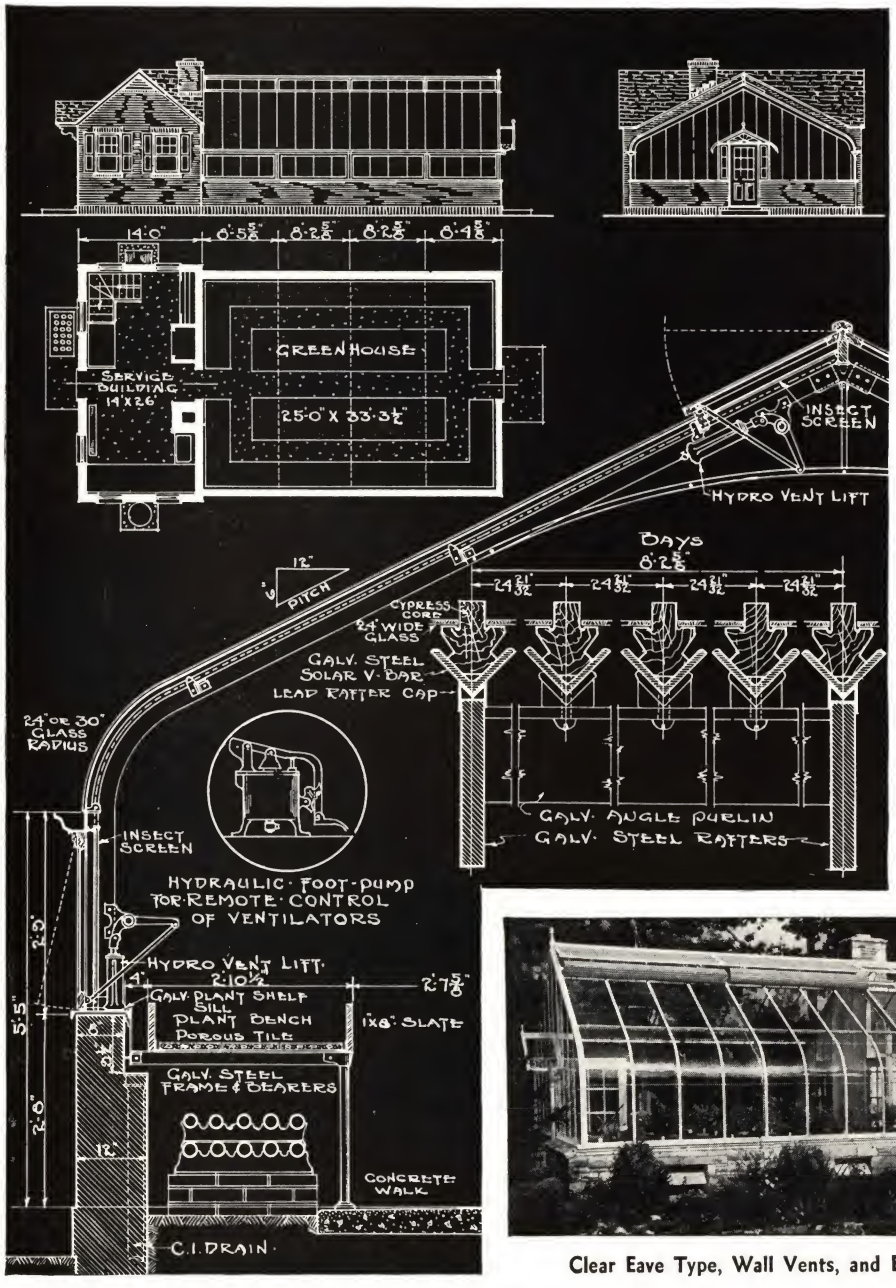
The Original Solar V-Bar

A Galvanized *Steel* bar with small cypress cushion for glazing seat, invented, patented and used by us for a quarter of a century in greenhouses, conservatories, solariums, swimming pool and tennis court enclosures. The Solar V-Bar is not a *Wood* bar with a metal reinforcement, but a *Steel* glazing bar protected against rust by the *Hot Dipped Galvanizing Process after fabrication;* they are used with and without metal glazing caps. Solar V-Bars are used in conjunction with galvanized steel frames, correctly designed to overcome glass breakage resulting from unequal expansion and contraction of glass and steel.

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V-BAR GREENHOUSES
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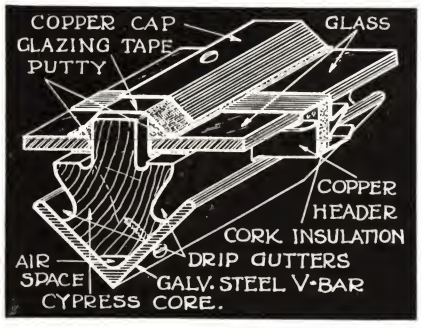
Greenhouses and Conservatories

Lutton Solar V-Bar Construction is superlative for all greenhouses and for conservatories used for plant growing and display. Standard widths, from outside to outside of masonry walls are determined by convenient widths of benches and walks for private estate greenhouses and are as follows: 11 ft. for two side benches; 18 ft. for two side and one center bench; and 25 ft. for two side and two center benches. For standard lengths note dimensions on plan. Standard widths and lengths may be modified to conform to any unusual conditions. Glazed cross partitions may be placed under any pair of rafters.



Special Glass Enclosures

For glass enclosures, other than greenhouses and conservatories, such as solariums, swimming pools, indoor courts, recreation and dining rooms the Lutton Solar V-Bar Special Construction *(see detail below)* is recognized by architects as an outstanding achievement. In this type of construction glass is laid with flush joints, made possible by cork-insulated glazing headers, and the glazing bar cores are capped with metal.



Remote Control Hydro Vent Lifts

Silent, positive, self-locking, inconspicuous, hydraulic vent lifts—designed and perfected by our Engineering Department—now replace the ventilating roof and side machines, control shafts and hand wheels. A small foot or hand pump with control valves placed in any location operate all lines of ventilating sash in every compartment.



Clear Eave Type, Wall Vents, and Equipped with Solar Rolling Cypress Shades

METROPOLITAN GREENHOUSE MFG. CORP.

SINCE 1871

MAIN OFFICES AND PLANT
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PRODUCTS

GREENHOUSES and CONSERVATORIES for private estates, parks, public institutions, etc.; GLASS ENCLOSURES for solariums, cocktail lounges, swimming pools, tennis courts, and sewage treatment plants.

CONSTRUCTION

Metro Greenhouses are built in 85 standard types and sizes, and also in specially designed units for any purpose and to harmonize with any surroundings. The curved eave construction with single-span steel truss roof or interior-column-supported iron roof frame is the most ornate and is practically indestructible; the semi-iron roof construction affords the greater area under glass at lower cost; combined with excellent durability. The standard types with galvanized angle-steel eave plates, although built primarily for commercial growing, are intensely practical for public or private conservatories, and with embellishments that can be added at low cost, can be made into superattractive structures where both fine appearance and general utility are important considerations. Lean-to types are specially designed to meet all existing requirements.





Conservatory and Lounge Erected for Rudolph Maichin, Kew Gardens, L. I., N.Y.

All structural steel work for the larger units is designed for extreme rigidity under wind and snow load, with liberally spaced angle steel purlins which have a special high-carbon content to prevent roof sag. Truss frames are riveted, and in other construction all joints are made with non-rusting connecting fittings. Corrosion is further prevented by the use of galzanized parts, cadmium-plated bolts, brass nails, etc., at exposed locations.

The wooden roof parts of all Metro Greenhouses are made from the finest long-fibre, sap-free, clear-heart Tidewater red cypress, air-dried for two years in its native climate and milled to smooth finish in our main plant.

All woodwork and all metal parts, except those which are galvanized are primed one coat at the factory, and all are given two finishing coats of paint made from Dutch Boy white lead and the finest linseed oil. Aluminum primer or finish optional.

The benches, supported upon pipe frames, are furnished with tile or slate bottom and slate sides or angle-iron edge, or at less expense, with cypress bottoms and dressed cypress sides.

Heating system may be steam or hot water, the former either with boiler set in a pit, or with boiler set on grade and equipped with electrically operated automatic condensation return pump. Small standard or lean-to structures may be served by extra coils or piping from the house heating system.

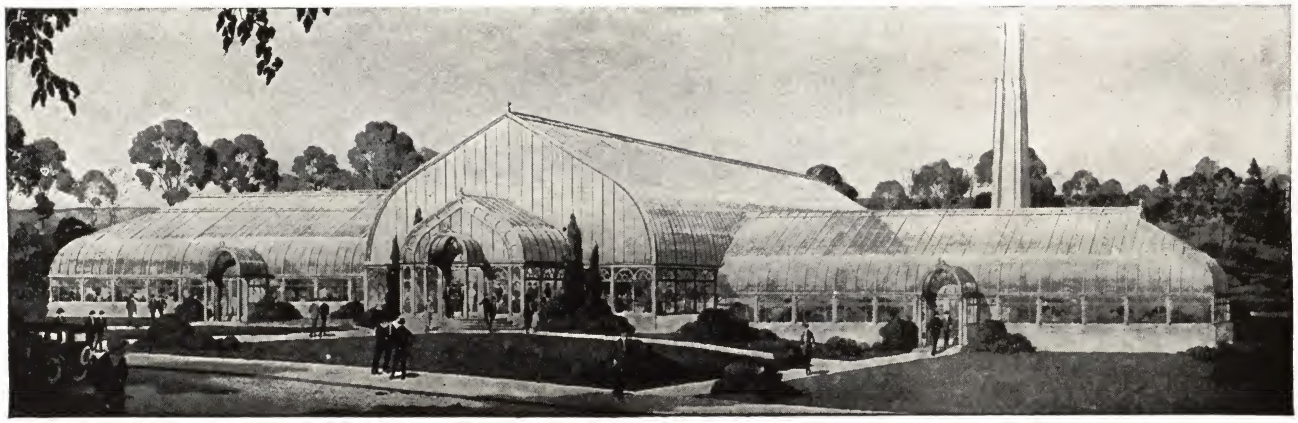
ENGINEERING ASSISTANCE

This company co-operates to the fullest extent with architect and owner, and will either contract for the structure including complete erection, or will furnish all material factory trimmed and fitted to the greatest practical extent. Our Service Engineers will assist the architect in special design, furnish tentative layouts together with material specifications, and will make such suggestions as will best combine the architect's ideas with greatest utility and durability of the finished structure. No charge is made for this co-operation.



Metro Curved-eave Steel-frame Greenhouse Erected Upon Roof of Wing 3 of the U. S. Department of Agriculture Extensible Building, Washington, D. C.

Interior divided lengthwise and crosswise into center corridor and 8 separate compartments. Contract included all material and erection complete. Special design throughout



Erected in Eden Park, Cincinnati, and Intended by the Cincinnati Park Commission to Be the Finest Public Conservatory in the Country

Group includes a central 60x159 ft. palm house, two 42x100 ft. show-house wings, a 25x51 ft. propagating house and an 8 ft. 6 in. x 8 ft. 4 in. passageway. Entrances have elaborate modernistic marquees and doors of glass set in aluminum. Our contract also included heating system with exception of boiler.

Two years after delivery of this conservatory, not a single light of glass had been replaced. The thorough satisfaction given by this installation is convincing proof of the ability of Metropolitan to build superattractive as well as highly practical greenhouses of any size.

GUY C. FOSTER, INC.

SOLE DISTRIBUTOR

TELEPHONE
HAnover 2-2061

128 Water Street, NEW YORK, N. Y.

CABLE
GUYFOS

FAST DRYING, CLAY, ADAMANT TENNIS COURT SURFACES

Exclusive builders in the United States of America for the following fast drying tennis courts:

Domestic Green
Special Red
Standard Red
DeLuxe Green
Private Estate
Colourcourt—Surface Dressing for clay courts
Tennis Court Fittings and Equipment

The above tennis surfaces are also available for Badminton Courts, Deck Tennis Courts, and other play surfaces.

GUY C. FOSTER, INC. also build these various areas of clay or asphalt.

More Tennis—Better Tennis—with En-Tout-Cas

En-Tout-Cas was developed over 20 years ago to give a playing surface comparable to grass courts without some of its shortcomings. En-Tout-Cas Courts can be played on early in the spring and late in the fall. A few moments after a heavy rain stops, they are ready for play. Their pleasing colors contrast with the ball and reduce eyestrain from glare. En-Tout-Cas Courts are resilient. You can play longer without tiring. They give a true, uniform bound to the ball. They are the finest and most practical tennis courts built and have a tremendous advantage in that behind them is an experience of over two decades of court building.

Construction, with average care, is permanent. Courts laid in 1915 are still in active use. En-Tout-Cas is dustless. For indoor installations En-Tout-Cas is ideal. Out of doors the rich color of an En-Tout-Cas surface blends delightfully with the landscape. Metal or fabric marking tapes are laid flush with the court and securely and properly fastened down, eliminating poor lines, tripping, etc.

The En-Tout-Cas Tennis Surfaces

En-Tout-Gas builds all types of tennis courts, among them the Domestic Green, which possesses all the inherent En-Tout-Gas qualities of permanence, rapid drying and quality of playing surface, while creating records for low maintenance. Also stressing economy of upkeep is the En-Tout-Cas Special Red, which is substantially the Standard Red processed for lower maintenance. Details of all En-Tout-Cas surfaces gladly furnished promptly on request.

Lowest Maintenance Costs

There are enough experience reports now available to prove that En-Tout-Cas Domestic Green and Special Red cost less to maintain than any other non-fixed type court. These En-Tout-Cas surfaces need be rolled only once each week or 10 days. Daily dragging and sprinkling require less than 20 minutes, which is sufficient for full maintenance. Keeping En-Tout-Cas Courts in excellent condition is simple. Carefully detailed instructions are furnished to every owner or estate superintendent.

Court Fittings and Equipment

Imported and domestic nets, various types of net posts, center guides, different types of marking tapes, specially built rollers, court brushes, sprinklers and sprinkling systems, fences, etc., are supplied for all makes and types of recreational areas.

Prices

Court prices depend on number of courts, the type selected, size of area and for clay courts, on the specifications for foundation and top.

Reputation

En-Tout-Cas has been building tennis courts throughout the World from India west to Australia for more than twenty years and in that time has built more than 27,000 tennis courts. More En-Tout-Cas fast-drying tennis courts are used each year for famous tournaments than any other make. A great number of the most famous tennis clubs in the United States have installed En-Tout-Cas courts. The staff of GUY C. FOSTER, INC. is, we believe, the most experienced fine court builders in the United States.

Guarantee

While there is no actual guarantee given with any of these courts they must at all times measure up to our requirements, as long as they are maintained according to instructions. It is our earnest endeavor to see every En-Tout-Cas Court in the United States at least once each year and have a detailed report sent to the owner. (This service has, perforce, been somewhat restricted these past few years.)

Co-operation with Architects and Contractors

It has been our pleasure through many years to have been associated with many architects and builders in the installation of tennis courts for their clients.

Our service to them has included co-operation in every detail of tennis court planning, including the selection of the proper court, the selection of the site, its proper grading and protection, etc. This experience is available of course, without obligation.

Construction Requirements

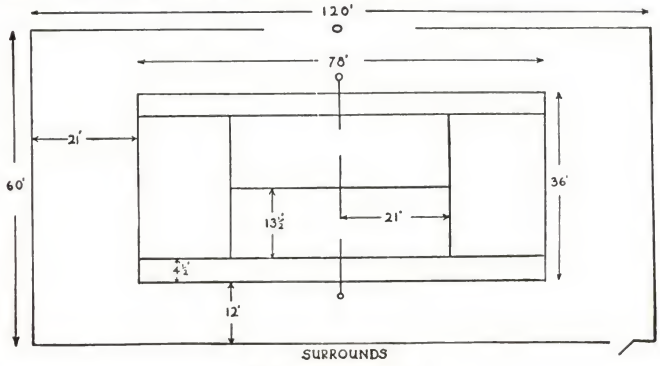
(Standard Sized Court 60x120 ft.)

Thoroughly consolidated site graded level or with 2-in. cross court fall, depending on nature of soil.

No underdrainage is necessary, although the court must be protected from surface flow from surrounding terrain.

135 yds. first grade soft coal cinders.
600 brick for edging court (finished flush with surface).
About 50 common labor days.
Miscellaneous sand, cement, etc.

En-Tout-Cas Fast-drying Courts have a total finished thickness of 4½ in. (cinder base and surface.)



A Standard Layout

DUBOIS FENCE & GARDEN CO., INC.

TELEPHONE
AShland 4-7151

101 Park Avenue
NEW YORK, N. Y.

CABLE ADDRESS
"Duboifence—New York"

DUBOIS CHESTNUT WOVEN WOOD FENCE

Made in France

DUBOIS

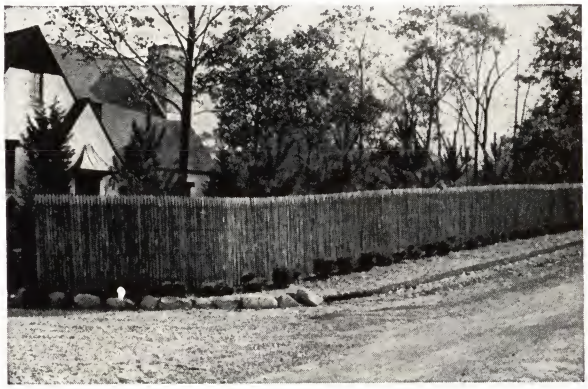
Trade-Mark Reg. U. S. Pat. Off.

The Fence

No other fence is quite like Dubois Chestnut Woven Wood Fence. It is made in France of split, live young chestnut saplings, pointed at the top and woven together with copperwelded, rustproof wire to horizontal braces into sections 5 ft. in length. So closely are the saplings bound together that they form a perfect screen, through which outsiders cannot see.

Only pickets of the first selection are used in the manufacture of this unique fence. They are carefully heat-treated to prevent warping and are bound by skilled craftsmen into 5-ft. panels. This work is done entirely by hand.

Uses — Dubois affords absolute privacy, prevents trespass, shuts out unsightly views, and is equally suited to country estate or penthouse terrace.



Dubois Chestnut Woven Wood Fence

Gates

Single walk gates and double driveway gates to match all Dubois Fences are furnished with attractive iron hinges and latches, and are available with straight or curved tops.

Easy To Install

Dubois framework is made of long lived red cedar (Juniperus Virginiana). The posts are beveled at the top and the ends of the cross rails are mitered for quick and easy erection; no labor is required beyond setting the posts and nailing in the cross rails. Dubois Red Cedar Framework imparts to the rear of the fence the same natural charm that the slender palings give to the front.

Six Heights—Dubois comes in six heights: 18 in., 3 ft. 10 in., 4 ft. 11 in., 6 ft. 6 in., 8 ft. and 10 ft.

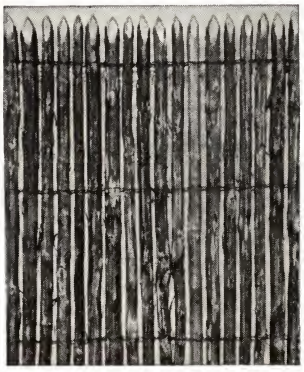
DUBOIS CLEFT CHESTNUT FENCES



Dubois Close Cleft Chestnut Fence
Has pickets spaced approximately ¼ in. apart



Dubois Open Cleft Chestnut Fence
Has pickets spaced approximately ¾ in. apart



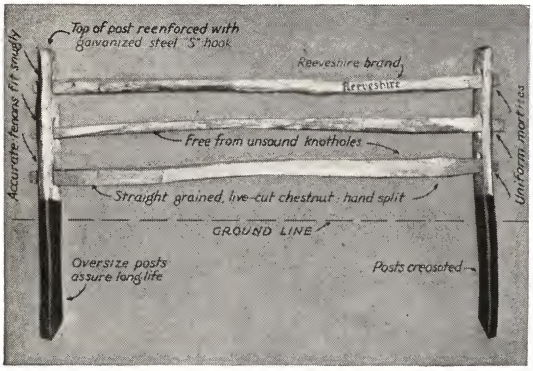
Dubois Cleft Chestnut Fences are also made of half round, heat-treated, hand split saplings, the same as those used in Dubois Chestnut Woven Wood Fence and are bound with copper welded wire by machine instead of by hand. The pickets are spaced slightly apart. They are therefore less costly than Dubois Chestnut Woven Wood Fence, but are equally attractive and durable. They are furnished in rolls 16 ft. in length in 3 ft. 10 in.; 4 ft. 11 in.; and 6 ft. 6 in. heights. There are two styles: one known as *Close Cleft* with pickets approximately ¼ in. apart, and the other known as *Open Cleft*, with pickets approximately ¾ in. apart.

TELEPHONE
AShland 4-7151

DUBOIS REEVES FENCES, INC.

101 Park Avenue, NEW YORK, N. Y.

REEVESHIRE* POST AND RAIL AND HURDLE FENCES



Reeveshire* Post and Rail Fence

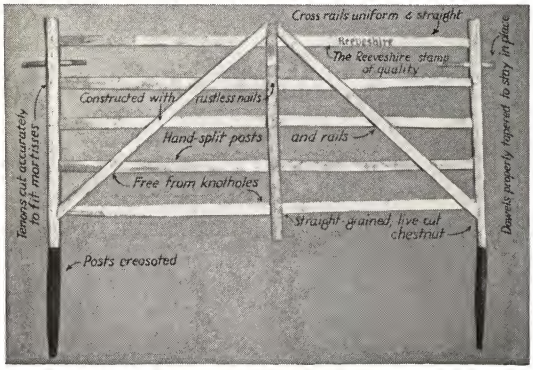
Reeveshire* Old-Fashioned Post and Rail Fence

The ideal fence for the large estate

This rugged fence of hand hewn chestnut is unsurpassed for beauty and permanence. It is furnished in two styles, 3 and 4 rail, both of which make a fence 4 ft. high when erected. The rails are 11 ft. in length, and the posts, which are treated with creosote to withstand the ravages of weathering and insects, are spaced 10 ft. apart when the fence is erected. The top of each post is fitted with a steel "S" iron which prevents splitting. This fence is extensively used in the hunting field and for boundary and division fences. Gates to match furnish in all widths.

Construction—Sections 10 ft. long, from center to center of posts. Shipped knocked down. Posts accurately mortised for quick assembly of rails. Stands 4 ft. high when erected. Posts reinforced at top, and lower 3 ft. of posts creosoted for underground protection. Made with either 3 or 4 cross rails

Shipping Weight—3-rail sections, 150 lbs., 4-rail sections, 180 lbs.



Reeveshire* Hurdle Fence

Reeveshire* English Hurdle Fence

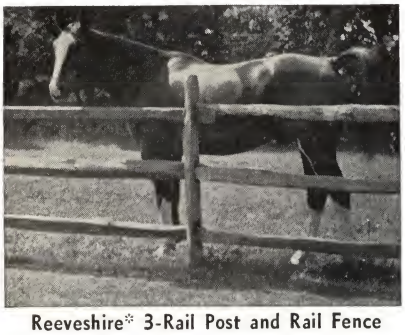
The American adaptation of the hurdling which has been used in England for centuries, and which meets the demand in this country for a fence suitable for fox hunting and steeplechasing. In the show ring these hurdles make attractive and practical wings for jumps. They are carefully hand split from chestnut timber, shipped in sections 8 ft. 3 in. long in 4, 5 and 6-bar styles, all of which make a fence 4 ft. high when erected. The ends of the posts are treated with creosote. Pins for locking the sections together are supplied with the hurdles.

Twelve hurdles make 100 ft. of fence—640 hurdles to the mile.

Construction—Sections 8 ft. 3 in. long. Stands 4 ft. from ground when erected. Posts 6 ft. high; pointed at bottom and lower 2 ft. of posts creosoted for underground protection.

Gates to match furnished in all widths.

Shipping Weights—4-bar hurdle, 60 lbs.; 5-bar hurdle, 65 lbs.; 6-bar hurdle, 70 lbs.



Reeveshire* 3-Rail Post and Rail Fence

Reeveshire

"The Name of Famous Fences"



Reeveshire* 4-Rail Post and Rail Fence



Reeveshire* Hurdle Fence

REEVESHIRE* HORSEBACK GATES

(Patent applied for)

These gates are constructed so that the horseman may pass through without dismounting to either open or close the gate which swings in either direction. Made in 4 ft. 6 in., 6 ft., 8 ft. and 10 ft. widths. Used with any type of fence.

Self-closing Horseback Gate

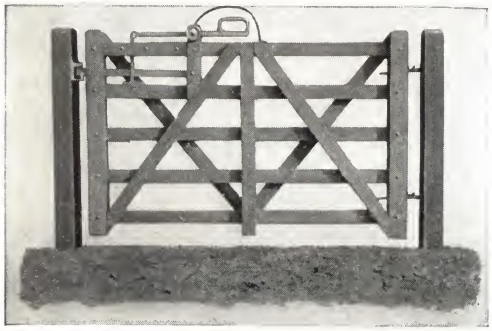


Style "A" Gate—*Closes and latches itself automatically* and is bolted together with galvanized bolts, no nails are used, all metal parts are heavily galvanized, there are no springs or other mechanism to get out of order.



The illustration above shows the semi-circular guard over the handle which effectively prevents horses or cattle in the enclosure from opening the gate.

Easily Opened Self-latching Gate



Style "B" Gate—*Is easily opened and is self-latching but is not self-closing,* and is of lighter construction than Style "A" Gate and therefore is lower in cost.

*Trade Mark Registered U. S. Patent Office

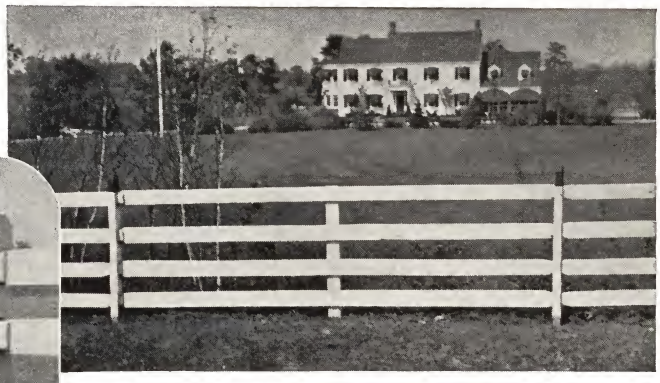
Hanging and Latching Posts Are Supplied with Each Gate

REEVESHIRE* BOARD FENCES

Reeveshire* Monmouth Board Fence

Constructed of heavy rough sawn locust posts and oak boards and is particularly suited to locations where a fence of more formal type than the split post and rail fence is required. The posts are of locust, the line posts being 2½ in. thick, 6 in. wide, 7 ft. long and the intermediate posts 2 x 4 ins., 6 ft. long. The boards are 1¼ x 5-in. oak and are 14 ft. in length. Made in 3 and 4 board styles, both 4 ft. high when erected. Furnished unpainted.

Gates to match made to order.



Reeveshire* Monmouth Board Fence



Reeveshire* Paddock Board Fence

Reeveshire* Paddock Board Fence

Made entirely of rough sawn chestnut. Posts are 4 x 4 ins., 7 ft. long, the lower 3 ft. being creosoted for underground protection and are spaced 8 ft. apart. Each post is fitted with a face board and cap. The boards are 16 ft. long 5 in. wide, 1 in. thick. Made in 3 and 4 board styles 4 ft. high when erected. Furnished unpainted. Gates to match made to order.

REEVESHIRE* PICKET FENCES

Reeveshire* Red Cedar Fence

Made of red cedar slab pickets sawn on three sides with the bark on the fourth side. The pickets are neatly pointed at the top and are 2½ in. wide. The posts are of Tennessee aromatic red cedar and are spaced 10 ft. apart. The posts are connected by red cedar cross rails to which the pickets are nailed. The ends of the rails are milled to fit around the posts, making it a very simple matter to assemble the framework and attach the pickets to it.

Reeveshire Red Cedar Fence is supplied in 3, 4, 5, 6, 7 and 8-ft. heights with pickets close together or spaced to meet the customer's requirements. It is regularly shipped unassembled with the pickets packed in bundles ready to be nailed to the framework. On special orders we make the pickets up into 5-ft. panels. These panels cost slightly more than the loose pickets and take a higher rate of freight, but make the fence somewhat easier to erect.

Attractive gates with curved or straight tops are supplied complete with hardware.

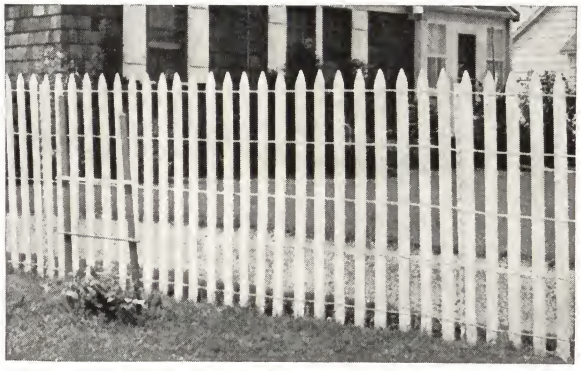
Reeveshire Red Cedar Fence is also furnished with bark removed for painting (as shown illustrated at right). The result is a fence of very unusual texture.



Reeveshire* Red Cedar Fence



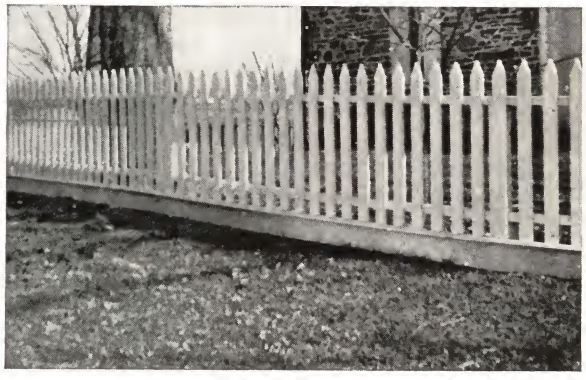
Reeveshire* Red Cedar Fence
(Peeled and Painted)



Reeveshire* Wire and Picket Fence

Furnished in rolls of 100 ft. in 3, 4 and 5-ft. heights. Supplied in red, green, white and unpainted. Pickets are ½ in. thick, 1½ in. wide and are spaced 2 in. apart.

*Trade Mark Registered U. S. Patent Office.



Reeveshire* Picket Fence

Picket fences of all types furnished to any specifications.

JOHN C. RUNKLE, President

THE ELHIDE COMPANY

Makers of Elhide Hand-Split Cedar Shingles

130 Sixth Street, CAMBRIDGE, MASS.

TELEPHONE: Kirkland 5100

PLANTS: HATZIC, B. C.; CAMBRIDGE, MASS.

Products

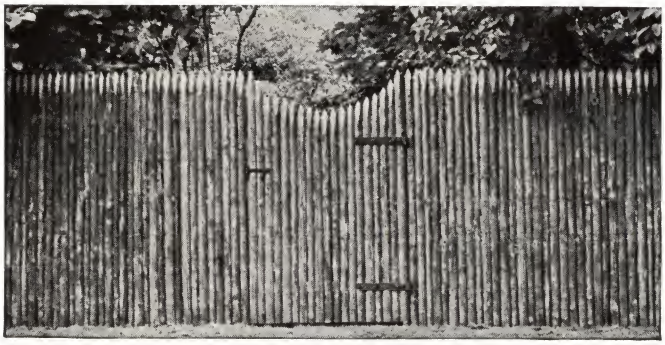
ELHIDE WOVEN RUSTIC FENCING.
Also Elhide Monson Maine Roofing Slate.
For Elhide Hand-split Cedar Shingles, see File Index.

Elhide Woven Rustic Fencing

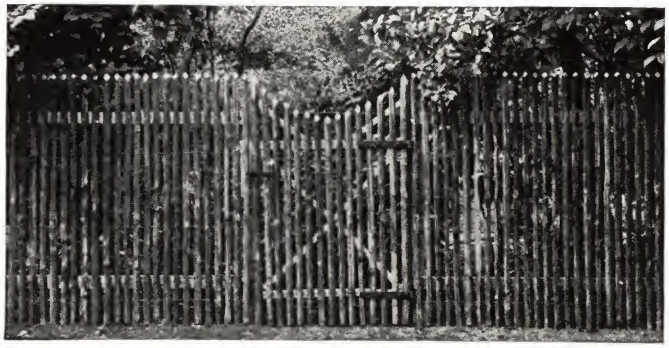
This fencing is manufactured in our Cambridge plant. It is made in various types using French Split Chestnut Sapling Pickets, Round Cedar Sapling Pickets with bark on, or Hand-split Pickets from Pacific Coast big Red Cedars. All are woven with non-rusting Copperweld wire into a sturdy, attractive, long-life fencing, and can be had in any of the following standard heights: 3 ft. 10 in., 4 ft. 11 in., 6 ft. 6 in. Also in special heights upon request. Gates can be furnished to match any of the fencings. If required, special shapes can be made from sketch to fit any particular conditions such as ramps, changes in heights, etc. Estimates and suggestions furnished for the asking.

Write us for full description and detailed information with pictures, prices, etc., on all our woven rustic fencings.

French Chestnut Picket Fencing



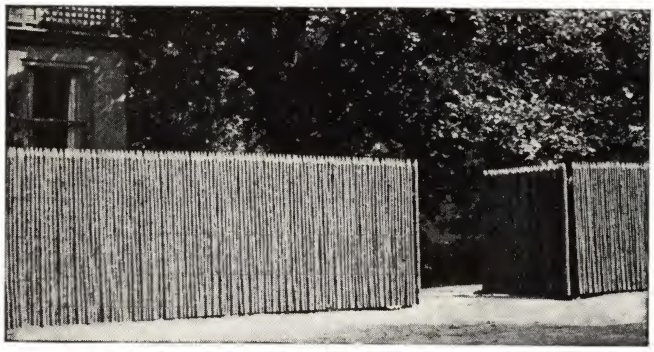
French Chestnut Picket Fencing, Closely Woven



French Chestnut Picket Fencing, ¾-in. Cleft Woven

The pickets in this fencing are made in France and are hand-split from live chestnut saplings, straightened and heat-treated. The outer bark has been removed and the pickets are woven closely together, or spaced as desired.

Cedar Sapling Fencing



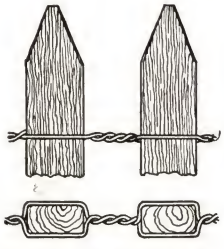
Elhide Woven Cedar Sapling Fencing
Showing double driveway entrance gates



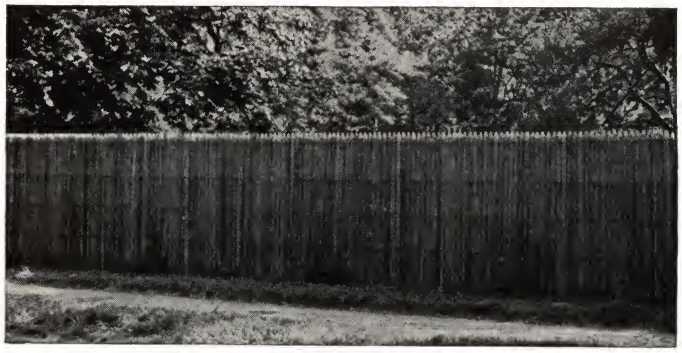
Elhide Woven Cedar Sapling Fencing
Special fencing wrapped around iron posts

Elhide Cedar Sapling Fencing is woven with pickets cut from small live trees. The saplings are not split but are left round with bark on. Their natural roughness, with the dark, rich color of the bark is very decorative bordering a garden or estate.

Hand-split Red Cedar Fencing



Section of Flat Hand-split Pickets Open Style Weaving



Elhide Woven Hand-split Cedar Fencing



Section of Three-cornered Hand-split Pickets Close Style Weaving

The Pickets in this fencing are split by hand from the heartwood of the Pacific Coast red cedars, and the natural split grain surface of the cedar is most attractive. The pickets are either flat or three-cornered as desired.

NEW JERSEY FENCE COMPANY

Fences, Gates and Rustic Outdoor Products

BURLINGTON, N. J.

PLANTS: WATERVLIET, N. Y., BURLINGTON, N. J. AND WESTERVILLE, OHIO

TYPES OF FENCES

American Post and Rail, English Hurdle, Indian Cedar Picket, Lincraft Woven Picket, Imported French Picket, American Redwood Picket, Tennessee Red Cedar Picket, Rumson Board, Snow, Colonial Bungalow, Interwoven Picket, Winter Guard, Rustic Cedar, Silo Fence, Jump Hurdles, Wings.

OUTDOOR RUSTIC PRODUCTS

Summer Houses, Shelters, Pergolas, Arches, Rustic Bridges, Trellises, Cabins, Garages, Lawn Furniture Sets and Individual Pieces, Flower Boxes, Ferneries, Tables, Benches, Tree Seats, Rustic Gateways, Rustic Signs, Play Pens, Picnic Sets, Bird Houses and Feeders.

Catalog containing full descriptions and more than 125 illustrations upon request

HOW "LINCRAFT" SERVES YOU

"Lincraft" is a name identified with quality fences and Outdoor Rustic Products for many years. Products bearing the "Lincraft" name will be found on the largest estates in America.

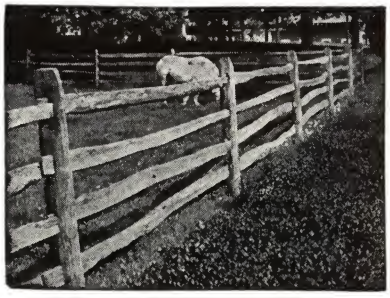
Situated with three strategically located plants which enable us to economically serve a large portion of the United States, particularly the east and middle west, the NEW JERSEY FENCE COMPANY, with a full staff of experienced wood craftsmen, are ever ready to serve the architect and landscape architect, as well as the large and small estate owner.

In the "Lincraft" catalog will be found over 125 illustrations with complete descriptions of outdoor home beautification materials. A large variety of materials are stocked at our various plants and often overnight shipments can be made.

A complete creative department is at your disposal for specially designed Rustic pieces. Literally, we can build anything from Rustic materials from your or our own specifications.

Correspondence is invited from those seeking to create a "different" atmosphere outside their home, and from folks with special fencing problems.

Space, of course, does not permit us to show the versatility possible with Rustic woodcraft. Below are shown some of the more standardized and often used products.



American Post and Rail Fence

Made of unblighted chestnut hand hewn rails with either chestnut or locust treated posts. Several styles and heights for varying circumstances. A fine farm and large estate fence, requiring practically no upkeep expense.

Rumson Sawed Board Fence

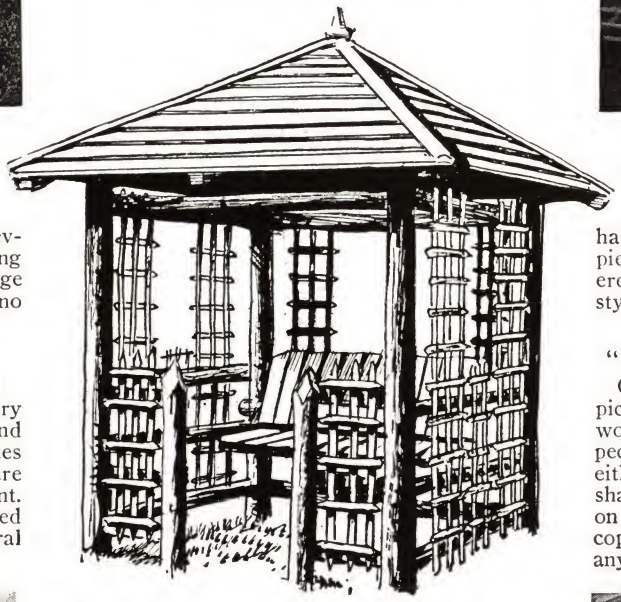
A beauty of line and symmetry that can only be matched by hand craftsmanship. The Rumson gates pictured above, with proper care, are practically a lifetime investment. Solid sawed oak boards with tapered fungi-resisting locust posts. Several styles.



Typical

LINCRAFT

Products



The "Beverly" Summer House

The size and design of Summer Houses is practically limitless. The one pictured gives but an idea of the possibilities. Substantially made leak-proof roofs are a feature of Lincraft Summer Houses. Many shapes and sizes are available in stock designs and larger, more ornate houses can be built in sections at the factory and assembled on an estate, or we can do the entire job of erecting in most locations.



English Hurdle Fence

Probably the most widely used fence for the confinement of cattle and smaller animals. Solid hand hewn chestnut hurdles are one piece and can easily be removed and erected in another place. Several styles to meet specifications.

"Lincraft" Woven Picket Fence

One of the most beautiful of all picket types of fence is the Lincraft woven cedar. Adaptable to many peculiar conditions. Available in either close woven or spaced, with shaved picket tops. Bark may be left on or removed. Tight woven with copper bond wire. Harmonious to any surroundings. Several heights.



ESTABLISHED 1918

RUSTICRAFT FENCE CO.

DAVID TENDLER

TELEPHONE
Malvern 2200

Manufacturers of Wooden Fences and Wooden Gates

3 King Road, MALVERN, PA.

These hand-hewn wooden fences are distinctive in their naturalness and wonderfully durable. They last for many years without painting or any attention and improve in beauty as they age under exposure to the weather.

Full Information and Prices—Owing to the continual change in lumber prices, no set price can be established on fences. However, we publish periodical price lists consistently based on the fluctuating cost of materials and labor. They are yours for the asking.

Rusticraft FENCES

TRADE-MARK
(Registered)

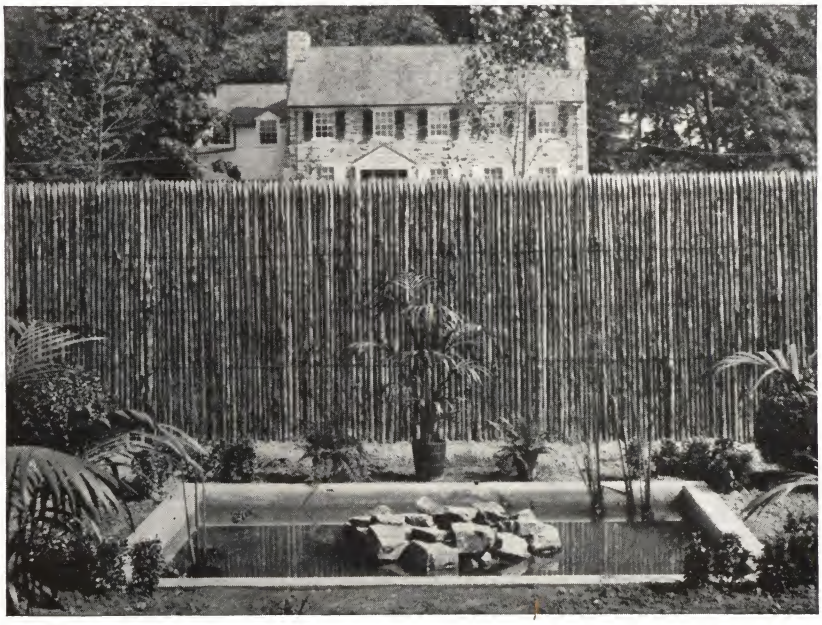
Over 20 years specializing in Quality Wood Fences and Gates.

You may specify and buy any Rusticraft product with complete confidence. Let us know the type of fence that interests you (and approximate footage) and we will give full details and cost delivered by freight or motor truck. Prompt delivery is available at all times.

IMPORTED FRENCH "WOVEN" PICKET FENCE

Made in France from carefully selected, straight chestnut saplings, pointed at the tops and *woven closely together* with heavy copper wire—all in accordance with Rusticraft specifications. This fence, with its weathered beauty and natural charm, creates an atmosphere of refinement and restfulness wherever used. It harmonizes perfectly in any setting and is widely used to shut out objectionable views and to secure privacy. At the same time, it provides friendly though formidable protection to property.

Practically indestructible, this all-purpose fence insures many years of satisfactory service—with no upkeep cost whatever. Made in 4, 5, 6½, 8 and 10-ft. heights. Framework and gates also supplied.



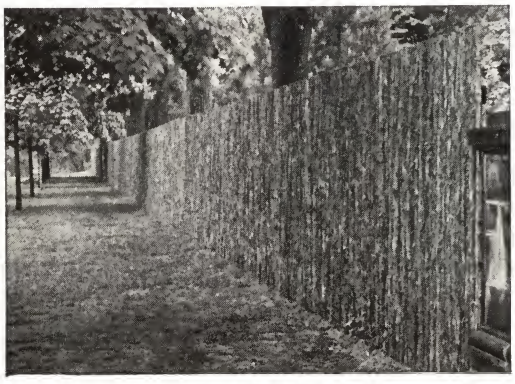
FRENCH "CLOSE CLEFT" PICKET FENCE

Made of the same strong, live chestnut saplings as the closely woven type—*pickets spaced ¼ in. apart.* This feature gives this fence many more widely diversified uses as it allows air and sunshine to pass through. We import direct from France.

TENNESSEE AROMATIC RED CEDAR PICKET FENCE

Outstanding for its natural beauty, rustic charm and long life. It is made in two heights—5 and 7 ft.—and is shipped in sections 4 ft. wide. No wire is used in this fence.

Rusticraft Tennessee Aromatic Red Cedar Fence is easily erected on framework supplied by us or secured from local sources.



RUSTICRAFT POST AND RAIL FENCES

Post and Rail Fences—3 or 4-rail—hand-split of West Virginia chestnut timber. The rails are 11 ft. long, and the posts are 7 ft. long. The part of the post going into the ground is treated with a wood preservative. This fence is 4 ft. high when erected, and each panel is 10 ft. long when completed. A graceful fence, strong and durable, good for 30 to 40 years.

English Hurdle Fences—Hard split chestnut timber in 8 ft. 2-in. sections, or sawed all heart California redwood in 8-ft. sections. Easily erected. 4 ft. high; will last 20 to 30 years.

Farm Gates—*"Wont Sag"* California redwood timber in widths from 4 to 16 ft., 4 ft. high. Strongly braced on both sides. Gates require no painting.

Horseback Gates—*"E-Z-opn"* self-locking horseback and farm gate of redwood in 4, 6, 8, 10 and 12-ft. widths. A light lift of handle opens gate forward from either side. Locks itself when pushed shut.

"Improved Hitchcock" Automatic horseback gate in 4 and 6-ft. widths. Sturdy construction impossible to open by pushing or leaning. A pull on the rope on one side opens and another pull on the other closes.

Automobile Gates—Sturdily constructed gates can be opened from seat of automobile, wagon or truck.

We ship to all parts of the United States. Write for Fence and Gate Book.

ANCHOR POST FENCE COMPANY

Manufacturers of Iron Fences, Wire Fences and Rustic Wood Fences

GENERAL OFFICES

Eastern Avenue and Kane Street, BALTIMORE, MD.

BRANCH SALES OFFICES

ALBANY, N. Y., 612 Home Savings Bank Building
ATLANTA, GA., 47 Alabama Street, S. W.
BUFFALO, N. Y., 320 Jackson Building
CAMBRIDGE, MASS., 238 Main Street
CHICAGO, ILL., 333 No. Michigan Avenue
CLEVELAND, OHIO, Plymouth Building
DARTMOUTH, MASS., Russells Mills
DETROIT, MICH., 212 Architects Building
GREENVILLE, S. C., Augusta Road
HARTFORD, CONN., 43 Farmington Avenue
HOUSTON, TEX., 2923 Wentworth Avenue
LOS ANGELES, CAL., 616 So. Anderson Street
MINEOLA, L. I., N. Y., 167 Jericho Turnpike
NEWARK, N. J., 194 Frelinghuysen Avenue
NEW YORK, N. Y., 9 East 38th Street
PHILADELPHIA, PA., Broad Street and Allegheny Avenue
PITTSBURGH, PA., 419 Melwood Street
ST. LOUIS, MO., 612 Louderman Building
SAN FRANCISCO, CAL., 460 Fifth Street
SHREVEPORT, LA., 847 Rutherford Street
WASHINGTON, D. C., 615 Colorado Building
WHITE PLAINS, N. Y., 18 Depot Plaza
WILMINGTON, DEL., 736 Nottingham Road

Sales Agents in Other Principal Cities—Consult Telephone Directory

FACTORIES: BALTIMORE, MD., LOS ANGELES and SAN FRANCISCO, CAL.

For Oil Burners and Air Conditioners, see File Index

Products

ANCHOR CHAIN LINK and ORNAMENTAL IRON FENCES, including: Ornamental Iron Entrance Gates; Electrically Welded Iron Fences, Gates and Bridge Railings; Wire and Iron Fences of all kinds for country places, residences, parks, playgrounds, institutions, factories, mills, railroads, airports, reservoirs, highway guards, etc.; Tennis Court and Athletic Field Enclosures; Kennel, Poultry and Stock Paddock Fences; designing and construction of Special Enclosures for game, birds, etc.; Iron and Wire Arches.

ANCHOR RUSTIC WOOD FENCES.



TRADE-MARK

Nation-wide Sales and Erecting Service

A chain of Factory Branch Offices located in the principal cities of the United States insures immediate attention to the Architects' requirements.

Trained crews are maintained for erecting fences under supervision of our main office and branches, insuring good workmanship and an economical job.

If desired, we will make surveys for grades and measurements and take entire charge of the work.

When a customer prefers to do the erecting, tools and necessary information are furnished.

ANCHOR CHAIN LINK FENCES

It is our contention that a chain link fence should be not only enduring in construction, but attractive in appearance as well, Anchor Chain Link Fences have been designed with these points in mind. Their four exclusive features—(1) *High carbon steel U-bar Line Posts;* (2) *Square Terminal Posts;* (3) *Drive-anchorage;* (4) *Anchor-Weld Wire Gates*—contribute materially to their exceptional strength and distinction.

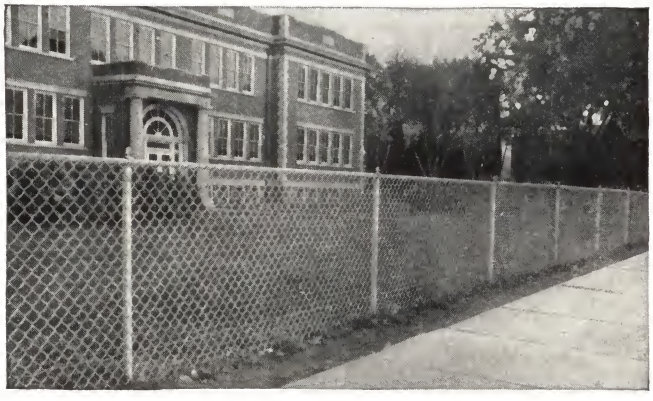
Anchor Chain Link Fabric is of best quality copper-bearing wire, *galvanized after weaving,* or electroplated wire. Made of Nos. 9 and 6 gauge wire, 2-in. mesh, in heights from 3 to 10 ft. The small mesh affords no foothold for climbers and when three strands of barbed wire are placed above the fence fabric an additional safeguard is provided.

Both top rail of galvanized pipe and barbed wire topping are optional.

All parts are heavily galvanized by the hot-dip spelter process.



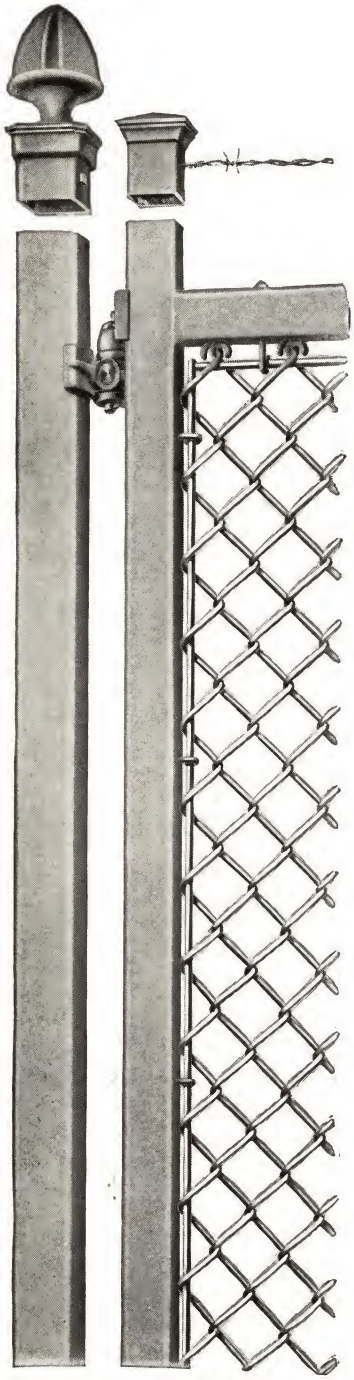
Type AT-1—This Anchor Chain Link Fence is suitable for use on the property lines of city and suburban homes. Heights 3 ft., 3 ft. 6 in., and 4 ft.



Type CT-1—Schoolyards and playgrounds are effectively protected by this Anchor Chain Link Fence which is made in heights of 4, 5 and 6 ft. Can be supplied without top rail in Anchor Type CO-1.



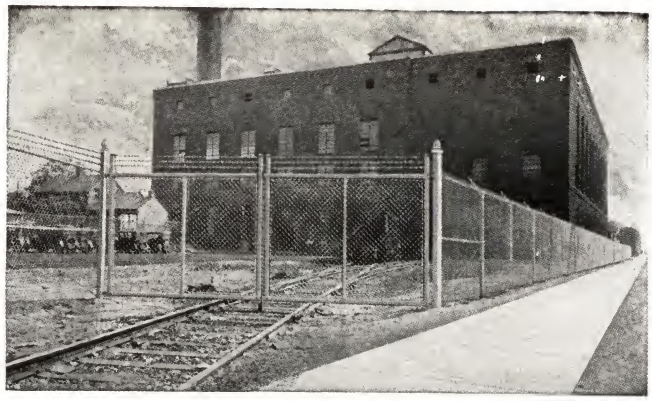
Type DTA-1—Maximum protection for industrial plants, estates, etc., is provided by this Anchor Chain Link Fence. Heights 7, 8, 9 and 10 ft. including three strands of barbed wire. With top rail omitted this is Type DOA-1.



Section of Anchor-Weld Wire Gate
With Anchor Square Terminal Post



Anchor
Drive-Anchorage

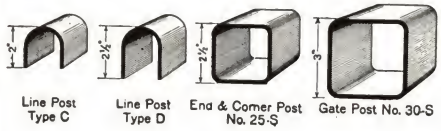


Anchor Chain Link Fence
An installation of Anchor Chain Link Fence, including Double Anchor-Weld Wire Gate



Anchor Chain Link Fence
A lawn gate of fence with Anchor-Weld Single Wire Walk Gate

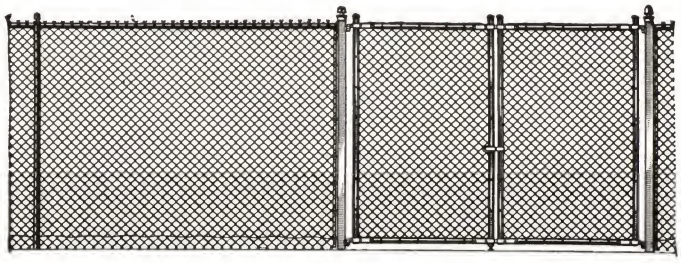
Chain Link Steel Fence



Line Post Type C | Line Post Type D | End & Corner Post No. 25-S | Gate Post No. 30-S

Fabric—2-in. mesh in Nos. 9 and 6 gauge. Galvanized after weaving or Bethanized wire.
Line Posts—Type "C"—2⅛-in. U-bar weighing 2.65 lbs. per ft. Type "D"—2½-in. U-bar weighing 4.20 lbs. per ft.
End and Corner Posts—No. 25-S—2½-in. square tubing weighing 6.5 lbs. per ft.
Gate Posts—No. 30-S—3-in. square tubing weighing 9.7 lbs. per ft.





Anchor Square Terminal Post—An exclusive Anchor feature developed for Anchor Fences. Stronger—because of its square shape; unclimbable—no bands or footholds for trespassers to use as a stepladder; more protective—fabric can not be detached from post from outside; better looking—has no fabric-holding bands.

Anchor U-bar Intermediate Posts—Because they are U-shaped and are made of high carbon rail steel, these posts are exceptionally strong and rigid. They are heavily galvanized by the hot-dip process.

Anchor Drive-Anchorage—To insure permanent alignment of Anchor Fences we set the posts by our *drive-anchor* method. Neither frosts, thaws nor the heavy strains to which a fence is subjected can disturb a fence anchored by this method.

Anchor-Weld Wire Gate—The Anchor-Weld Wire Gate is the latest Anchor development. It marks an important improvement in gate construction.

For the frame of this gate we use square tubular steel, which contributes materially to the attractive appearance, strength and rigidity of the entire gate structure. The horizontal and vertical members of the frame are inseparably *arc-welded* together at the corners. So strong is this construction that no diagonal braces are needed.

Anchor-Weld Wire Gates are made in both single and double types, in a variety of widths.

ANCHOR ELECTRIC FLANGE-WELDED FENCE AND GATES

The ANCHOR POST FENCE COMPANY has been manufacturing iron fences for nearly half a century. Several years ago we adopted the electric weld process for manufacturing this product due to its great superiority. We use grooved square bars: ½, ⅝ and ¾ in. square. The rails consist of these bars in horizontal pairs the length of a panel. Welded between these pairs and at right angles to them, are the pickets. All welding is done on the flanged sides of rails and pickets.

The strength of this type of construction is enormous. Not only does it permit making of panels as long as 10 ft., but center support is unnecessary.

Even when supporting an additional weight of several hundred pounds at the center, the rails show little or no deflection and no permanent set. Pickets can not loosen and fall. Gates made in the same manner as the railing, require no diagonal braces to maintain rigidity.

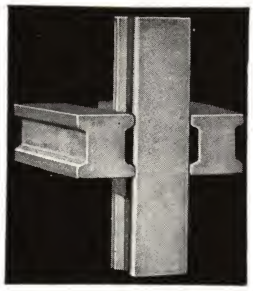
Elaboration is possible; circles, scrolls, ellipses, and other special features may be introduced, double top or bottom rails may be used, and highly ornamental iron posts—or brick, stone, concrete, or cast iron columns—may be employed.

Anchor-Weld Iron Fences and Gates are peculiarly appropriate for use on fine residences and estates. Their simple beauty, rugged strength and permanence lend added attractiveness and dignity to the property they protect.

The tremendous strength of their electric weld construction, the unique grooving of their graceful pickets and rails, their simple lines unmarred by braces, lugs or re-inforcements —these are the principal features that have contributed to Anchor-Weld popularity as demonstrated by the thousands of installations on fine properties throughout the country.

For schools and playground enclosures, Anchor-Weld Fences possess every desirable quality. They provide real protection, are strong enough to stand unusual abuse, resist the action of the elements and, in design and workmanship, are fit companions for the really fine architecture they are often called upon to set off.

In fact, whether it be for country estate, an institution, church, cemetery, public building, park, industrial plant, railroad or public utility, Anchor-Weld Fence will not only effectively enclose but will faithfully reflect the character of the property it protects.



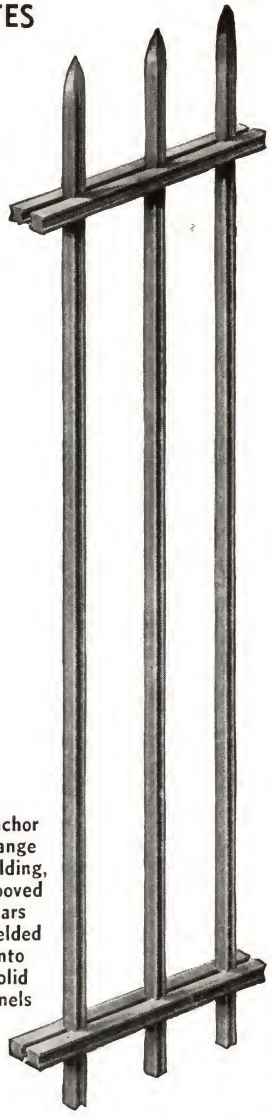
Grooved Square Bars of Open Hearth Steel



Electrically Welded Under Tons of Pressure



Forming One Solid Piece at Each Intersection



Anchor Flange Welding, Grooved Bars Welded into Solid Panels



Spanish architectural motif in the beautiful home of W. F. Markham, Glendale, Cal., is made more attractive by an Anchor Weld Iron Fence



This special Anchor Weld Iron Gate stands at the entrance to the estate of Asa G. Candler, Jr., near Atlanta, Ga.

ANCHOR RUSTIC WOOD FENCES

Anchor Wood Fences can be supplied in several different styles. In Anchor Hurdle and Picket types northern white cedar is the wood selected. Another Anchor Hurdle with rails split instead of round, and Anchor Post and Rail Fence, is constructed of mountain grown chestnut.

Hardware—The hardware used with Anchor Cedar Fences is old-fashioned wrought iron. Gate fastenings are wrought iron or wood bolt type to match the gate itself.

Hardware harmonizes perfectly with the rustic appearance of the wood.

Specification Manual No. 100

This manual contains complete specifications on our different types of chain link and iron picket fencing. A free copy will be gladly sent from Baltimore or supplied by any of our offices.

MEMORANDA

CINCINNATI IRON FENCE COMPANY, INC.

Manufacturers and Erectors of Plain and Ornamental Iron Work

3337 Spring Grove Avenue, CINCINNATI, OHIO

IRON FENCES, IRON GATES, BALCONY AND STEP RAILINGS AND GATES FOR INTERIORS AND EXTERIORS, FOLDING GATES FOR EVERY PURPOSE, WIRE AND IRON WINDOW GUARDS, GRILLES, CHAIN LINK FENCE

Iron Fence—"Cincinnati Fence" embraces a complete line of designs with pointed, malleable or bowed picket tops suitable for residences, private estates and cemeteries. Single and double bowed tops for schools and orphanges, non-climbable tops for institutions and factories.

Wire Fence—Copper bearing chain link fence, selvages barbed and knuckled, with or without extension arms with three or five strand barbed wire, suitable for residences, parks or factories.

Gates—Swinging, sliding, or folding for entrances of every description. Folding gates for the rear of trucks.

Railings—Balcony and step railing suitable for porches, also for the interior. Also suitable enclosures for window boxes.

Window Guards—Designs suitable for residences, banks or institutions made of wire or iron, or steelcrete.

Exceptional quality for the most exacting architectural requirements.



Above:
No. 360—Window Balcony

Fence Construction

"Cincinnati Fence" made of the best open hearth steel or common wrought iron, refined iron or genuine puddled iron.

Rails—Channel, angle or flat sections.

Pickets—Round, square, flat, or angle, suitable thickness according to height required. Milled or forged points, straight or bent in or out, or tipped with malleable or cast iron heads.

Posts—Made in a large variety of sizes and styles to harmonize with architectural surroundings of solid iron, tubing, I-beam of cast iron.

Finish—Priming coat of black, read lead, or red oxide for fence and exterior railing. Flat black or a finished coat in Swedish or polychrome.



Right:
No. 805—Ornamental Grille Made of Wrought Iron

Estimates and Engineering Service

Blue prints and illustrations of our many and varying standard designs gladly furnished upon request. It is always advisable to know for what purpose the material is wanted and measurements of the enclosure embracing the quantity involved.

As nearly every project presents somewhat varying problems, our staff offers helpful design-engineering to architects, engineers and their contractors. Our capability to act in a consulting capacity for architects is the result of many years of co-operating with the pre-fession in design, construction and erection of fence and railings of every description, also plain and ornamental iron and wire work.

Execution of your special designs will be reliably handled in our shop by thoroughly trained and experienced craftsmen. Our service, while exceptionally satisfactory on "rush jobs," never is without the accuracy guaranteed sturdy construction and the rugged strength that endures the test of time. We welcome the opportunity of furnishing estimates.



Right:
No. 462—Interior Railing with Alternate Pickets Twisted with Cast Footings



Left:
No. 717—Porch Railing with Plain Pickets and Ornamental Panels

No. 800—Ornamental Trellis Made of Wrought Iron

CYCLONE FENCE COMPANY

WAUKEGAN, ILL.

WORKS AND OFFICES

NORTH CHICAGO, ILL. DE KALB, ILL. CLEVELAND, OHIO FORT WORTH, TEX. OAKLAND, CALIF.
GREENSBURG, IND. NEWARK, N. J. TECUMSEH, MICH. PORTLAND, ORE.

DIRECT FACTORY BRANCHES

ALBANY, N. Y.	CINCINNATI, OHIO	JACKSON, MISS.	NEW HAVEN, CONN.	RICHMOND, VA.
ATLANTA, GA.	COLUMBUS, OHIO	JACKSONVILLE, FLA.	NEW ORLEANS, LA.	ST. LOUIS, MO.
BOSTON, MASS.	DALLAS, TEX.	KANSAS CITY, MO.	NEW YORK, N. Y.	ST. PAUL, MINN.
BUFFALO, N. Y.	DETROIT, MICH.	MILWAUKEE, WIS.	OKLAHOMA CITY, OKLA	SHREVEPORT, LA.
CEDAR RAPIDS, IOWA	HARTFORD, CONN.	MINEOLA, N. Y.	PHILADELPHIA, PA.	TULSA, OKLA.
CHARLOTTE, N. C.	HOUSTON, TEX.	MINNEAPOLIS, MINN.	PITTSBURGH, PA.	WASHINGTON, D. C.
CHICAGO, ILL.	INDIANAPOLIS, IND.		PROVIDENCE, R. I.	WHITE PLAINS, N. Y.

PACIFIC COAST DIVISION

STANDARD FENCE COMPANY, OAKLAND, LOS ANGELES and SAN FRANCISCO, CALIF., PORTLAND, ORE., SEATTLE, WASH.

SPECIFICATIONS, CYCLONE SAFEGUARD CHAIN LINK FENCE

Built in heights from 4 ft. up to and including 10 ft. Chain Link fabric is full height of fence.

Fabric—"Galv-After" Chain Link copper-steel wire heavily zinc-coated by hot-dip process after weaving. No. 9 or No. 6 gauge wire woven in a 2-in. mesh. On heights 5 ft. and over, both edges of fabric have twisted and barbed finish. On heights 4 ft. and lower, one edge has twisted and barbed finish, the other has knuckled finish and it is recommended that the knuckled edge be placed at top of fence dressed below top rail with the barbed edge at the bottom.

The famous Cyclone chain link fabric which bears the "12m" label has an extra heavy coat of galvanizing that stands a minimum of 12 one-minute immersions by the Preece Test. And that means it will last longer.



Posts—***Line Posts***—2.25 H-column section for fence 6 ft. and over in height. Where fence is less than 6 ft. high, Line Posts are 1.875 H-column section. *Note:* 6 ft. high fence may be furnished with 1.875 section. Both sections have carbon content of .35%.

End, Corner, Angle and Pull Posts—3-in. outside diameter, weight 5.79 lb. per lin. ft. when fence is 6 ft. and over in height. When fence is less than 6 ft. in height, these posts are 2½-in. outside diameter, weight 3.65 lb. per lin. ft.

Gate Posts—Size and strength of gate posts for swinging and sliding gates have been carefully determined by our Engineering Department. Details upon request.

Post Spacing—Posts are spaced in line of fence not farther apart than 10-ft. centers.

Depth of Posts—Line posts for fence 4 ft. or lower are set 24 in. in concrete base; terminal posts 30 in. In 5-ft. fence, line posts are set 30 in., terminal posts 36 in. In Cyclone Safeguard Fence 6 ft. in height and over, all posts are set 36 in.

Post Setting—Concrete post bases are of proper mixture, size and shape to furnish sufficient foundation.

Post Tops—Hot-dip galvanized. All posts fitted with heavy ornamental post tops of malleable iron.

Top Rail—Hot-dip galvanized. Tubular copper-steel 1⅝-in. outside diameter, weight 2.27 lb. per lin. ft. when fence is 5 ft. or over in height. When fence is 4 ft. or lower, top rail is 1⅜ in. outside diameter. Provided with expansion rail couplings. Top rail passes through post tops and forms a continuous brace from end to end of each stretch of fence.



Cyclone Safeguard Fence
Beautiful and dignified property protection for country estates and homes—also golf grounds and clubs

Braces—Hot-dip galvanized, furnished only on fences 6 ft. and over in height. End, gate and corner posts are braced by tubular copper-steel braces 1⅝-in. outside diameter, weight 2.27 lb. per lin. ft. Braces are spaced midway between the top rail and ground and extend to the first line post, fastened by malleable iron or pressed steel connections, then trussed from line post back to end, gate or corner post.

Fittings—All fittings used with Cyclone Safeguard fencing and gates are malleable iron, pressed steel or aluminum.

Fabric Bands—Fasten the fabric to line posts and top rail.



Cyclone Invincible Chain Link Fence

Standard height, 7 ft. Built in heights up to and including 11 ft. Extension arms carry 3 rows of 4-point barb wire 12 in. in or out from fence line.

All other specifications same as Safeguard Fence 6 ft. or higher

Cyclone Tennis Court Enclosure and Backstop

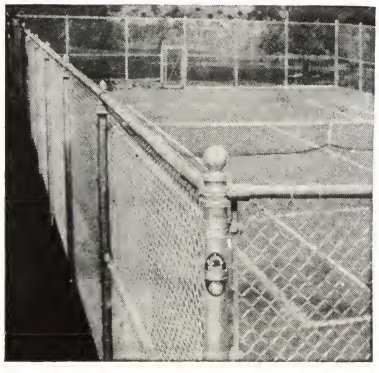
Standard height, 10 ft. Special heights furnished if required. Fabric is No. 11 gauge copper-steel wire woven into a 1¾-in. mesh galvanized after weaving.

All other specifications same as Safeguard Fence 6 ft. or higher

U.S.S. CYCLONE FENCE

USS

UNITED STATES STEEL



Cyclone—Not a "Type"

Cyclone is not a "type" of fence but fence made exclusively by Cyclone Fence Company and identified by this trade-mark.

SPECIFICATIONS, CYCLONE SWINGING GATES

Standard Sizes—Single swing walk gates built standard for 4-ft. opening. Double swing gates for driveways built standard for 8 to 18-ft. openings. Where conditions are such that standard sizes cannot be used, gates are built to meet requirements.

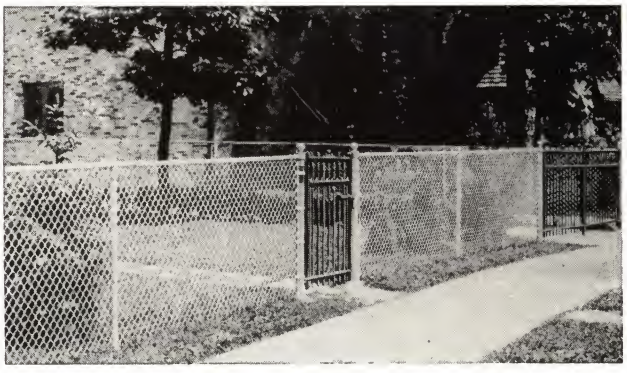
Frames—Hot-dip galvanized, tubular copper-steel. In heights 6 ft. or over, frames are 2-in. outside diameter. Gates 5 ft. high have 1⅝-in. outside diameter frames; under 5 ft. high have 1⅜-in. outside diameter frames. Corner fittings are extra heavy malleable iron.

Stays—Hot-dip galvanized, tubular copper-steel. Stays, together with ⅜-in. adjustable truss rods, keep gate absolutely rigid; prevent sagging, buckling and side weave.

Fabric—Cyclone "Galv-After" Chain Link to match fabric used in fence.

Hinges—Hot-dip galvanized. Made of malleable iron. Exceptionally large bearing surface for clamping hinge on gate post. Bottom hinge is ball and socket pivot type. Cyclone hinge equipment will carry 100% overload.

Latch and Lock—Hot-dip galvanized. Plunger bar type with positive latch; arranged for padlock locking. Double drive gates equipped with catch posts to hold gates in open position.



Safeguard Fence with Wrought Iron Gate

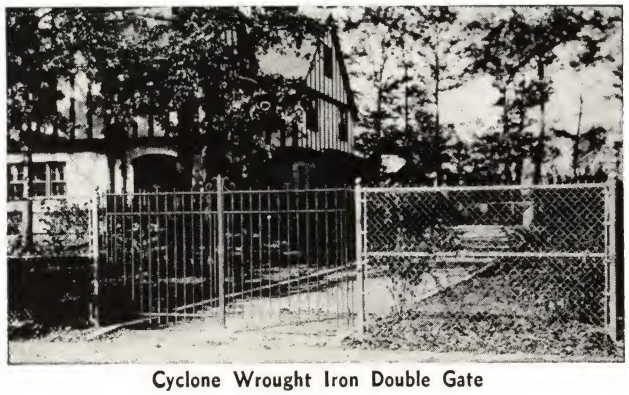
Standard heights: 36, 42 and 48 in. Framework, tubular copper-steel hot-dip galvanized. Fabric "Galv-After" Chain Link copper-steel No. 9 gauge, 2-in. mesh

CYCLONE IRON FENCE AND GATES

Fence—Cyclone Iron Fence, built by artisans with years of training, can be fabricated from special designs from architect's drawings, or from designs developed in Cyclone Art Department. Also made in several standard patterns. Made in any height and of any size materials.

Gates—Entrance gates fabricated from architect's special designs and also furnished in several standard designs.

Gate in illustration below has been especially designed to harmonize with Safeguard Chain Link Fence.



Cyclone Wrought Iron Double Gate



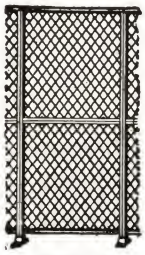
Cyclone Swinging Gates

Either single or double, for Safeguard Fence

WIRE WORK OF ALL KINDS

Partitions (Built-in-Sections)—Standard size sections 4 ft. wide, 8 ft. high. Frames are 1-in. channel iron. Fabric is No. 10 gauge wire woven in 1½-in. diamond mesh. Furnished with either swinging or sliding gates. Handholes or wickets provided where needed. Floor flanges furnished for either wood or concrete floors. Sections are interchangeable, movable; can be taken out and used elsewhere—no refitting—no loss.

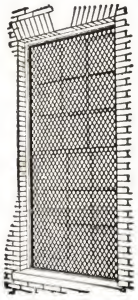
Send blue print or layout of partition work wanted.



Partition Section

Window and Skylight Guards—Frames are 1-in. or ¾-in. channel, or ⅜-in. round iron. Fabric is usually No. 10 gauge wire woven in 1½-in. diamond mesh. Channel iron frames fit into openings. Round iron frames usually allow ¾ in. on all sides for lap.

Special guards built with either channel or round iron frames, using size of wire and mesh desired.



Window Guard



Cyclone Iron Entrance Gates

A dignified entrance is sure to cause much favorable comment

COMPLETE RESPONSIBILITY—NATION-WIDE FENCING SERVICE

Engineering Counsel—Cyclone Engineers will make a complete study of your fence requirements and submit recommendations, layouts, and estimates of cost.

Cyclone Erection Crews—There are many erection crews constantly at work installing Cyclone Fence. One of these crews is available for your installation. However, if you prefer to have your own workmen install the fence, a Cyclone erection superintendent will be furnished at nominal charge, to direct them.

Diagram, Prices, etc.—When writing for information, prices, etc., send simple diagram of proposed fencing. Give measurements of each stretch and total measurements. State whether single or double swing, or sliding gates are wanted and give size of opening.

U.S.S. CYCLONE FENCE

USS

UNITED STATES STEEL

PAGE FENCE ASSOCIATION

BRIDGEPORT, CONN.

From 95 Offices and Warehouses located conveniently throughout the United States and Canada you can secure all Fence Products of the Page Steel & Wire Division of the American Chain & Cable Company, Inc., Monessen, Pa.

For catalog, prices, etc., write the Page Fence Association at the nearest District Office shown below:

PITTSBURGH, PA. BRIDGEPORT, CONN. NEW YORK, N. Y. CHICAGO, ILL.
ATLANTA, GA. SAN FRANCISCO, CALIF. NIAGARA FALLS, CANADA

PAGE FENCE—AMERICA'S FIRST WIRE FENCE SINCE 1883

Important—When Considering Fencing

All fencing looks much alike. Therefore, careful consideration should be given to—(1) Fabric Metals, (2) Galvanizing, (3) Construction and Design, (4) Responsibility for Erection.

1. Fabric Metals

Because no one metal is suitable for all atmospheric conditions, Page has pioneered in offering a selection of superior fence metals.

Page Copper-Bearing Steel Fabric—Is heavily galvanized after weaving by a special process that assures a uniform coat of zinc. Tests in laboratory and actual service prove it the most durable galvanized type of fence.

Page Armco Ingot Iron Fabric—Is made of wire drawn from the well-known Armco Ingot Iron, the purest and most uniform of commercial ferrous metals. Wherever atmospheric conditions exist that would be harmful to even the finest copper-bearing steel protected by galvanizing, Page Armco Fence has given exceptional service. The fabric is galvanized after weaving.

Page "Alcoa" Aluminum Fabric—Embodies all the atmospheric corrosion-resisting properties of the metal aluminum—consequently does not rust. Evidence of this is the immense popularity of aluminum for architectural work that must stand weathering. It requires no painting, no resurfacing of any kind so that its cost per year of service should be considered where permanent fencing is required.

Page Allegheny Stainless Steel Fabric—Is the newest addition to the Page Line. This new metal possesses every desirable quality for fence purposes, most notable of which is its immunity to rust, long life in service and a tensile strength four times as great as low carbon steel, resulting in maximum strength with minimum weight. Page Stainless Steel Tennis Court Nets are made from this rust-defying wire.

The "Time Tested" Stainless Steel

Page Genuine Wrought Iron—A.S.T.M., Spec. A-41-30, is the most enduring of all ferrous metals. It is made up in a variety of fence designs under Page supervision and in accordance with the high standards of Page craftsmanship.

These well-known Trade-Marks identified with Page, are your assurance of the best possible in Fence Protection.

2. Galvanizing

The Page P-12 label identifies Page Galvanizing which is guaranteed to withstand a minimum of 12 one-minute dips by the Preece Test. Page P-12 galvanizing applies not only to fence fabric but also to posts, top rail and fittings as well.

3. Construction and Design

Page has pioneered in fence construction—witness the new Wing-Channel Line Posts providing greater strength, a far neater, more serviceable installation.

4. Nation-Wide Erection Service

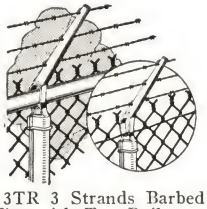
In 95 districts throughout the United States and Canada there is a responsible firm of Page Fence Engineers that carries a complete stock of fence products and specializes in fence construction. This assures expert performance of the work all the way through and gives the advantage of consultation with men of long experience in the erection of fences.

Estimates will be furnished gladly on receipt of rough sketch of proposed work, or complete detailed designs will be drawn up, if desired, and estimates furnished.

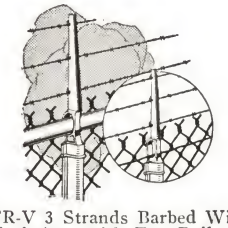
Get in touch with the nearest district office listed above for a copy of latest catalog and any additional information you may desire for your files.



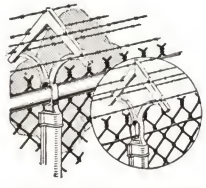
OTR Without Barbed Wire with Top Rail.
OW Without Barbed Wire or Top Rail



3TR 3 Strands Barbed Wire with Top Rail.
3W 3 Strands Barbed Wire without Top Rail



3TR-V 3 Strands Barbed Wire on Vertical Arm with Top Rail.
3W-V 3 Strands Barbed Wire on Vertical Arm without Top Rail



5TR 5 Strands Barbed Wire with Top Rail.
5W 5 Strands Barbed Wire without Top Rail



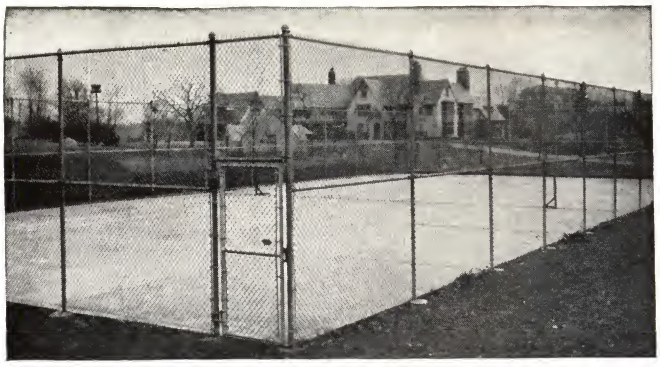
Page P-12 Fence Style 3TR

For fence installations requiring the maximum in protection, Style 3TR which has three strands of barbed wire is recommended. The increased strength of the P-12 Wing-Channel Post and reduced maintenance due to the durability of the parts and fabric makes this fence most desirable where these items are a factor



Page Reliable Fence Style B-1

Page Reliable Fence for residential use keeps property owners' children and dogs *in*, keeps neighbors' children and dogs *out*, establishes boundary lines. It can be erected to follow any irregular contour on the ground and set in any soil conditions



Page Tennis Court Enclosures

Standard heights 8, 10, 12 ft. Gates are welded construction. Illustration shows full enclosure. Half enclosures are available

SUPER STANDARD SPECIFICATIONS
Page (Chain Link) Fence

Page P-12 (Chain Link) Fence shall conform in every respect with Standard Specifications for Page Protection (Chain Link) Fence with exceptions and refinements as follows:

Galvanizing—All fabric, line posts, top rail, gates and miscellaneous fittings other than those made from aluminum, zinc or brass, shall be galvanized by the hot dip method and shall withstand an average of *twelve (12) one (1) minute dips* by the Standard Preece Test.

Fabric—Fabric shall be as specified in standard specifications as to weave and chemical and physical qualities of the wire used. Method and quality of the galvanizing shall be as specified in the standard specifications. Weight of coating, however, per square foot of actual bare wire surface shall be not less than 2.4 oz.



The Exclusive Page Wing-Channel Line Post

Line Posts—Shall be of wing channel design approximately 2⅞ in. wide x 2¼ in. deep, weighing 3.65 lbs. per ft. and made of High Carbon steel, furnished as specified in the standard specifications to conform to depth of setting and spacing.

Top Rail—Shall be 1⅝ in. outside diameter High Carbon electrically welded steel tubing weighing 1.79 lbs. per ft. and shall be furnished in random lengths averaging not less than 15 ft.

Gates—Frames shall be of 2 in. outside diameter High Carbon electrically welded steel tubing weighing 2.14 lbs. per ft. with intermediate bracing of 1⅝ in. outside diameter tubing weighing 1.79 lbs. per ft. All joints shall be welded making a rigid and water tight frame.

Miscellaneous Fittings—All material entering into the fence necessary to make a complete enclosure, such as terminal posts, ballcaps, railtops, barbwire arms, expansion sleeves, brace, tension and fabric bands, hinges and locking devices, etc., shall be construed as to be in accordance with standard specifications as to design and quality of material employed.

These specifications as outlined above shall form and be a part of the standard specifications for Page Protection (Chain Link) Fence, but when designated shall be specified as Page P-12 (Chain Link) Fence. When specified as Page P-12 (Chain Link) Fence it shall be so construed to mean that the galvanized coating on any part taken from the fence shall withstand an average of *twleve (12) one (1) minute dips* by the Preece Test.

STANDARD SPECIFICATIONS
Page Protection (Chain Link) Fence

Fabric—The fabric shall be composed of individual wire pickets which are helically wound and interwoven in the form of a continuous chain link fabric having a square mesh. The top edge of the fabric shall be barbed and the bottom knuckled.

The fabric shall be woven of steel wire, containing not less than twenty-hundredths of one per cent (0.20%) copper by ladle analysis, nor less than 0.18% copper by check analysis. The fabric shall be zinc coated by the hot dipping (hot galvanizing) process after weaving. The zinc coating shall be smooth, of reasonably uniform thickness, free from dross, uncoated spots and adhering particles of foreign material.

The weight of the coating per square foot of actual wire surface shall be not less than 1.2 oz. and shall withstand an average minimum of five (5) one (1) minute dips by the Preece Test.



Page Reliable Fence Style B-1

Page Reliable Fence may be installed with either single gate or double gates for driveway use. Gates are welded construction

Line Posts—2½ in. outside diameter Copper Bearing steel pipe at 3.65 lbs. per foot or 1⅞x2¼ in. High Carbon steel H-beams at 4.10 lbs. per foot.

Top Rail—1⅝ in. outside diameter Copper Bearing steel pipe at 2.27 lbs. per foot.

End and Corner Posts—3 in. outside diameter Copper Bearing steel pipe at 5.79 lbs. per foot.

Gate Posts—3 in. outside diameter at 5.79 lbs.; 4 in. outside diameter at 9.11 lbs.; 6⅝ in. outside diameter at 18.97 lbs. and 8⅝ in. outside diameter at 25 lbs. per foot—Copper Bearing steel pipe.

Gate Frames—2 in. outside diameter Copper Bearing steel pipe at 2.72 lbs. per foot.

Miscellaneous Fittings—Malleable Iron, Steel, Aluminum, Brass, Bronze or Zinc.

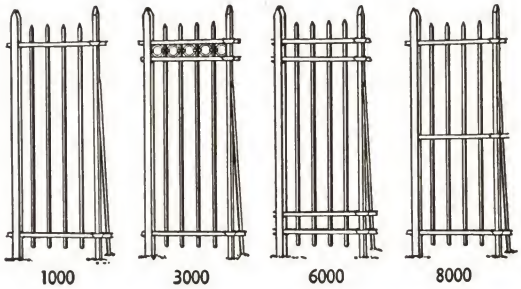
Galvanizing—Hot galvanizing of the best commercial grade and quality but not equal to the P-12.

Note: For detailed specifications write to nearest District Sales Office.



Page Genuine Wrought Iron Fence

Below is shown a direct comparison of a few of the various standard styles of Page Wrought Iron Fence. By using different types of line, terminal and newel posts, a wide assortment of different fences is made available. Should your plans require some other design, prices and details will be furnished on receipt of complete drawings.



PAGE PANEL PARTITIONS

For inside protection in warehouses, stores, garages, shop superintendents' offices, etc., Page Panel Partitions are unsurpassed in the provision of stock control, light, ventilation or full vision.

Page Panel Partition fabric is of 1½ in. square mesh, 10-gauge. Frames are of channel iron (½x1x⅛ in.) braced crosswise with ⅜-in. diameter rods. Panels come complete with fittings, and painted black. Interchangeability permits removal or relocation with 100% salvage value.

Units 4x8 ft. finishing 8 ft. 3 in. high. Additional stock widths: 3, 2 and 1 ft. Doors, sliding or swinging, as specified, are in two widths, 4 and 8 ft.

THE STEWART IRON WORKS COMPANY, INC.

(ESTABLISHED 1886)

Manufacturers of Iron and Wire Fence, Grilles, Railing, Window Guards, General Iron, Bronze, Brass and Wire Work

505 Stewart Block, CINCINNATI, OHIO

Products

Plain and Ornamental Iron Fences and Gates; Chain Link Wire Fences and Gates; Iron Railings, Grilles, Bracket and Pier Lanterns, Window Guards, Wire Mesh Partitions, Folding Gates, Park Settees; General Iron, Bronze, Brass and Wire Work. For our page on Jail and Prison construction, see File Index.

Stewart IRON and WIRE FENCES

"World's Greatest Fence Builders Since 1886"

Stewart Designing and Drafting Service is available to aid in the adaptation of Stewart Products to architects' designs. We manufacture a wide range of standard designs, or create specific patterns to meet exacting requirements. Catalogs listed at bottom of next page will be sent on request. Sales and Erection Service in principal cities.

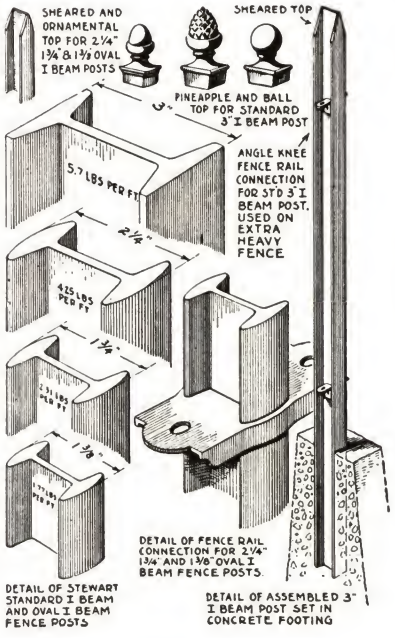
Plain and Ornamental Iron Fences and Gates

Stewart line of fence posts are built of I-beam sections and, except for the heaviest fences, with the Stewart Oval-Back-I-Beam. These sections offer maximum strength per pound of material, are open and easily painted and require *no* back bracing.

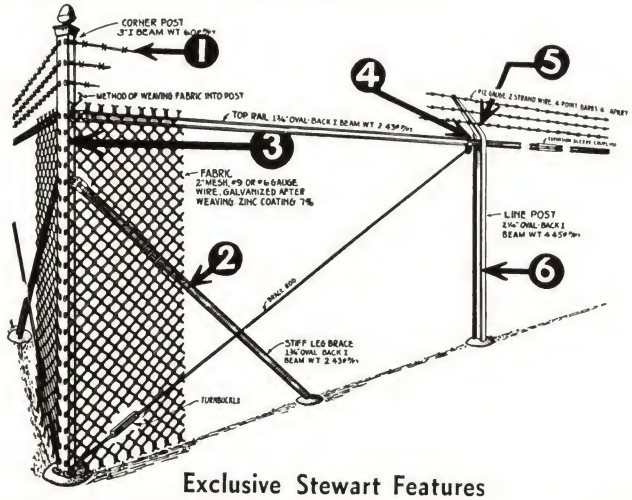
As will be noted in illustration to right, Stewart Oval-Back-I-Beam fence posts are available in three sizes. Note particularly the weight of each of these sections.

Further note slip-over type of rail connection which provides for lengthwise adjustment as well as for expansion and contraction. A set screw arrangement allows the connection to be raised or lowered for adjustment.

Standard designs of post caps are shown above. For practical economy, posts with sheared tops can be used.



Chain Link Fence is available in heights and sizes to meet any known requirement for property protection.



Exclusive Stewart Features

(1) 12-gauge double galvanized copper bearing steel barbed wire with 14-gauge aluminum barbs spaced 4 in. apart. Securely fastened to flange of beam post.

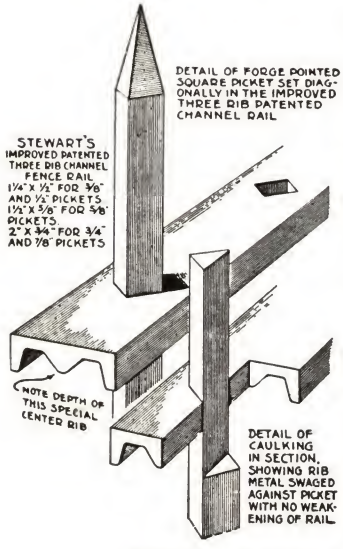
(2) Stiff leg bracing as used for fences 6 ft. high or higher. Set into concrete footing with an auxiliary ⅜-in. round truss rod.

(3) Fabric spirals through slots in terminal posts. Such construction eliminates need for bolts, bands, tension bars.

(4) Beam top rail passes through line posts and forms brace the full length of fence line. Adjustable expansion sleeves used to connect sections of top rail.

(5) Beam line posts with integral extension arm. Obviously superior to posts requiring separate pressed steel extension arms.

(6) Oval-Back-I-Beam section takes its shape from rolls owned by this company. Designed primarily for fence use; strongest at points of strain.



Improved Patented Channel Rails

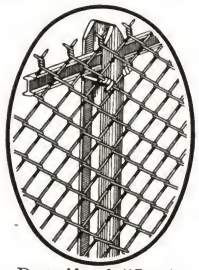
Recently redesigned and now furnished with deeper flanges and a heavier center rib. Obviously stronger than a commercial channel or flat bar for the center rib affords extra material at the point of caulking.

Pickets are round or square in ⅜, ½, ⅝, ¾ or ⅞-in. sizes, or heavier if required.

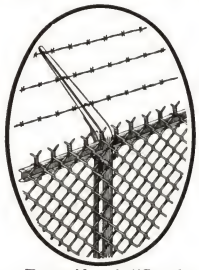
Stewart recommends caulked picket construction, but for installations requiring it, welded picket construction can be furnished with each picket electrically welded in place. Adjustable center supports for the panels of iron fence are furnished as a part of standard construction.

Chain Link Wire Fences and Gates

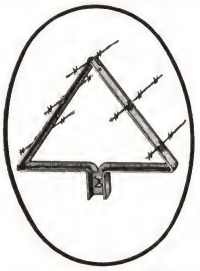
Stewart is the only manufacturer offering a *beam* type of framework throughout in Chain Link Fence construction. Our



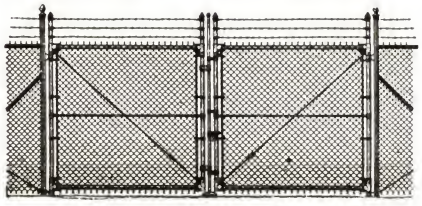
Detail of "Style 0TH." Also furnished in Medium Weight Construction known as "Style OTM"



Detail of "Style 3TH." Also furnished in Medium Weight Construction known as "Style 3TM"

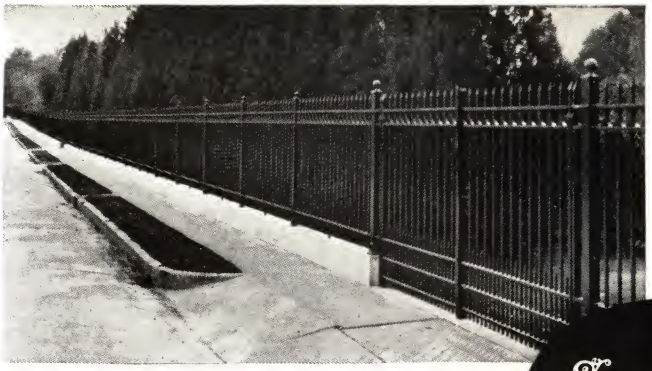


Detail of "Style 5TH Extension Arm." Also furnished in Medium Weight Construction "Style 5TM"



Swing Gates

Swing gates, single or double, are furnished in two specifications. "H.W." with 2-in. o.d. pipe. "M.W." with 1⅝-in. o.d. pipe. Assembled with pressed steel fittings. Securely braced and trussed. Slide gate specifications upon request.



Standard Iron Fence Design No. 116-S. Three rails, square pickets with ring ornamentation between upper rails

Stewart Iron and Wire Fences



Stewart installation Style 3TH at the plant of Hiram Walker & Sons, Inc., Peoria, Ill.



Special design Ornamental Entrance Gates at the estate of H. Lutcher Brown, San Antonio, Tex.



Another Stewart industrial installation. This shows Style 5TH erected at Springfield, Mass.

STEWART PLAIN AND ORNAMENTAL IRON AND WIRE WORK

Co-operative Designing Service to Architects



Design M-305

Balcony and Stair Railings

Interior and Exterior

Stewart furnishes plain or highly ornate railings. Available in a variety of finishes including dull black, Swedish iron, polished Swedish iron, antique rust, etc. Railing catalog upon request.



Design M-317

Ornamental Lanterns

Bracket and Pier

Lanterns available in Iron, a combination of Copper and Iron and a combination of Copper and Bronze. Furnished in a variety of attractive finishes. Write for literature. At left Design No. M-317: over-all width 18 in., over-all height 39 in. At right Design No. M-319: over-all width 17 in., over-all height 36 in. Extension 15 in. from wall to center of lantern.

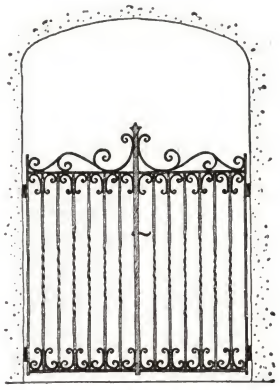


Design M-319



Window Guards, Grilles, etc.

Available with or without ornamentation. Made from ⅜ to ¾-in. round or square pickets. When requesting prices, indicate width and height of opening. Design shown is No. 241.



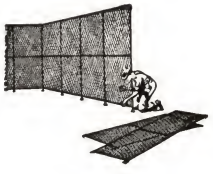
Wrought Iron Gates

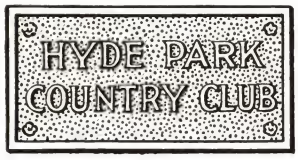
Interior

Decorative Wrought Iron Gates are available in period or modernistic designs as preference dictates. Illustration shows one standard design. Please state size of door openings and furnish sketch showing conditions. Illustration shows design L-961.

Wire Mesh Partitions

Stewart Sectional Wire Partitions are complete with standard panels and may be interchanged or rearranged at any time. Standard partitions are made of 1½-in. diamond mesh 10 W.&M. gauge wire of best open hearth steel. Other wire and mesh can be furnished. Write for Bulletin W-35.





Bronze Tablets

Stewart Bronze Tablets, of hand-chased cast bronze, are imperishable. Made of genuine virgin-bronze castings and positively free from imperfections. Sketches and estimates upon request. When requesting prices, furnish all details possible.

SCHEDULE OF CATALOGS AVAILABLE

If interested in Iron Fence, Iron Entrance Gates, Gateway Arches, etc., ask for Catalog No. 76.
If interested in highly ornamental Iron Fence, or Gates, ask for "Book of Design D."
If interested in Chain Link Wire Fence or Gates, ask for Catalog No. 79.
If interested in Railings, Lanterns, Interior Gates, etc., ask for Catalog R-38.
If interested in Window Guards, Wire Mesh Partitions, etc., ask for Catalog W-35.

WICKWIRE SPENCER STEEL COMPANY

Manufacturers of Chain Link, Wire and Iron Fences and Gates

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Products

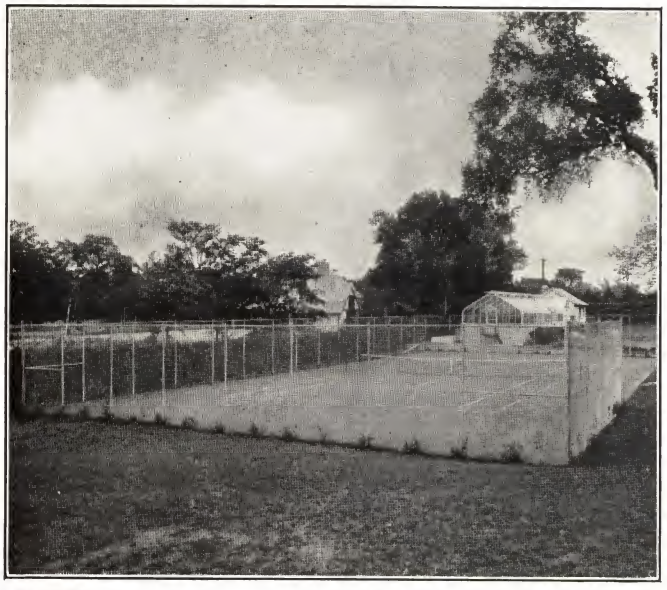
CHAIN LINK FENCES and GATES.

Also Ornamental Iron Fences and Gates.

For our pages on Electrically Welded Wire Fabric for concrete reinforcement, Woven Wire Lath, Metal Grilles, and Radiator Enclosures, see File Index.

Advisory and Erection Service, Estimates, etc.

Engineers, architects and contractors are invited to write our Service Department at any of the offices for any assistance in helping to solve their fence problems. We will furnish estimates in accordance with all standard specifications, engineer's or architect's designs or any special design.



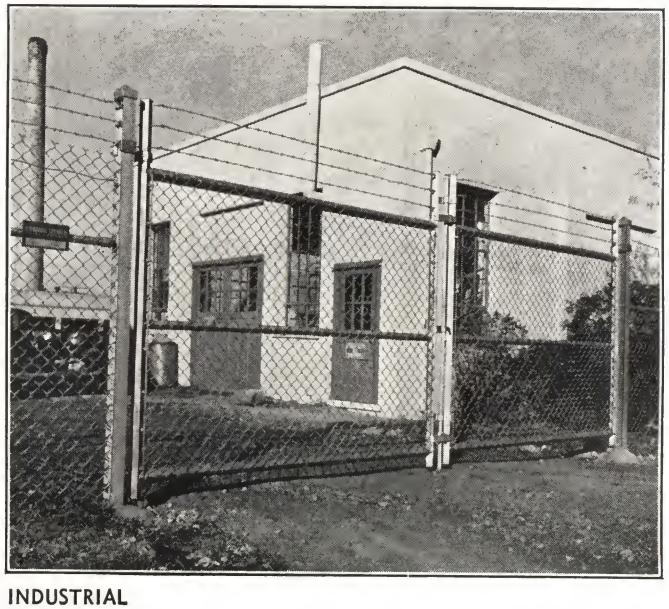
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Metal Ventilating Window Frames
Heavy Steel Windows
Litter Carriers
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Door Hardware
Steel Columns
Cast Iron Feed Boxes
Corner Hay Racks
Feed Panels
Window Guards
Tail Rails
Grilles

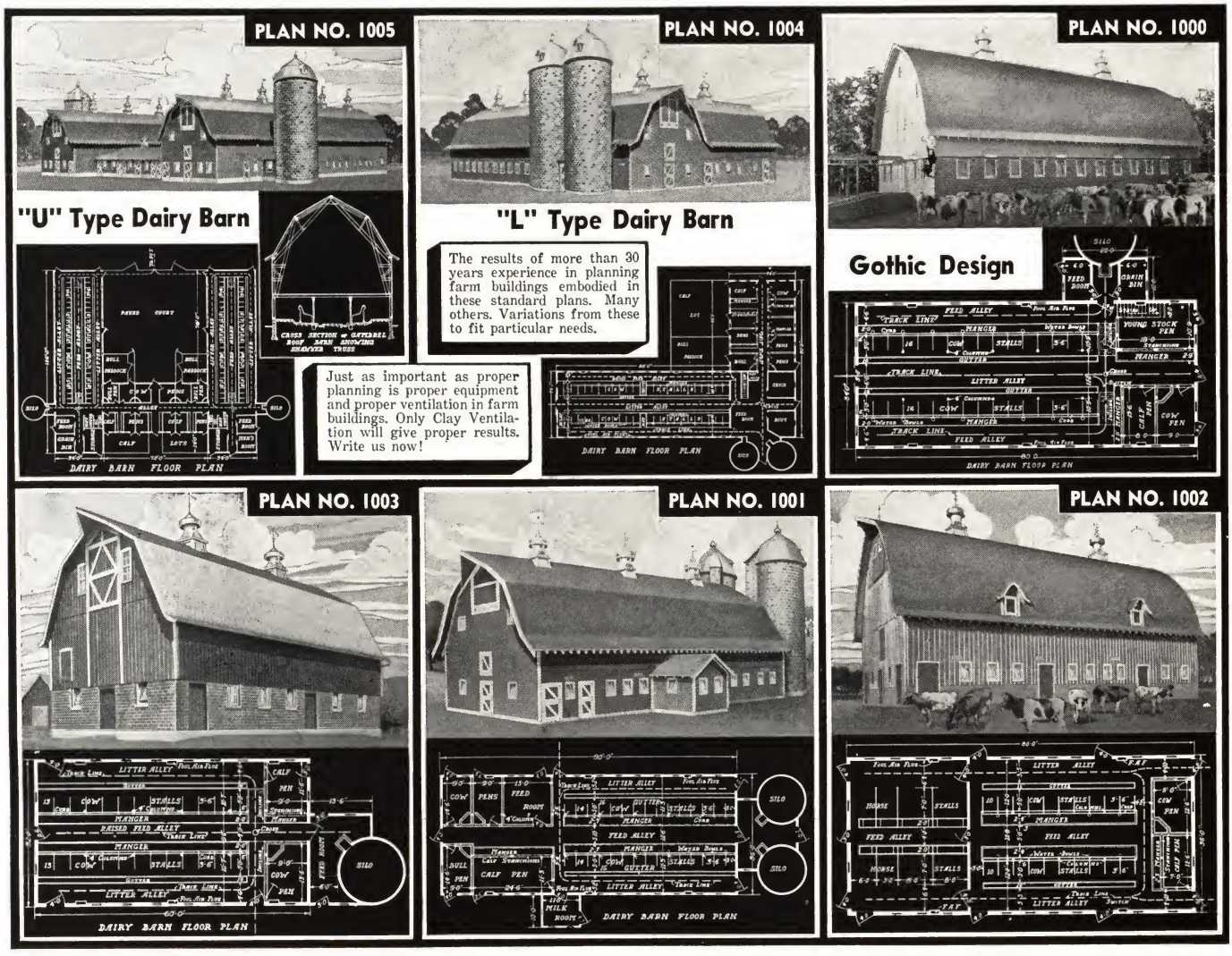
Architectural Service

We cooperate with architects everywhere with plans and Engineering Service. Over 30 years' experience in building equipment for barns, horse stables, hog houses, and poultry houses is at your disposal. The following new catalogs are available. Write for your copy.

Catalog No. 24A—Barn Plans and Equipment, Horse Stable Equipment, Windows and Ventilation.

Catalog No. 24B—Poultry House Plans and Equipment.

Catalog No. 24C—Hog House Plans and Equipment.



ESTABLISHED 1867

THE LOUDEN MACHINERY COMPANY

Modern Barn Equipment and Ventilating Systems

174 Broadway, FAIRFIELD, IOWA

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TOLEDO, OHIO, 2294 Albion Street

DISTRIBUTORS

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KANSAS CITY, MO., Harbison, Inc., 11th and Mulberry Streets
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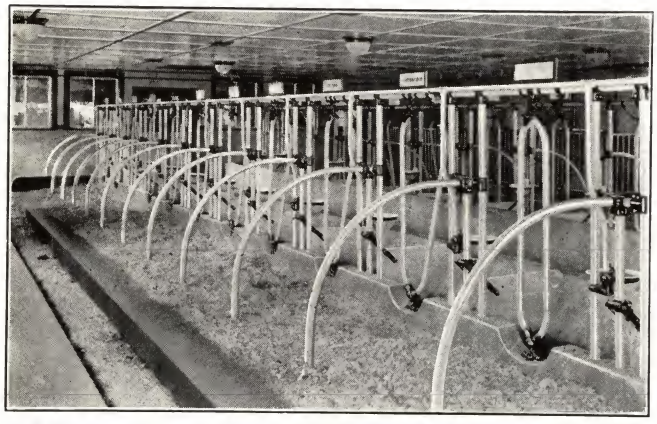
Products

Complete EQUIPMENT for COW BARNS, HORSE BARNS and HOG HOUSES, including:

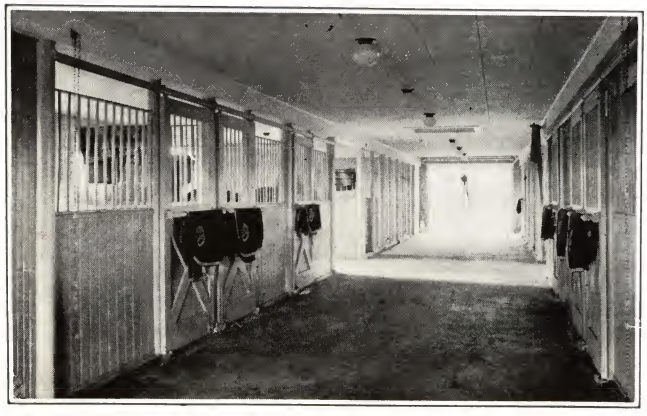
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- Milking Parlor Stalls
- Steel Pens for Cow, Calf and Bull
- Water Bowls
- Manger Divisions
- Manure Carriers
- Feed Carriers
- Feed Trucks
- Swinging Cranes
- Manger and Gutter Drains
- Cork Brick-Wood Block
- Horse Stable Equipment
- Hog House Equipment
- Roof Windows
- Cupolas
- Hay Unloading Tools
- Barn Door Hangers
- Garage Door Hangers

VENTILATING SYSTEMS:

For barns, hog and poultry houses. Two types—gravity and electric. Fully described in new Ventilation Book.



Stall Section of Louden Equipped Dairy Barn at Masonic Home Farm, Charlton, Mass.



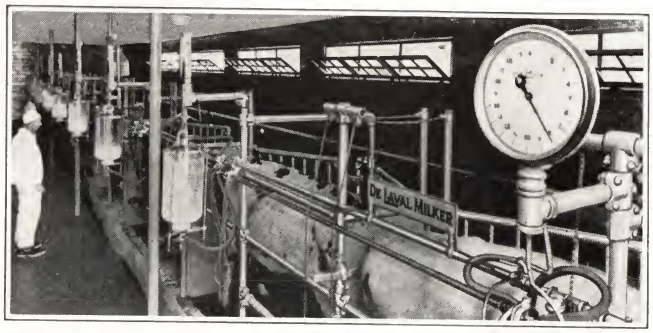
Louden Equipped Horse Stable of H. V. Foster, Bartlesville, Okla.

Service

Louden Field Engineers are at your call for consultation on arrangement, ventilation, or equipment. If desired, they can render immediate service by preparing suggestive plans.

Our Engineering Department will work in conjunction with architects, to any extent, or will assume entire responsibility for the preparation of complete plans and specifications.

Send for 160-page catalogue, giving specifications and full information on Louden equipment.



Louden Milking Parlor Stalls at Hampshire Hills Dairy of Whiting Milk Co., Wilton, N. H.



Louden Pens in Calf Barn at Eliada Home Farm, Asheville, N. C.



Sanitary Louden Equipped Hog House at the Allen County Farm, Ft. Wayne, Ind.

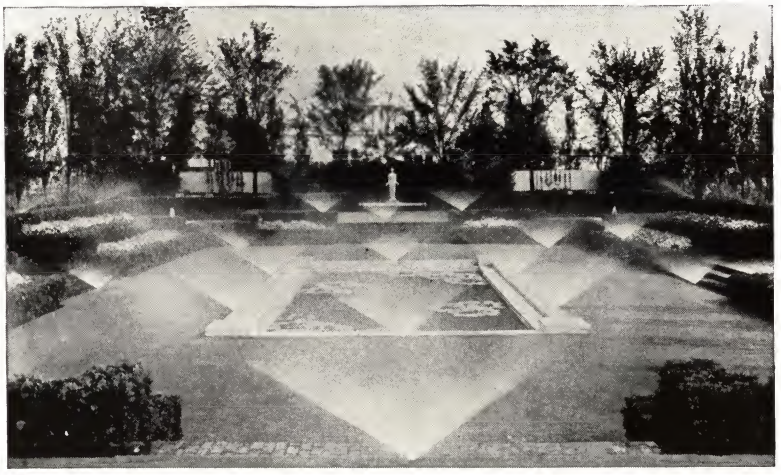
MUELLERMIST IRRIGATION CO.

CONTRACTING ENGINEERS AND INSTALLERS OF

Underground Lawn Sprinkling Systems, for Small Homes, Estates, Parks, Cemeteries and Golf Courses

MAIN OFFICE—5707 West Lake Street, CHICAGO, ILL.—TELEPHONE Austin 7806

A modern garden sprinkled the modern way



Good Housekeeping Garden at A Century of Progress Chicago, 1934

PLAN FOR AN UNDERGROUND LAWN SPRINKLING SYSTEM WHEN BUILDING OR REMODELING A HOME

It is a necessary improvement to keep up the appearance of home, estate, institutional or industrial grounds. It saves time, water and lawn-upkeep expense.

A LIFETIME PRODUCT

Installed with copper pipe, soldered fittings and automatic drain valves. Can be controlled manually or automatically. Installed by skilled union workmen.

SERVICE AND GUARANTEE

Systems are serviced free of charge for a period of one year, with an additional guarantee against defects in material and workmanship for a period of five years.

TYPES OF SPRINKLING SYSTEMS

There is a sprinkling system to fit any type of grounds.

Pop-up 20-ft. Spacing Spray Heads—All Degrees of a Circle



Pop-up 20-Ft. Spray Heads

Are best suited for small residence grounds, formal gardens and around buildings, drives and walks of estate grounds. There should be not less than a 1-in. service available to supply them.

Pop-up Low Consumption Spray Heads 20-ft. Spacing



Pop-up Long Range Spray Heads

Best suited for a small home with a ¾-in. water supply. They are also best for slopes, steep terraces and heavy clay lawn and garden areas.

Pop-up Long Range Spray Heads

These heads are especially suited for large estates, parks, institutional and industrial grounds. A large supply of water is always necessary where the grounds are quite extensive.

Snap Valve Water Outlets



Snap Valve with Long Range Sprinkler Connected

Into these are coupled long-range sprinklers for cemeteries, golf courses and large estates. The sprinklers are movable from one snap valve outlet to another; thus with a small number of sprinklers it is possible to cover many acres.

FOR THE HOME IN CITY OR VILLAGE

Even though a sprinkling system is not planned for immediate installation, a water service should be run from the established stub at the buffalo box into the building, according to the following for frontage scale:

Lot 40 ft. and under—1-in. main	80 ft. to 150 ft.—2-in. main
Lot 40 ft. to 60 ft.—1¼-in. main	150 ft. to 300 ft.—3-in. main
Lot 60 ft. to 80 ft.—1½-in. main	300 ft. and over—4-in. to 6-in. main

The only difference in cost between a large main and a small one is in the material. The labor will remain the same. The larger tap in the street and the service to buffalo box can be made when system is installed.

On the other hand, if a small service is originally installed and some time later a sprinkling system is wanted, it will be necessary to put in a new main; thus the original cost is lost entirely. In such an event, someone is blamed for short-sightedness.

In locations where no municipal water supply is available, a well should be drilled with discharge comparable to flow of water from above pipe sizes at approximately 35 lb. pressure. If sprinkler demand is too great, pump from well into large storage tank or pool. Repump water in volume desired for sprinkling system.

PLANS AND ESTIMATES

Inquiries addressed to our office will receive immediate attention. Expert advice with estimates will be furnished upon request.

MEMORANDA

P. O. MOORE, INC.

300 Fourth Avenue, NEW YORK, N. Y.

DISTRIBUTORS IN PRINCIPAL CITIES

KEY CABINETS AND KEY CONTROL SYSTEM

Many millions of dollars are spent annually for locks and keys.

In the modern office building, the hospitals for hundreds of patients, or the schools for thousands of pupils, the problem of maintaining these locks and handling and controlling the keys is a major problem *if the original value and purpose of the locks is to be preserved.*

Demands have been made for a better, a more comprehensive and systematized method of housing and control than the old "key rack"; for a simple, easily operated system that will eliminate the confusion and lack of control of older methods and reduce the rising costs of lock maintenance, variously estimated at from 50c to $1.50 per lock per year during the life of the building. TelKee is offered in response to this demand and as a solution of these problems.

PRESERVING THE VALUE AND PURPOSE OF LOCKS

TelKee places the entire key control, preferably, in the General Executive Offices. Here, in cabinets, are kept (1) a reserve pattern or record key to every lock in the building or buildings; (2) all duplicate keys not issued to departments, employees or tenants; (3) signature receipts for all keys issued; (4) cross indexes for efficient handling.

It controls—from the Executive Offices—complete supervision of keys, their issuance to departments and individuals, their recovery and the ordering of necessary duplicates. This control not only includes room and entrance keys, but is easily extended to control keys to all lockers, files, desks, cabinets and similar locked equipment.

Visible Key Control

TelKee uses the age-old method of handling keys on hooks. No better method has been evolved. But a small label pocket above and behind each hook has been added to positively identify each hook with a definite lock. In it appears a printed number which identifies it with a room or locker number or a numerical cross index. It adds efficiency to visibility.

TelKee in Operation

On each hook of the TelKee System is maintained at all times a record or "Reserve-Pattern" key to each corresponding lock. It is an emergency key and also the original pattern for cutting all additional keys. It is distinguished by an octagonal red fibre marker die-stamped "File key—must not be loaned" and with die-stamped and enameled lock numbers. This marker has a special brass clasp which when locked on the key cannot be removed, except by intentional destruction. The continued possession of this key eliminates 75% of the present cost of maintaining locks.

Duplicate unissued keys are furnished with Duplicate detachable key markers, clover leaf in shape and numbered to correspond to the "Reserve-Pattern" marker for that particular lock.

Printed Receipt Forms with brass Receipt Holders to hang on hooks are furnished for signature receipts of all keys issued for use.



Hook 206: Showing "Reserve-Pattern" Key with permanent Marker attached, and two unissued duplicate keys with temporary Marker attached.

Hook 207: Showing "Reserve-Pattern" Key. Duplicate keys have been issued with no receipt taken.

Hook 208: Showing "Reserve-Pattern" Key, together with Receipt Holder carrying folded Receipt Record for the Duplicate Keys issued.

Indexes are provided for indexing and cross indexing keys alphabetically, numerically and by manufacturer's lock serial number.

Services

As the TelKee System fits into any desired method of controlling keys, and is recommended by the larger lock manufacturers, many architects specify TelKee for inclusion in General or Building Hardware Contract. For their convenience we maintain a service which will render survey of requirements and cost estimates free of charge.

Write for complete catalog with samples of TelKee System Accessories and Specification Form in detail.

Specification (Short)

Contractor shall furnish TelKee Central Key Control equipment, or approved equal, for the housing and control of keys to all locks furnished for this building, including appropriate cabinets of sufficient capacity and with "Reserve-Pattern" permanent locking type key markers, Duplicate Key markers, Receipt Holders with Receipt Forms and alphabetical, numerical and lock serial Cross Indexes.

TelKee is an annual contract item of the Federal Government and is standard in many States and municipalities; it is in use in Office Buildings, Banks, Schools, Hospitals, Hotels, Apartment Houses; wherever locks are used. *See pages 2 and 3 for listing of Typical Installations.*

THESE COMPACT CABINETS MAKE THE TELKEE SYSTEM PART OF THE EXECUTIVE OFFICE

In order that this key control system may be placed in executive offices, TelKee offers a variety of stock cabinets built in high grade furniture steel, to conform with modern office equipment and in individual capacities from 75 to 1400 sets of keys. As many as 1000 sets of keys can be maintained in a space 18x30x12 in.

Standard finish is baked enamel in olive green. Walnut or mahogany finish on order.

All cabinets are equipped with paracentric lock, numerical printed labels for insertion in the label pockets and alphabetical, numerical and lock serial number cross index.

DRAWER FILE CABINET

Specially built in counter height to stand in line with standard office files or to be incorporated in counter equipment. If desired, a sanitary base brings it up to four-drawer letter file height.

Panel drawers operate on roller bearing progressive slide suspensions. Unit paracentric pilaster lock controls all drawers.

Six-panel drawers are equipped on the sides with a special device to hold panels firmly in a 45 degree angle position to enhance visibility but permit them to be rocked forward on the bottom edges to a vertical position for convenient handling of keys. Device allows a flexible build-up capacity from a minimum of 4 panels per drawer to a maximum of 12. Each panel is equipped with 2 staggered rows of 10 each combination hook-and-label pockets.



Index drawer has a visible card index panel furnishing 3040 single space typewritten listings each for alphabetical, numerical and lock serial indexing.

Capacity, sets of keys	Number of panels	Number of total hooks	Outside dimensions, in.
600	30	600	18 7/8 x 41 x 25 3/4
800	40	800	18 7/8 x 41 x 25 3/4
1000	50	1000	18 7/8 x 41 x 25 3/4
1200	60	1200	18 7/8 x 41 x 25 3/4
1440	72	1440	18 7/8 x 41 x 25 3/4

RECEDING DOOR CABINET

Designed for active use where extreme visibility and accessibility are desired. Doors recede within the sides of the cabinet. With the opening of the doors, the key panel carriage draws forward on progressive roller slide suspension to working position. Spread of panels in full open position is 35 in.

Each panel is equipped with 100 combination hook and label pockets (50 each), except the end ones which are blank on the outside. Flexible build-up capacity by panels from a minimum of six panels (500 capacity) to a maximum of nine 100-hook and two 50-hook panels (1000 capacity). In the panel carriage and below the panels are compartments for cards, extra markers and the cross index book.

Regularly equipped with paracentric key in handle lock, blank or serially numbered hook labels and Cross Index Book.

Designed for use on counter or table.

Catalog No.	Number of panels		Number of total hooks	Outside dimensions, in.
	100 hooks	50 hooks		
PS422	4	2	500	24x33x17 1/4
PS522	5	2	600	24x33x17 1/4
PS622	6	2	700	24x33x17 1/4
PS722	7	2	800	24x33x17 1/4
PS822	8	2	900	24x33x17 1/4
PS922	9	2	1000	24x33x17 1/4

PS stand for use with above cabinet: 24 7/16 x 15 7/8 x 22 1/16 in.

REPRESENTATIVE INSTALLATIONS

Herein is a partial list of the many representative buildings of various types in the United States using TelKee for the protection and control of building keys:

House Office Building Annex, Washington, D. C.
Allied Architects, Washington, D. C., Architects

King County Courthouse, Seattle, Wash.
Henry Bittman, Seattle, Wash., Architect

San Francisco Opera House, San Francisco, Calif.
Arthur Brown, Jr., San Francisco, Calif., Architect

Senate Office Building, Washington, D. C.
Carrere & Hastings, New York, N. Y., Architects

New York Hospital — Cornell Medical School, New York, N. Y.
Coolidge, Shepley Bulfinch & Abbott, Boston, Mass., Architects

Folger Shakespeare Library, Washington, D. C.
Paul P. Cret, Philadelphia, Pa., Architect

James Lick Junior High School, San Francisco, Calif.
Crim, Resing & McGuinness, San Francisco, Calif., Architects

Franklin Junior High School, Brainerd, Minn.
Croft & Boerner, Minneapolis, Minn., Architects

City Bank—Farmers Trust Building, New York, N. Y.
Cross & Cross, New York, N. Y., Architects

General Post Office Building, Washington, D. C.
Delano & Aldrich, New York, N. Y., Architects

Union Guardian Trust Building, Detroit, Mich.
Robert O. Derrick, Detroit, Mich., Architect

Ohio Wesleyan University, (Edward Gymnasium) Delaware, Ohio
D'Oench & Yost, New York, N. Y., Architects

Ramsey County Courthouse, St. Paul, Minn.
Ellerbe & Company, St. Paul, Minn., Architects

London Terrace Apartments, New York, N. Y.
Farrar & Watmough, New York, N. Y., Architects

Tudor City, New York, N. Y.
Fred F. French Company, New York, N. Y., Architects

United States Supreme Court Building, Washington, D. C.
Cass Gilbert, New York, N. Y., Architects

Indiana University, Union Building, Bloomington, Ind.
Granger & Bollenbacher, Chicago, Ill., Architects

Newark School of Industrial & Fine Arts, Newark, N. J.
Guilbert & Betelle, Newark, N. J., Architects

Criminal Courts Building, Chicago, Ill.
Eric E. Hall of Hall, Lawrence & Ratcliffe, Inc., Chicago, Ill., Architects

National Newark & Essex Bank, Newark, N. J.
Halsey, McCormack & Helme, Inc., New York, N. Y., Architects

National Geographic Society, Washington, D. C.
Arthur B. Heaton, Washington, D. C., Architect

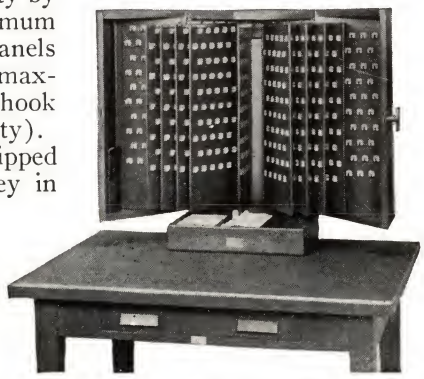
Northwestern Mutual Life Insurance Co., Milwaukee, Wis.
Holabird & Root, Chicago, Ill., Architects

McGraw Hill Publishing Co., New York, N. Y.
Raymond Hood Godley & Foulihoux, New York, N. Y., Architects
Philadelphia Savings Fund, Philadelphia, Pa.
Howe & Lescaze, Philadelphia, Pa., Architects
Roosevelt High School, Los Angeles, Calif.
Sumner P. Hunt, Los Angeles, Calif., Architects
S. S. Kresge Administration Building, Detroit, Mich.
Albert Kahn, Inc., Detroit, Mich., Architects
Shell Building, San Francisco, Calif.
George W. Kelham, San Francisco, Calif., Architects
Marquette University, Milwaukee, Wis.
Kirchhoff & Rose, Milwaukee, Wis., Architects
The Dallas Gas Co., Dallas, Tex.
Lang & Mitchell, Dallas, Tex., Architects
Fox-Wilshire Theatre, Los Angeles, Calif.
S. Charles Lee, Los Angeles, Calif., Architect
University of Southern California, (Doheny Library) Los Angeles, Calif.
Samuel E. Lundeen, Los Angeles, Calif., Architects
St. Louis Globe Democrat, St. Louis, Mo.
Mauran, Russell & Crowell, St. Louis, Mo., Architects
Bellevue Hospital, Psychopatic, New York, N. Y.
Charles B. Meyers, New York, N. Y., Architect
Pacific National Bank Building, San Francisco, Calif.
O'Brien Bros. & Peugh, San Francisco, Calif., Architects
College of the City of New York, New York, N. Y.
George B. Post & Sons, New York, N. Y., Architects
National Archives Building, Washington, D. C.
John Russell Pope, New York, N. Y., Architect
Rockefeller Center, Radio City, New York, N. Y.
Reinhard & Hofmeister, Harrison & MacMurray (Assoc.), Hood & Foulihoux (Assoc.), Architects
Sterling Memorial Library, (Yale University) New Haven, Conn.
James Gamble Rogers, Inc., New York, N. Y., Architects
Downtown Club, New York, N. Y.
Starrett & Van Vleck, New York, N. Y., Architects
Prudential Insurance Co., Ironbound Development, Newark, N. J.
Edmond C. Stout, Newark, N. J.
Hotel New Yorker, New York, N. Y.
Sugarman & Berger, New York, N. Y., Architects
Harbor View Hospital, Seattle, Wash.
Thomas, Grainger & Thomas, Seattle, Wash., Architects
Hunter College, New York, N. Y.
Thompson, Holmes & Converse, Inc., New York, N. Y., Architects
National Red Cross Office Building, Washington, D. C.
Trowbridge & Livingston, New York, N. Y., Architects
One Wall Street—Irving Trust Company, New York, N. Y.
Voorhees, Gmelin & Walker, New York, N. Y., Architects
Federal Reserve Bank, Pittsburgh, Pa.
Walker & Weeks, Cleveland, Ohio, Architects
New State Capitol, Baton Rouge, La.
Weiss, Dreyfous & Seiferth, Inc., New Orleans, La., Architects
Department of Commerce Building, Washington, D. C.
York & Sawyer, New York, N. Y., Architects
Jersey City Medical Center, Jersey City, N. J.
John T. Rowland, Jersey City, N. J., Architect

HIGH TABLE CABINET

Designed as a less expensive cabinet than the Receding Door model—but with all its features of extreme visibility and accessibility. Specially designed triangular shaped double doors that swing from rear hinges and include the sides of the cabinet. Doors. fully opened, spread 39 in.

Panels swing on pin and socket bearings and are equipped with 100 combination hook and label pockets. Each side of the cabinet which swings with the doors is equipped inside with 50 hook and label pockets. Flexible build-up capacity by panels from a minimum of four 100-hook panels (500 capacity) to a maximum of nine 100-hook panels (1000 capacity).



Regularly equipped with paracentric key in handle lock, blank or serially numbered labels and cross index book.

Designed for use on counter or table but is rigidly reinforced to be *attached to wall if desired.*

Catalog No.	Number of panels		Number of total hooks	Outside dimensions, in.
	100 hooks	50 hooks		
HT224	4	2	500	18x30½x12½
HT225	5	2	600	18x30½x12½
HT226	6	2	700	18x30½x12½
HT227	7	2	800	18x30½x12½
HT228	8	2	900	18x30½x12½
HT229	9	2	1000	18x30½x12½
HT stand for use with above cabinets.....				20x18x14½ in.

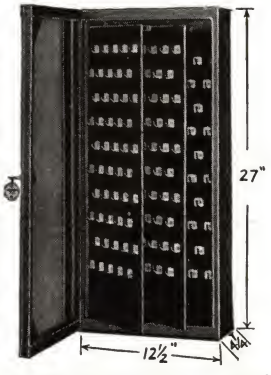
LOW TABLE CABINET

Exactly similar in design to the High Table Model, except in over-all height. Panels have 50 hook and label pockets (25 each side). Insides of doors have each 25-hook and label pockets. Flexible build-up capacity by panels from 300 sets of keys to 500.

Catalog No.	Number of panels		Number of total hooks	Outside dimensions, in.
	50 hooks	25 hooks		
LT245	5	2	300	18x20¾x12½
LT246	6	2	350	18x20¾x12½
LT247	7	2	400	18x20¾x12½
LT248	8	2	450	18x20¾x12½
LT249	9	2	500	18x20¾x12½

WALL CABINET

Fabricated in the same high grade furniture steel as larger cabinets. Fifty-hook panel in the 75-capacity and 100-hook panels in the 150 and 250 capacities. Paracentric key lock 150 and 250 capacities are furnished with a tumble card cross index attached to inside of door. The 75-capacity has an alphabetical sheet index only. Includes labels for insertion in the label pockets.



Catalog No.	Number of panels	Number of total hooks	Outside dimensions, in.
WC75	1 Swinging	75	10 x15x3
WC150	1 Swinging	150	12½x27x5
WC250	2 Swinging	250	12½x27x5

MEMORANDA

VOGEL PETERSON CO., Inc.

Manufacturers of Peterson Checkroom and Wardrobe Equipment

1801 North Wolcott Avenue, CHICAGO, ILL.

Products

PETERSON ALL-STEEL CHECKROOM and WARDROBE EQUIPMENT for clubs, hotels, auditoriums, theaters, museums, churches, schools, banks, stores, offices, hospitals, homes, etc., consisting of Stationary and Portable Floor and Wall Racks; Overshoe, Umbrella and Baggage Racks; Racks for Bathhouse Checkrooms; and Costumers.

T. M. Reg. U. S. Pat. Office

The Peterson One-check Checking System

Advantages—Unlike any other checking system the Peterson One-check Checking System increases speed, eliminates errors and utilizes any given space to provide the greatest capacity. Coats, hats, packages, umbrellas, canes, overshoes are taken care of quickly and accurately with the least possible expenditure of space or effort.

Operation—Each coat goes on its own hanger where it is held in shape; it is not subjected to the damaging results of sagging on an ordinary hook. Each hat has its correspondingly numbered section above the hanger. Canes, umbrellas, rubbers, overshoes or luggage are disposed of with equal care by means of systematically numbered umbrella, overshoe and baggage racks.

Regardless whether one or all of the above items are checked, it is only necessary for the guest or patron to be given one check which identifies every item. Only the Peterson One-check System offers this remarkable service.

Service

Our long experience in solving checkroom problems fits us to plan arrangements which will insure the greatest all-round efficiency. We will gladly submit to architects, gratis, blue prints indicating the most practical checkroom arrangements. Complete catalogue describing the Peterson system and equipment sent on request.

Specifications and Construction Details

Frames—End and intermediate frames are interchangeable and of two-post construction. Posts are No. 18 gauge 1½ in. electric welded square tubular steel. Cross arm shelf supports are No. 15 gauge channel-formed steel to receive ends of shelving. Bases—No. 14 gauge 1½ ins. x 1 in. x 2 ft. ¾ in. enclosed top and four sides, with reinforced welded corners. Bases also equipped with vacuum-cup rubber shoes, eliminating necessity for anchoring. All joints electrically welded.

Shelving—New style dust-free perforated and embossed one-piece steel shelving having ⅝ x ¾ x ⅛-in. hard steel angle reinforcement. Also to this is added a ½-in. steel channel for number strips. Hat dividers at 1-ft. intervals embossed into shelving. Hat spacers have rear as well as side divisions. Coat hanger rail supported independent of shelving, thereby causing no undue strain to that portion of rack.

Wall Brackets—Similar in construction to end frames except having No. 3 gauge back supporting member. All connections electrically welded.

Throughout entire construction of all parts, there are no welded joints that will receive a shearing strain.

Capacity—8 coats and 8 hats per lineal foot of floor type rack.
4 coats and 4 hats per lineal foot of wall type rack.

Hangers—One-piece hardwood hanger. No. 10 hard steel rustless wire. Auxiliary hook below.

Numbering—Large, clear, and legible numeral impressed with heat into white fibreloid.

Hardware—All hardware cadmium plated. Shakeproof washers for all bolted connections.

Finish—Two coats baked-on walnut brown enamel. Any other color by request.

All equipment furnished complete ready for use. *Peterson Checking System is fully protected by U. S. Patent.*



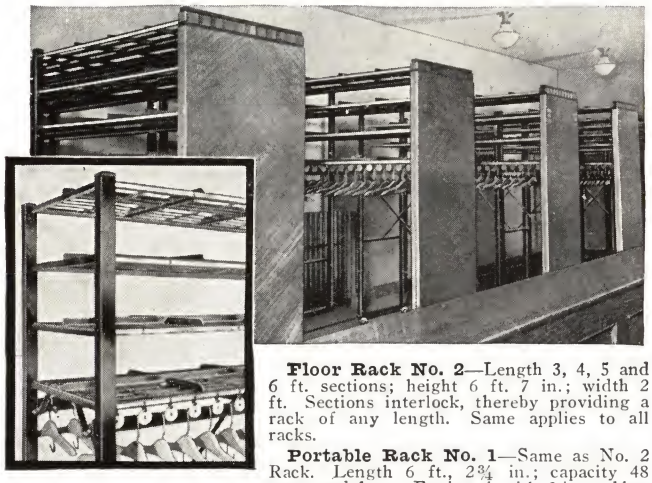
Floor Rack No. 2
(See description in first column)

Left:



Office Rack No. 3U

Sanitary—ends storing of food, old clothing, etc. in lockers. Space saving—3 employees per sq. ft. Durable—rigid steel construction 1½ in. sq. tubular steel uprights. Answers all locker room problems. Standard equipment in leading offices, plants and institutions. Accommodates umbrellas, rubbers as well as coats and hats. Ventilates individual hat spaces. Permanent or detachable wood hangers. Casters or vacuum rubber shoes. Comes by the foot. Single or back to back units.



Floor Rack No. 2—Length 3, 4, 5 and 6 ft. sections; height 6 ft. 7 in.; width 2 ft. Sections interlock, thereby providing a rack of any length. Same applies to all racks.

Portable Rack No. 1—Same as No. 2 Rack. Length 6 ft., 2¾ in.; capacity 48 coats and hats. Equipped with 3-in. rubber tired ball-bearing casters.

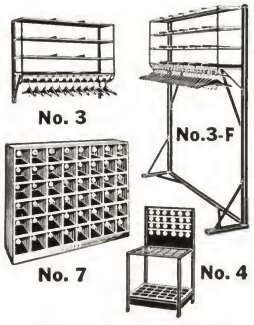
Portable Rack No. 8—Same as No. 1 with wood or steel panel ends. Panel ends to match counter or interior trim; can be furnished for No. 2 racks as per above illustration.

Wall Rack No. 3—Length 3, 4, 5 and 6 ft. sections; width 11 in.; height installed on wall 6 ft. 7 in. Sections interlock.

Wall Rack No. 3F—Same as No. 3 except attached to uprights to stand on floor.

Umbrella Rack No. 4—Height 34¼ in.; width 1 ft., length 1 ft. and up. Capacity 16 umbrellas to each 1 ft. length. Drip pan has brass pet cock for draining.

Overshoe Rack No. 7—Compartments 6 x 6 x 13 in. deep. Standard height 3 ft. 3 in., or made to fit under counters. Can be used as counter. Made in any length.



Write for catalogs

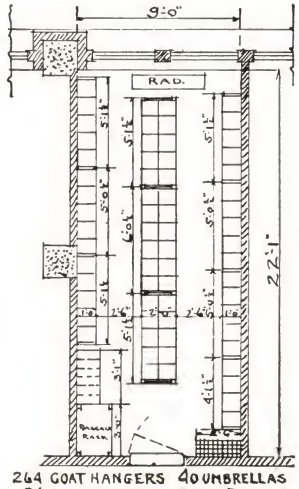


Clothes Closet Racks for the Home

Multiplies closet capacity—saves floor space. With these units, there is a place for everything—coats, suits, dresses, hats, shoes, luggage, belts, ties, etc. Floors are kept free. Racks fold up for cleaning and lift off the wall for decorating. 12 in. deep—lengths to fit closet space. Steel construction. Plated hanger bar. Special features include—solid shoe shelf—ventilated hat shelf with dust cover—non-slipping tie and belt rack and solid storage shelf. Specify, ivory finish or ground coat only.

Partial List of Installations

U. S. Supreme Court, Washington, D. C.
Kansas City Auditorium, Kansas City, Mo.
Radio City Theatres, New York, N. Y.
Civic Opera House, Chicago, Ill.
Hayden Planetarium, New York, N. Y.
Savoy Plaza Hotel, New York, N. Y.
Medinah Club, Chicago, Ill.
East Liberty Presby. Church, Pittsburgh.
Museum of Science & Industry, Chicago.



WHITNEY DUPLICATING CHECK COMPANY

TELEPHONE
LAckawanna 4-6277-78-79

406 West 31st Street, NEW YORK, N. Y.

STANDARDIZED CONSTRUCTION

DeSAUSSURE SINGLE POST COAT ROOM EQUIPMENT

Pioneers and Originators of All Steel Coat and Hat Racks

No Fastening to Wall or Floor — 100% Coats and Hats — Single Post Design

Electrically Welded All Steel Tube and Truss Construction for Strength and Lightness

UNITED STATES PATENT NOS. 1814436, 1835762, 1940584



Type 26

Hook Type Standing Wall Rack (Portable)

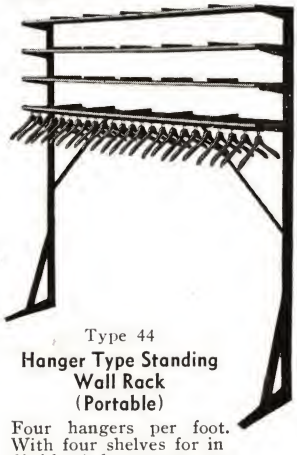
Six hooks per foot. With two shelves for stacked hats. Stands firm without fastening to floor or wall.



Type 44

Hanger Type Floor Rack

With four shelves for individual hat compartments or two shelves for stacked hats. For use with or without casters. 8 hangers per foot. Illustration shows a 12-ft. assembly accommodating 96 coats and 96 hats in individual compartments. Floor space for 12-ft. assembly, 12 ft. 1½ in. x 22 in.



Type 44

Hanger Type Standing Wall Rack (Portable)

Four hangers per foot. With four shelves for individual hat compartments or two shelves for stacked hats. Stands firm without fastening to wall or floor.

Construction Specifications

The supporting post members are interchangeable for end or intermediate position; the construction permitting the introduction of end or intermediate supports at any predetermined position in long assemblies without adding to the lineal length or reducing accessibility of hat or coat spaces at point of support, every inch of space being available for coats or hats.

Posts are 20-gauge 1½ in. square steel tube to which base and cross arms are electrically welded.

Cross arms for supporting shelving are tapered tubular design constructed of an outer and enclosed channel of 20-gauge steel electrically welded so that double thickness of metal is introduced in sidewalls which support the load. Cross arms are slotted to receive the shelf lugs.

Base member is rectangular tube 1½ x 2¼ in. of double channel construction, same as cross arms, with added bracket brace of channel cross section to post. Base is sanitary, flush with floor, and there are no obstructions between posts to interfere with cleaning and sweeping.

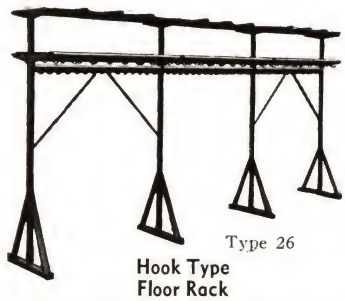
Shelving is dust free, open slat type, spaced to conform with fire laws where sprinkler systems are used. The slats are 2 x ½ in. 20-gauge steel angle, the outer slats being reenforced with 16-gauge hard steel electrically welded to the ½ in. side of the angle. The outside slat has a steel channel added to the ½ in. side to receive the number strip. The construction is reenforced by 12-gauge cross angles spaced to form partitions for hat spaces, and lugs are provided at ends of shelves to engage with slots in cross members of posts. The bottom shelf has a trussed Z-bar in the second slat position, the front edge of the Z-bar being reinforced with 12-gauge steel in which specially shaped openings are provided to receive the coat hanger. Special hard steel angle braces ¾ in. 15-gauge extend from posts to cross braces between Z-bars to hold rack assembly rigid.

Floor Racks, Single Post Type—With four shelves for individual hat compartments or two shelves for stacked hats. For use with or without casters.

Portable Racks—The base member is fitted with receptacles for casters for conversion of any rack to portable type.

Standing Wall Racks—Constructed in exactly the same manner as the floor racks, except that the base and arms for supporting the shelving extend forward only.

Wall Bracket Racks—The brackets are truss suspension type, with the same general construction of hanger rail and shelving as described above with the same feature for intermediate supports.



Type 26

Hook Type Floor Rack

Twelve hooks per foot. Illustration shows a 12-ft. assembly accommodating 144 coats and hats. Made with two shelves only. Floor space for 12-ft. assembly, 12 ft. 1½ in. x 22 in. For use with or without casters.

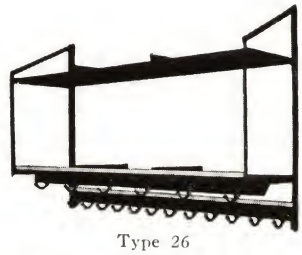


Type 44

Hanger Type Wall Bracket Rack

Four hangers per foot. With four shelves for individual hat compartments, or two shelves for stacked hats.

Height of Type 44 floor and standing wall racks 6 ft. 6 in.



Type 26

Hook Type Wall Bracket Rack

Six hooks per foot. Made with two shelves only, for stacked hats.

Height of Type 26 floor and standing wall racks 6 ft.

Supporting Capacities

Floor Racks—Guaranteed to support 100 pounds per foot on the hanger rail without set or fracture, with supporting members spaced six feet apart.

Standing Wall Racks and Wall Bracket Racks—Guaranteed to support 50 pounds per foot on the hanger rail without set or fracture, with supporting members spaced six feet apart.

Numbering

The separate spaces for coats and hats are numbered on Fiberloid in strip form. The numerals are impressed by a special hot process impregnating the strip with color material. The strips are inserted in a steel channel which is electrically welded to the front edge of the shelving.

Finish

Synthetic Resin lacquer in any desired color. To match your coat room.

SCHEDULE OF DeSAUSSURE RACKS

Type	Style	Checking spaces per unit	Shelves
44	Floor	8 hangers per ft.	4
	Wall	4 hangers per ft.	4
1044	Floor	8 hangers to 10 in.	4
	Wall	4 hangers to 10 in.	4
45	Floor	10 hangers per ft.	4
	Wall	5 hangers per ft.	4
24	Floor	8 hangers per ft.	2
	Wall	4 hangers per ft.	2
25	Floor	10 hangers per ft.	2
	Wall	5 hangers per ft.	2
1024	Floor	8 hangers to 10 in.	2
	Wall	4 hangers to 10 in.	2
26	Floor	12 hooks per ft.	2
	Wall	6 hooks per ft.	2

All racks made in standard sections of from 2 to 6 ft. long in multiples of 1 ft. Sections interlock to provide rack of any desired length.

All racks have clear permanent numbering for each hook or hanger and in 4-shelf racks, each hat compartment is numbered.

All floor racks made portable by inserting rubber tired ball bearing casters.

Standard finish is jade green. Any desired shade or color may be had.

All racks shipped knock down. Quickly and easily assembled.



Umbrella Checking Rack

16 pockets per sq. ft. of floor space. Numbered fibre discs kept in slotted rack, numbered to correspond with pockets below. Designed for speedy service and protection for umbrellas. Drip pan with rubber mat at bottom, removable for cleaning.



Overshoe Rack

For use under counter. All steel numbered compartments. 5 x 5 x 12½ in. deep with check pocket in each compartment.



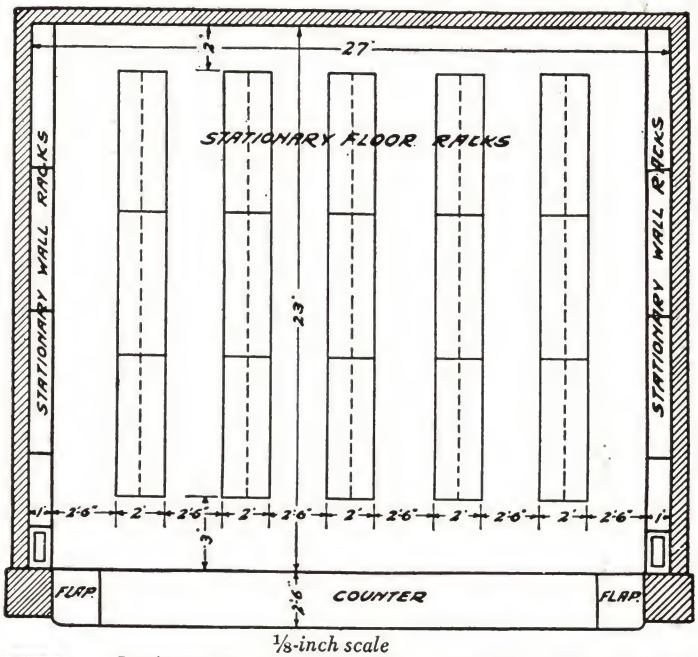
Type HOU

Combination type of rack for overshoes, umbrellas, as well as hats and coats. Ideal wardrobe for offices, stores, etc.

How to Compute the Approximate Checking Capacity of a Room of Given Size

The maximum checking capacity in any room is generally obtained when all the aisle spaces have hangers on both sides. This means that when the space is available, the rows of floor-racks should be flanked with wall-type racks. (See diagram.)

To compute the approximate hanger capacity of a room, take the number of square feet in the room and multiply by 4. Two-fifths of this product represents the average number of hangers which can be placed in the room. This figure is based on two facts: Check-racks have 4 hangers to the square foot of floor space; and the average room is divided into three-fifths aisle space and two-fifths rack space. Of course, figures arrived at by this method are only approximate.



⅛-inch scale

Specimen floor plan designed by our engineering department. To estimate the approximate hanger-capacity of a room like this: (1) Get area of room in square feet (27′ x 23′ = 621 sq. ft.). (2) Multiply this figure by 4 (621 x 4 = 2484). (3) Take two-fifths of this product (⅖ x 2484 = 994) which would give you the approximate hanger capacity. (Add 50% capacity for hook type racks.)

Engineering Service

An experienced engineering department will be glad to prepare blue prints of floor plans (like that shown) with specifications and definite price quotations. You place yourself under no obligation by taking advantage of this service.

A FEW RECENT INSTALLATIONS OF DeSAUSSURE CHECKING EQUIPMENT

Allegheny General Hospital, Pittsburgh, Pa.
American Legation Building, Ottawa, Can.
American Radiator Co., New York, N. Y.
Atlanta University, Atlanta, Ga.
Beacom College, Wilmington, Del.
Berkshire Museum, Pittsfield, Mass.
Brooklyn Masonic Temple, Brooklyn, N. Y.
Chase National Bank, New York, N. Y.
The Cloisters, New York, N. Y,
Community House, Moorestown, N. J.
Cornell University, Ithaca, N. Y.
Federation Bank, New York, N. Y.
First Church of Christ Scientist, Scarsdale, N. Y.
First Methodist Episcopal Sunday School, Greenfield, Mass.
Franciscan Monastery, Brookland, D. C.
Frick Foundation, New York, N. Y.
General Courthouse, Jamaica, L. I., N. Y.
Grade School, Staatsburg, N. Y.
Grand Lodge of Odd Fellows, Baltimore, Md.
Hampshire House, New York, N. Y.
Harvard University, Cambridge, Mass.
Hershey Community, Hershey, Pa.
International Casino, New York, N. Y.
Johnstown Bank, Johnstown, Pa.
Junior High School, Rye, N. Y.
Junior League Club, New York, N. Y.
Longchamps Restaurants, New York, N. Y.
Loyal Order of Moose, Lancaster, Pa.
Marble Collegiate Church, New York, N. Y.
Meadowbrook Hospital, Hempstead, N. Y.
National Broadcasting Co., New York, N. Y.
New York Herald Tribune, New York, N. Y.
New York Historical Society, New York, N. Y.
New York Law School, New York, N. Y.
New York Telephone Building, Brooklyn, N. Y.
New York World's Fair, Flushing, N. Y.
Oklahoma Biltmore Hotel, Oklahoma City, Okla.
Polyclinic Hospital, New York, N. Y.
Public School of Fine Arts, Newark, N. J.
Read's Casino, Asbury Park, N. J.
Reforma Hotel, Mexico City, Mexico
Ritz Carlton Hotel, New York, N. Y.
Rockefeller Center, New York, N. Y.
Rockefeller Institute, New York, N. Y.
Rockland State Hospital, Orangeburg, N. Y.
Roosevelt Memorial, New York, N. Y.
Sacred Heart Auditorium, Fall River, Mass.
St. Agnes Hospital, White Plains, N. Y.
St. Leo's Parochial School, Irvington, N. J.
Savoy Ballroom, New York, N. Y.
Schenley Products, New York, N. Y.
Scottish Rite Temple, Baltimore, Md.
Scottish Rite Temple, Camden, N. J.
Sheffield Farms Company, New York, N. Y.
Soldiers and Sailors Memorial Bldg., Trenton, N. J.
Stouffer's Restaurant, New York, N. Y.
University of New Hampshire, Durham, N. H.
Waldorf Astoria Hotel, New York, N. Y.
Westinghouse Electric & Mfg. Company, Bloomfield, N. J.
Williamsburg Inn, Williamsburg, Va.
Women's College, Greensboro, N. C.
Yale University, New Haven, Conn.
York Club, New York, N. Y.
Y.M.C.A. and Y.M.H.A., New York, N. Y.

ESTABLISHED 1883

CUTLER MAIL CHUTE COMPANY

INCORPORATED 1909

NEW YORK OFFICE
101 Park Avenue

GENERAL OFFICES AND FACTORY
76 Anderson Avenue, ROCHESTER, N. Y.
(Where All Correspondence Should Be Addressed)
AGENCIES IN PRINCIPAL CITIES

CABLE ADDRESS
"Chutler Rochester"

Copyright 1938 by Cutler Mail Chute Company

CUTLER MAIL CHUTES AND BOXES FOR OLD AND NEW BUILDINGS

Buildings May Be Modernized by Installing Cutler Mail Chutes



Model F
Full Story

The Cutler Mail Chute Company specializes in modernizing buildings through the installation of Cutler Mail Chutes. A large number of installations throughout the country in buildings not previously so equipped have been made in the last few months.

Prompt and safe dispatch of the U. S. Mail is a matter of such importance that no single improvement of comparable cost does so much to bring an old building up to modern standards as the installation of a mail chute. The installation is comparatively simple, and does not involve any considerable amount of noise, dirt, or other inconvenience. Less than one square foot of floor space is required and a satisfactory location can almost always be found. There is, in most cases, an actual saving to owners through the reduced use of elevators for the purpose of mailing letters, and a fine bronze Mail Box and Chute is a most attractive feature in any entrance lobby.

FIFTY-FIVE YEARS MAIL CHUTE EXPERIENCE

The Cutler Mail Chute Company since its organization in 1883 by J. G. and J. W. Cutler has been engaged exclusively in the manufacture of the U. S. Mail Chutes and Boxes which constitute the Cutler Mailing System.

CUTLER QUALITY

The highest standards in workmanship, materials and service have been maintained for 55 years and the resulting reputation is this Company's most valued asset. Constant progress has been made and is being made in the design and construction of the Chute and in manufacturing methods. Within the last year or two a number of important developments and improvements have been perfected and patented.

The Cutler factory, built and equipped expressly for the manufacture of Mail Chutes, contains every conceivable device for improving quality and reducing cost, and every phase of factory activity is in charge of men with many years of experience in their particular line of work.

Our draftsmen and engineers, too, have had a wide experience in meeting architects' requirements as to the arrangement of our work and difficult problems of installation.

COMPLETE INSTALLATION AND SERVICE

In all cases the contract for a Cutler Mail Chute covers the work completely installed in the building and the work of installation is done by our own men, trained at the factory and instructed to be satisfied with nothing short of a perfect result.

This well rounded and complete organization is at the disposal of every purchaser of a Cutler Mail Chute from the start of the negotiations until the commencement of the Collection Service by the Post Office Authorities.

UNITED STATES POST OFFICE REGULATIONS

Every U. S. Mail Chute, after the Collection Service has been commenced, is in the "Care and Custody" of the Postmaster. The Postmaster alone has authority to establish Collection Stations and every Mail Chute Contract must be written on a prescribed form with the Post Office Regulations printed thereon and made a part of the contract. Such contracts are, in all cases, written to cover the work complete, except rough floor openings, which are otherwise provided for.

The Regulations of the Post Office Department, under which we operate, are rigidly enforced and we are under bond to observe these Regulations in every particular. A copy of them will be sent on request, or may be obtained upon application to the Department, but we suggest that architects not thoroughly familiar with the rules, consult us as early as possible when there is any question as to the arrangement of the work.

CUTLER MAIL BOXES

Range from our stock boxes of simple but tasteful design, such as the No. 4740 illustrated on the following page, to the most elaborate cast boxes from Architect's special design. We have a large collection of models and patterns and can often suggest semi-special designs in harmony with the Architectural style employed, without the expense of making entirely new patterns.

The Mail Box is a part of the complete Mail Chute installation and must, in all cases, be included under the Mail Chute Contract. We suggest that the Cutler Mail Chute be specified by name in all cases. Estimates will be furnished in advance when desired and, if preferred, a stated sum may be set aside to cover this item.

CUTLER MAIL CHUTES

Model F

The Standard Cutler Mail Chute is known as Model F. The materials used in its manufacture and the finish may be varied, but the construction remains the same in all cases. The "All Black" finish is the least expensive, but Standard Finish costs but little more and is more generally used.

"All Black" Finish—The entire Chute and Box finished in dead black baked enamel.

Standard Finish—Steel Chute channels (sides and back of Chute) and sub-bases in dead black baked enamel; caps, duplex electro-bronze plated; bases, mailing pockets and panel moulding of glass fronts are of bronze, slightly oxidized, of statuary bronze color.

Special Finishes—We are prepared to furnish equipment in a great variety of special finishes when required.

Aluminum and Benedict Nickel materials are carried in stock for this purpose and we have excellent facilities for producing special Baked Enamel finishes of all kinds.

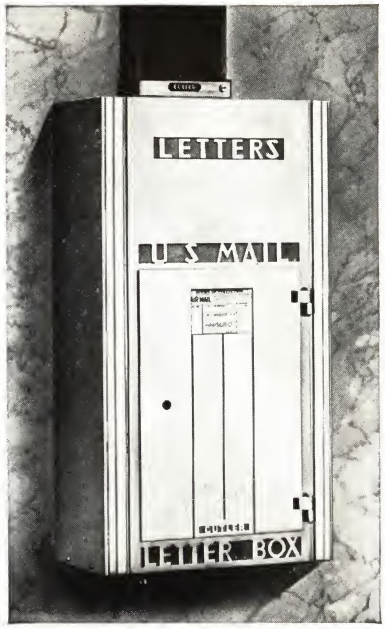
Twin Model F

The Cutler Mail Chute in twin form is the ideal type for large structures.

While the bases, ceiling-collars, etc., are common to both Chutes, producing the effect of a single unit, the fronts may be removed separately.

It is possible to put one Chute entirely out of commission in an emergency, leaving the other in operation. To avoid congestion, it is usual to close the mailing openings on each Chute in alternate stories so as to divide the Mail equally between the two Chutes.

Correspondence as to any feature of Mail Chute practice is invited, and our representatives and agencies in the principal cities will be glad to assist in any way.



Standard Design No. 4740—Bronze, Aluminum or Nickel Bronze

MAIL CHUTE SPECIFICATIONS

The following specification is written to cover a single Mail Chute, but in buildings of large area or more than twelve stories in height, two or more Chutes should be installed.

(1) Mail Chute Equipment—Mail Chutes, where indicated on drawings, shall be the Cutler Mail Chute Equipment. Manufactured and installed complete by the CUTLER MAIL CHUTE COMPANY, Rochester, N. Y., as follows:

(2) Labor and Material—Provide all labor and material required to furnish, deliver and install a Mailing System as indicated on drawings and as hereafter specified.

(3) Rough Openings—Rough openings through floors are not included in the Mail Chute contract, and are otherwise provided for, together with the items of general cutting, and patching and repairing of plaster.

(4) Finish of Floor Openings—Finish the rough floor openings provided by others, to thimbles or sleeves of No. 22 U. S. Gauge cold rolled steel, suitably protected against rust, and furnish and erect a frame of 2x2x$\frac{3}{16}$-in. steel angles, without twists, bends or waves, securely fastened, extending from the top of the Mail Box to a point four feet eight inches (4 ft. 8 in.) above the finished floor in the topmost story to be served, and there finished by neatly mitering and returning the angle across the top. This frame to be plumb and flush in all stories, sufficiently rigid to form a suitable support for the Mail Chute, and painted two coats lead and oil, final finish to be applied by others.

(5) Installation—Furnish and erect on the steel frame described above ..... Mail Chute(s), and ..... U. S. Mail Box(es) to be located in the ..... story; the Mail Chute to be properly connected with and extend from the top of the Mail Box through ..... stories and four feet seven inches (4 ft. 7 in.) into the ..... story, with openings for mail in each of these stories.



Semi Special Design No. 4605—Bronze, Aluminum or Nickel Bronze

(6) Construction—Mail Chute to be constructed of No. 20 U. S. Gauge cold rolled "full finished" steel, formed in channels, with removable panels of $\frac{3}{16}$-in. Rolled Crystal Glass, set in frames of bronze and secured in place by standard U. S. Mail Chute locks with keys in the hands of the Post Office Authorities. Such panels and other parts of the Mail Chute to be so constructed that the panels can be removed and quickly and easily replaced by authorized persons only, without the use of tools or the exercise of mechanical skill, and without injury to the chute structure or finish. Locks to be so constructed that the key can not be removed until the panels are properly replaced and locked in position. Sub-bases of cast iron, or die cast. Other fittings of bronze.

(7) Channels—Channels to have inwardly projecting rib, formed in the metal, to give lateral strength, prevent distortion, and to support panel in proper position, leaving the joint removed from the corner and so protected that mail matter can not enter, and flange extending forward to cover joint between channel and panel. All mailing pockets to have openings for mail 4¾x½ in. with convenient means of opening and closing by authorized persons only, and a second opening of the same size 2½ in. below the first with serrate edges to prevent the introduction of newspapers, folded pamphlets or other improper matter.

(8) Panel Mouldings—Panel mouldings to be designed to fit entirely inside of channels with no lateral projection beyond channel sides and to be drawn or rolled in one piece, of proper temper to insure permanent, dependable contact with inside glass surface.

(9) Penalty Card Holders—Penalty card holders with dust-tight case—bronze frame and glass front—to be provided in every story.

(10) Standardization of Parts—All fitted parts shall be machine made so as to insure standardization in size and form, perfect fit and interchangeability. Floor connection, ceiling extension linings, etc., shall be formed in press and lapped seams rolled tight.

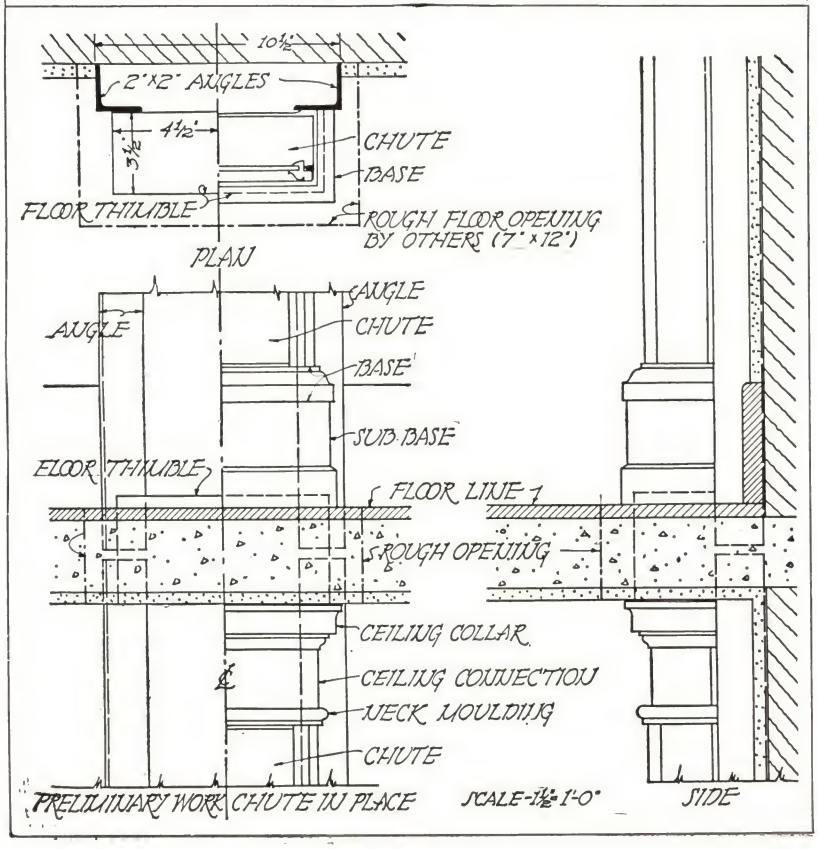
(11) Mail Box—Mail Box to be from design No. ..... of heavy sheet bronze (or aluminum or nickel bronze) with cast bronze door and frame and letter drop and frame. Box to have inscription LETTER BOX——U. S. MAIL cast on, and adjustable frame for bulletin card. Door opening 20x12½. Letter Drop to have the inscription LETTERS in flush lettering. Opening 11x1¼ in. Hinges exposed, with pins riveted and removable in emergency. Bases, cap and neck mouldings of drawn bronze. Design to be in proper Architectural Style, subject to Architect's approval.

(12) Finish of Mail Chute Channels and Sub-bases—Finish of Mail Chute channels and sub-base to be dull black enamel, baked on at 400° F. Bronze of Mail Box and Mail Chute fittings to be slightly oxidized and lacquered.

(13) Approval—Work to be done to the satisfaction and acceptance of the Architects; in strict accordance with the Regulations of the Post Office Department, and installed with the approval of the Postmaster of .....

(14) Guarantee—Any and all defects in workmanship or material developing within two years from date of completion to be made good without charge. The contractor shall furnish a Surety Bond in the amount of $3,000.00, guaranteeing the faithful execution of this contract within the time specified, in full compliance with Order No. 3282 of the Postmaster General.

GENERAL INSTALLATION DETAILS OF CUTLER MAIL CHUTE



CAPITOL MAIL CHUTE CORPORATION

525 Union Avenue, BROOKLYN, N. Y.

AGENCIES IN PRINCIPAL CITIES

CAPITOL MAIL CHUTE MODEL C



Approved by U. S. Post Office Dept. Pat. Nos. 1,785,867; 1,953,485

CAPITOL MAIL CHUTE CORPORATION, is part of an organization of bronze manufacturers who have been doing distinctive bronze and metal work since its inception in 1905.

Products and Service

Manufacture and installation of the CAPITOL MAIL CHUTE and LETTER BOXES for post office collection service throughout the United States and foreign countries. We have facilities for manufacturing special letter boxes to architects' designs.

Post Office Approval

Capitol Mail Chute bears the approval of the Post Office Department, and this company is under $10,000 Surety Bond to strictly carry out the postal rules and regulations.

U. S. Post Office Requirements

Subject to the approval of the postmaster, collections may be made from mail chutes placed in public buildings, railroad stations, hotels, business and office buildings not less than 4 stories high, and apartment houses comprising at least 40 residential apartments. Boxes must be within 100 ft. of the street entrance.

Specifications for the Capitol Mailing System

Furnish and install where shown on the drawings and as hereinafter specified, the Capitol Mailing System as manufactured by the CAPITOL MAIL CHUTE CORPORATION, of 525 Union Avenue, Brooklyn, N. Y.

Preparatory Work—This contractor shall prepare the building to receive the mail chute equipment by furnishing and erecting (.....) frame of 2x2x$\frac{3}{16}$-in. steel angles, securely fastened to wall and through rough openings provided by others. Frame shall extend from the top of the mail box in the (first) story to a point of 4 ft. 9 in. above finished floor in (top) story. At this point the angles shall be neatly mitred and returned across the top. Frame shall be left flush and plumb throughout and sufficiently rigid to properly support the mail chute. Attach thimbles to frames in concrete openings between floors. Frames and thimbles shall be finished with two coats of lead and oil in a dead black.

Mail Chute Erection—Erect on this steel frame the Capitol Mailing System, consisting of—Model "C" Mail Chute and No. (.....) Standard U. S. Mail Box. The mail chute shall be adequately supported by, and fastened to the angle frame, and shall be properly connected with the mail box. Chute shall extend from top of box through . . . . floors and to a point 4 ft. 8 in. above finished floor of (top) story. Opening for mail shall be provided in each story.

Mail Chute Construction—Mail chute to be constructed of No. 20 U. S. gauge cold rolled steel formed in channels with removable panels of ¼-in. plate glass, set in frames of bronze and secured in place with Standard U. S. Mail Chute locks with keys in the hands of the Post Office authorities. Such panels and other parts of the Mail Chute to be so constructed that panels can be removed, and quickly and easily replaced by authorized persons only, without use of tools and without injury to the chute structure or finish. Locks to be so constructed that the key cannot be removed until the panels are properly in place and locked in position. Sub-base of steel, base neck moulding and crown moulding of extruded bronze. Collar and mailing pocket of cast bronze.

Channels—Channels to have inwardly projecting rib, formed in the metal to give lateral strength, prevent distortion, and to support panel in proper position, leaving the joint removed from the corner and so protected that mail matter cannot enter, and flange extending forward to cover joint between channel and panel.

Panel Mouldings—Panel mouldings to be designed to fit entirely inside of channels with no lateral projection beyond channel sides and to be drawn in one piece, of proper temper to insure permanent, dependable contact with inside glass surface.

Penalty Card Holders—Penalty card holders with dust-tight bronze frame and glass front—to be provided in every story.

Mail Pockets—Mail Pockets to have openings for mail 4¾x½ in. Also a second opening of the same size 2½ in. below the first, with serrate edges to prevent introduction of newspapers, folded pamphlets or other improper matter. These openings to have a convenient means of opening and closing by authorized persons only.

Mail Box—Mail Box shall be CAPITOL MAIL CHUTE CORPORATION design No....., size ..... in. wide, ... in. deep and ..... in. high and constructed of (*see description below*).

Finish—All bronze surfaces shall be finished slightly oxidized or statuary bronze color and lacquered as directed. All steel shall be finished in dead black.

Approval—The entire work to be done to the satisfaction and acceptance of the architect in strict accordance with the regulations of the Post Office Department.

Guarantee—The CAPITOL MAIL CHUTE CORPORATION shall furnish a Surety Bond in the sum of Three Thousand Dollars guaranteeing the faithful execution of this contract, and against defects of workmanship and material for a period of 3 years in full compliance with order No. 3282 and No. 3283 of the Post Master General.

STANDARD CAPITOL LETTER BOXES

Box No.	Dimensions in.			Description
	Width	Depth	Height	
402	24	13	40	Box made of extruded metal. Door and frame cast bronze. Usually finished semi-oxidized.
403	21	11	36	Box of No. 14 gauge sheet bronze. Doors of cast bronze. No. 403 has vertical mouldings as shown which can be supplied in contrasting metals.
404	18	11	30	
312	21½	12	37	Boxes made of No. 14 gauge sheet bronze. Door and frame cast bronze and mouldings of extruded bronze. Usually finished semi-oxidized.

CAPITOL STANDARD LETTER BOXES



Capitol Box No. 402



Capitol Box No. 403



Capitol Box No. 404



Capitol Box No. 312

ESTABLISHED 1890

TELEPHONE
WAtkins 9-5050

AKINS SALES COMPANY, INC.

142-148 West 14th Street, NEW YORK, N. Y.

PRODUCTS

Building Directories; Floor Directories; Elevator Directories; Club Rosters; Golf Handicap Boards and In-and-Out Boards; Changeable Bulletins and Announcement Boards; Reflectolite Electric Signs; Cork Bulletin Boards; Floor Directional Arrows.

AKINS TYPE BUILDING DIRECTORIES

Consist of removable strips, machine made with white letters on a black background. The letters are automatically spaced, ensuring perfect alignment. The process used produces an effect of neatness and "class" impossible with handmade strips.

The strips are inserted into a metal back and locked by removable doors of cold rolled steel, fitted with plain or beveled plate glass. In making changes, it is only necessary to remove the doors with a key, leaving all name strips in place, so that operator is always working from the front, making alphabetical mistakes improbable. This method of making changes is a distinct advance over any other system, since it permits changes to be made with one operation, allowing the directory board to be in full use while changes are being made.

Any door may be removed and cleaned without disturbing the balance of directory.

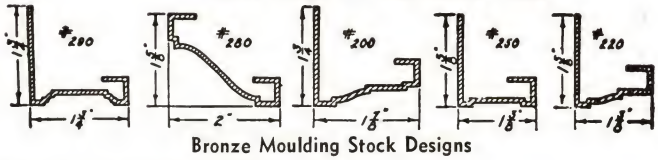


Akins Type Strip Directory
Stock Design No. 226, Bronze Frame

"GREELEY" TYPE BUILDING DIRECTORIES

Offer an individual changeable letter system consisting of a grooved backboard into which individual letters are set and held in place by tongues which slide into the grooves.





Bronze Moulding Stock Designs

SIZE AND NAME CAPACITIES OF AKINS TYPE STRIP DIRECTORIES

Fillers 7½ in. wide x 26 in. high								
Number of fillers.....	2	3	4	5	6	7	8	9
Width, in.	15	22½	30	37½	45	52½	60	67½
Name capacity, ⅜-in.strips	75	125	175	250	300	350	400	450

Fillers 7½ in. wide x 32 in. high								
Number of fillers.....	2	3	4	5	6	7	8	9
Width, in.	15	22½	30	37½	45	52½	60	67½
Name capacity, ⅜-in.strips	125	195	265	335	405	475	545	615

Table figures actual name capacities ⅜-in. strip. Alphabet space allowed.

AKINS SALES CO., INC. 142

⅜-in. Strip, ¼-in. Letters for Akins Type Strip Directory
Actual size shown. Also made ⅝-in. wide with ⅜-in. letters and 5/16-in. wide with 3/16-in. letters

BRONZE TABLETS AND LETTERS

Hand engraved plates.

Electric directional and elevator signs in bronze or aluminum.

Bank teller and wicket plates.

Bronze and copper raised letter assembled signs, consisting of individual bronze letters mounted on oxidized copper background.

Cast tablets of brass, bronze or aluminum.

Incised or cast bronze tablets with inlaid vitreous enamel letters, borders, etc.

Individual letters inlaid with vitreous opaque or translucent enamel; also individual letters of brass, bronze, for building-fronts and similar uses.

Exterior and interior directories for commercial, office or professional buildings, with cast or incised inlaid.



Inlaid Vitreous Enamel Prism Shadow Flat

176J



Cast Bronze
Tooled ground, overdressed crown and bead work. Finish medium statuary

ACME BULLETIN AND DIRECTORY BOARD CORP.

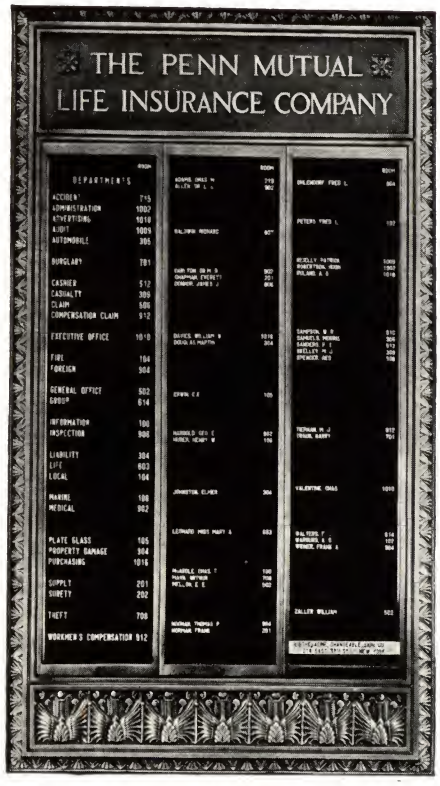
Manufacturers of Changeable Letter and Name Strip Directories, Bulletins and Signs; Embossing Machines, Bronze Tablets

37 East 12th Street, NEW YORK, N. Y.

PRODUCTS

"Acme" Embossing Machine for Directory Board Strips.

Changeable Strip and Changeable Letter Building Directories; Changeable Indoor and Outdoor Announcement Boards; Cork Bulletins; Menu Boards; Statistical Boards; Rosters; In-and-Out Boards; Bronze Tablets, Letters and Desk Plates.



Style No. 2100

ACME STRIP STYLE OR CHANGEABLE LETTER DIRECTORY BOARDS

We are manufacturers of embossed strip style and changeable letter directory and bulletin boards in a wide variety of sizes and models adapted to a wide range of uses. Frames of wood, extruded bronze, solid drawn bronze, cast bronze, kalomeined, chromium plated or in steel and iron can be supplied.

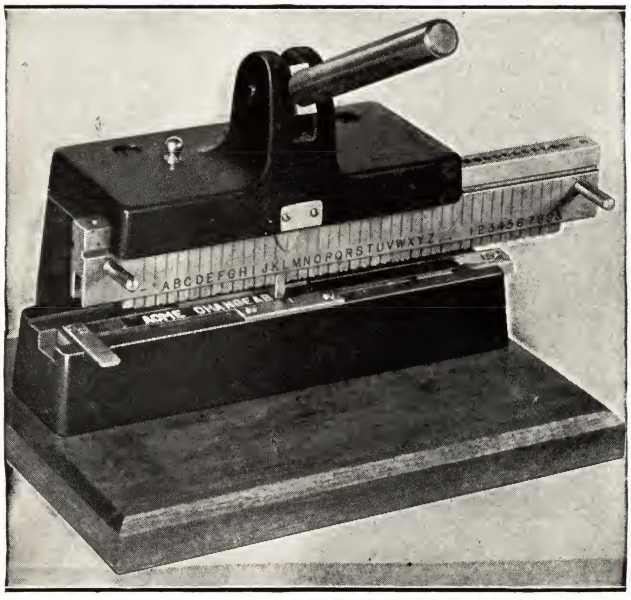
Standard Strips—Acme embossed insert strips are made of heavy fibre board hand covered with dull black paper, lettered white with machine set embossed clear cut type accurately spaced to ensure perfect alignment and a most dignified appearance. The "Acme" embossing method is a special process and guarantees the letters not to fall, curl or peel off.

Strips supplied in heights of ⅝, ⅜ and 5/16 in. The steel panels are accurately grooved for quick and easy insertion of strips.

Changeable letter directory boards are obtainable in a large assortment of sizes —letters in celluloid or metal in sizes ranging from ¼ to 1½ in.

"ACME" EMBOSSING MACHINE

The "Acme" Embosser (*illustrated at left) is a compact, carefully designed, easily operated machine which enables the building owner or superintendent to change names, addresses, etc., on a directory board with a minimum of effort and time loss.



Acme Directory Board Systems Are Part of the Regular Equipment in these Representative Buildings

Equitable Building, 120 Broadway, New York, N. Y.
Graybar Building, 420 Lexington Avenue, New York, N. Y.
Fisher Building, Detroit, Mich.
Department of Commerce Building, Washington, D. C.
Philadelphia Savings Fund Building, Philadelphia, Pa.
Munsey Building, Baltimore, Md.
Forum Investment Company, Sacramento, Calif.
Milam Building, San Antonio, Texas

It is sturdily constructed, employs machine cut dies and provides a uniform, precision made insert for use with the Acme Bulletin and Directory Board of all designs.

Advantages—The "Acme" eliminates the trouble and cost of mailing orders for new inserts and the time subsequently lost in shipping. It provides a permanent means of keeping all directories up-to-the-minute and an inexpensive method of handling the always troublesome problem of temporary changes and shifts.

The "Acme" is practically indestructible, requires no expensive replacement parts and is so simple to use that a child can operate it with perfect results.

Operation—Standard strips, designed to fit standard Acme Directory Boards are supplied by the manufacturer. These strips are of heavy black fibre covered on one side with white paper. Strip is inserted on the stamping bed of the embosser and the carriage, consisting of vertical, spring-loaded dies, is manipulated from right to left lining up the necessary letters beneath the center mark. As the handle is depressed, the centered die cuts a letter from the paper overlay, and, in the same operation impresses and crimps it into the fibre backing. When the necessary word or words are completed, the whole strip is removed and slid into place on the board.

*A sixteen page illustrated catalog will be sent on request.

J. A. WEBER, Pres. & Treas.

TELEPHONE
Longbeach 2030

R. W. CLARK MFG. CO.

EUGENE B. WEBER, V.P. & Secy.

Building Directories and Bulletin Boards

5137 Lincoln Avenue, CHICAGO, ILL.

Products

Building Directories for Lobby or Floors: Clark Liberty (Interchangeable Letter) and Clark Embossed Strip and Gummed Letter Strip.

Also Rosters, Bulletin and Announcement Boards, Desk and Teller Name Plates, and Cork Tack Boards.

Clark Directories

Clark Liberty Directory (Interchangeable Letter)—Little or no up-keep cost; immediate service to tenant; letters and covered strips can be re-used many times; practically same wall space required as for gummed-strip using same size letter. Letters made of best white celluloid under Clark patent.

Embossed Strip and Gummed Letter Strip

Directories—Also sold outright. Strips furnished at low cost. The saving to the owner is about 85% of the annual rental charge. Strips fit easily into groove and are held in position with felt covered back.

Styles and Sizes—All sizes, styles and finishes supplied—ornamental iron, plain or ornamental extruded bronze, wood filled bronze, and wood in either oak, walnut, mahogany or ebony finish.

Standard width of sections: for changeable strip (embossed strip), 7½ in.; for Clark Liberty (interchangeable letter) 7½ in. with ¼-in. letters and 12 in. with ⅜-in. letters. Sections also made 15 in. wide for ½-in. letters.

Any convenient heights can be made.

Catalogue and additional information on request.

Estimates

For all ordinary buildings two names to the room will be the approximate capacity of directory required. In the case of special buildings, more or less, according to purpose of the building.

In writing for estimates, state total number of names board should hold; material; style; finish; and, particularly, available wall space, if limited.

Weber's Front-Change Directory

(Patented)

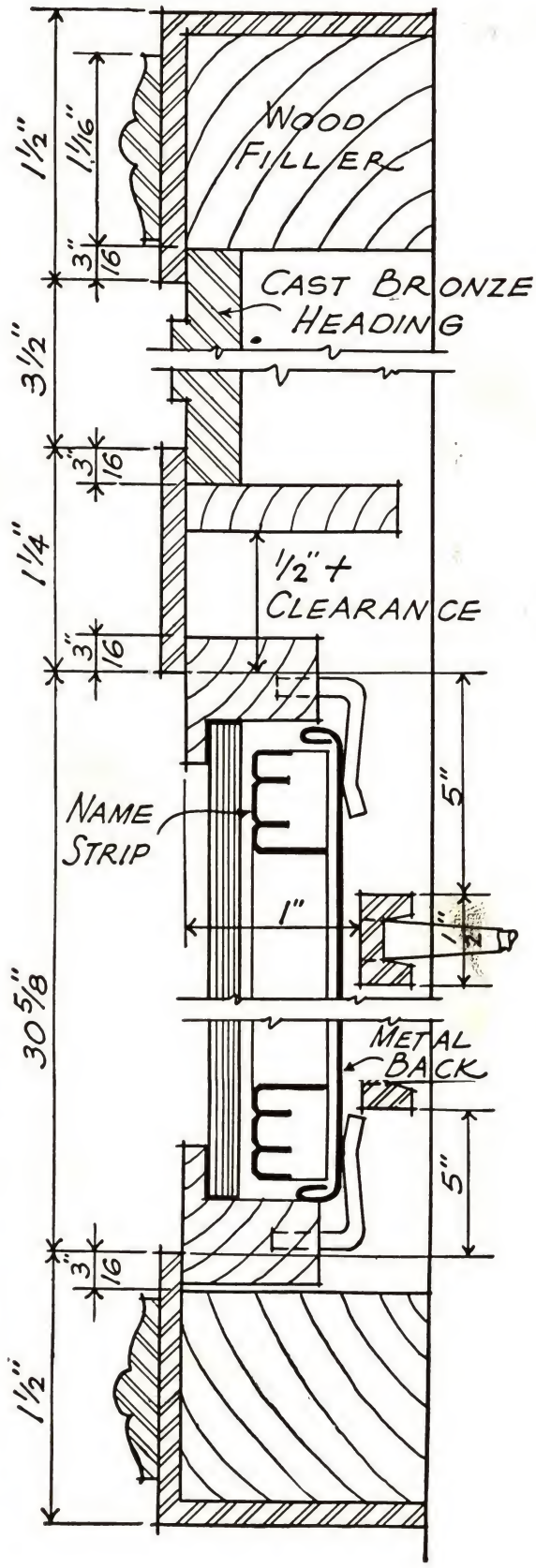
A new feature, combining the advantages of the Clark Liberty Directory with individual strips, and with a glass door, instead of the removable sections. Unit of one or more columns may be placed as such, into suitable frame with glass door. *Any strip may be removed without disturbing the others.* Unit width of columns—same as for Clark Liberty Directory sections. Write for detail information.



4-section Special Clark Liberty Directory



3-section Special Clark Liberty Directory



THE TABLET & TICKET CO.

Building Directories, Changeable Letter Signs and Bulletin Boards

1021 West Adams Street
CHICAGO, ILL.

NEW YORK, N. Y., 115 East 23rd Street SAN FRANCISCO, CAL., 407 Sansome Street
SALES REPRESENTATIVES IN ALL PRINCIPAL CITIES

Products

BUILDING LOBBY DIRECTORIES; FLOOR DIRECTORIES; BUSINESS DIRECTORIES; CHURCH DIRECTORIES; STORE DIRECTORIES; CLUB MEMBERSHIP and HANDICAP BOARDS; CHANGEABLE LETTER SIGNS and BULLETIN BOARDS; "IN-AND-OUT" BOARDS; HOSPITAL REGISTER BOARDS.

SINCE 1870

Building Directories—Service or Sale

Service—THE TABLET & TICKET CO. will install its standard directory equipment as specified, furnish name strips and keep the directory corrected, making name changes as ordered, and render complete maintenance service. The system will be installed under a contract at an agreed annual fee based upon the name capacity of the equipment.

Frames by Others—When ornamental frames are furnished by others, we will supply sections only, with strip service and maintenance service, making proper allowance in the service charge for the frame.

Strip Service—In cities where strip service stations are located, name changes are inserted in 24 hours; mail orders are invariably forwarded same day received.

Maintenance—A staff of men visit our directories periodically to see that they are kept clean, in repair and in good working order. There is no additional charge for this service.

Sale—THE TABLET & TICKET CO. directories may be purchased at a very reasonable cost; in this case regular Tablet & Ticket Directory service may be had at special rates, or strips purchased as required.

Description of Office Building Directory

The Directory—Each directory consists of two or more units, the frame and one or more removable sections.

Frames—Our frames can be furnished of ornamental cast metals; of any of six styles of extruded Benedict nickel, extruded bronze or extruded aluminum, three styles of kalamein moulding, or two styles of ornamental iron moulding.

These can be in various finishes as desired. Among these will be found a style to harmonize with any ornamental metal work.

Where special frames are included in the work of the ornamental iron or bronze contractor, Tablet & Ticket sections only are specified.

Headings—Headings may be a cast tablet, or white letters on a black background under glass.

Sections—Each section is a unit in itself. Frame is bronze, steel, nickel, or special metals to match frames, with beveled plate glass front. The strips fit into grooves in each side of the section frame and are held flat and in perfect alignment against the plate glass front by the padded removable back piece.

Standard sections are 7½ inches wide. Special size sections with appropriate strips to fit special frames can be supplied.

Name Strips—The strips are pliable black cardboard of special texture, with glazed white letters, providing sharp contrast and unusual legibility.

Name Capacities—In estimating the size directory required, we advise allowing two names for every office to provide proper expansion margin. The following chart indicates the normal name listing capacity of various combinations of standard sections, after allowing for alphabetical headings and blanks necessary to insure proper appearance.

NAME CAPACITIES OF STANDARD SECTIONS

Number of sections	Length of section, in.			
	18½	26⅜	32⅞	40⅜
3 sections	50	100	150	200
4 sections	100	150	200	300
5 sections	150	200	250	400
6 sections	200	250	300	500
7 sections	.....	300	400	600
8 sections	.....	400	500	700
9 sections	.....	450	600	800
10 sections	.....	500	700	900
(Total strips per section)	45	64	80	100

Architects' Service Department

As an added service to Architects, we have opened a department devoted to assisting Architects in the selection and specification of the proper directory equipment for every building. This service is free to Architects and is under the supervision of a Registered Architect.

SPECIFICATIONS

(1) Type—A directory of removable section, changeable name strip type, as manufactured by THE TABLET & TICKET CO., shall be provided.

(2) Directory Service—The directory shall be furnished by THE TABLET & TICKET CO. under a five-year Directory Service Contract with the owner. The annual charge for this service shall be based on the number of names listed on the directory. The directory and strips shall remain the property of THE TABLET & TICKET CO. and shall be overhauled by them at least once a year.

(3) Installation—The directory shall be supplied to the Contractor at the building by THE TABLET & TICKET CO. and installed by the contractor.

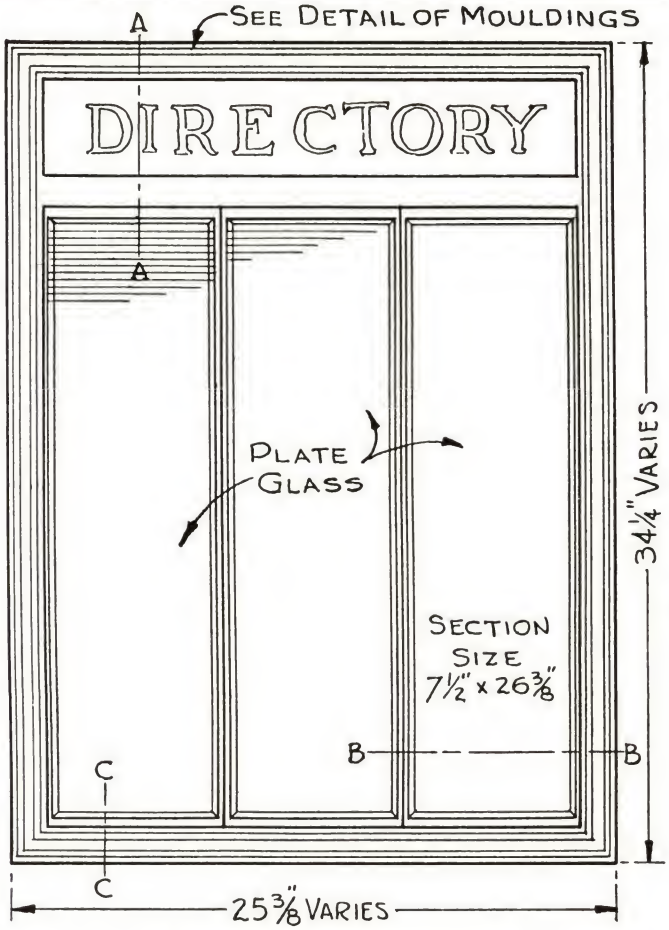
(4) Capacity—The directory shall be of a capacity to conveniently hold one hundred (or whatever required) names plus necessary alphabets.

(5) Frame—The master frame shall be of extruded bronze, aluminum or Benedict Nickel, Tablet & Ticket Co. Model (see mouldings on following page) with corners hand mitered and welded.

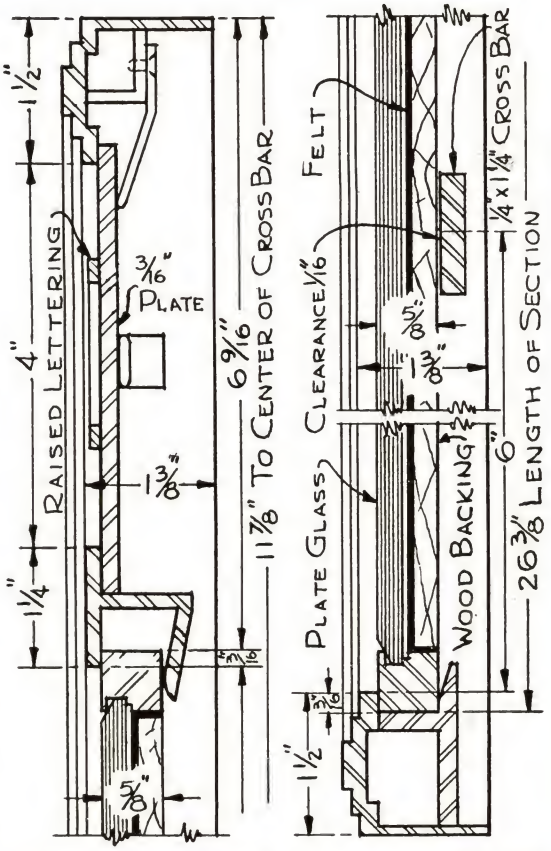
(6) Sections—Three removable sections (or whatever number selected) each 7½ in. x 26⅜ in. (or whatever size required) shall be furnished. The section frames shall be of metal to match the master frames.

(7) Name Strips—Name strips shall be of waterproofed, flexible cardboard, properly covered and machine lettered.

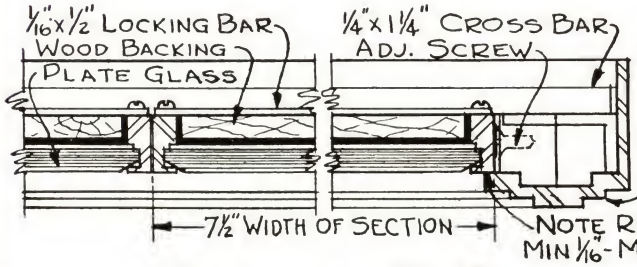
(8) Strip Service—All orders for new strips must be filled within 24 hours after being received.



ELEVATION
SCALE 1½" = 1'-0"

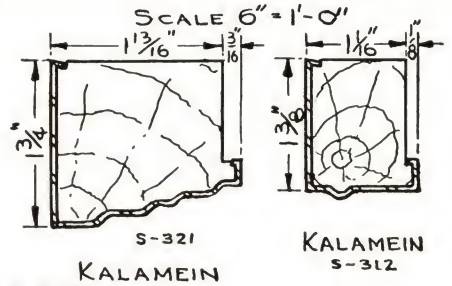


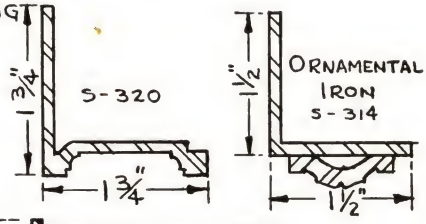
SECTION AT "A-A" • SECTION AT "C-C"

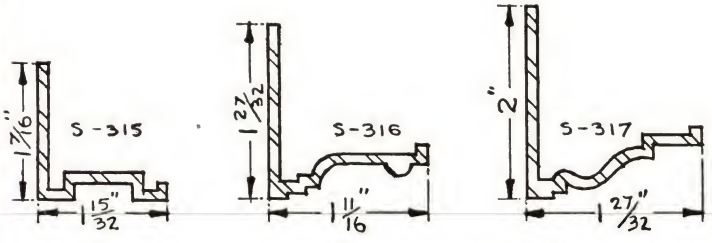


SECTION AT "B-B"
SCALE 6" = 1'-0"

SCALE 6" = 1'-0"







DETAILS OF BRONZE MOULDINGS
STOCK DESIGNS
SCALE 6" = 1'-0"

The TABLET & TICKET CO.
1021 W. Adams St.
CHICAGO

TYPICAL STANDARD THREE-SECTION DIRECTORY

A. KROLL

THE LAMSON COMPANY

Pneumatic Dispatch Tubes—Traveyors—Conveyors

SYRACUSE, N. Y.

BRANCH OFFICES

ATLANTA, GA.
BALTIMORE, MD.
BOSTON, MASS.
CHICAGO, ILL.
CINCINNATI, OHIO
CLEVELAND, OHIO
DALLAS, TEX.
DETROIT, MICH.
LOS ANGELES, CAL.
MINNEAPOLIS, MINN.
NEW YORK, N. Y.
PHILADELPHIA, PA.
PITTSBURGH, PA.
ST. LOUIS, MO.
SAN FRANCISCO, CAL.
SEATTLE, WASH.
WASHINGTON, D. C.

CANADA: TORONTO, ONT. and VANCOUVER, B. C.



Dispatch tube sending stations are equipped with modern Pneu-Art terminals that harmonize with fixtures

PNEUMATIC DISPATCH TUBES

Dispatch tubes are used to speed the flow of all papers, including messages, orders, memos, documents, and sometimes small items. Tubes link departments, offices, buildings—saving time and money. Banks, hospitals, hotels, stores, garages, libraries, warehouses, public buildings, utilities, dairies are business organizations that use tubes in the operation of their business.

Industries use tubes to carry messages and papers—to carry time tickets for production control. Many plants use tubes to send small samples for laboratory tests, such as: steel mills, chemical manufacturers, refineries, paint and process industries.



Frequently Central Stations are located at information desks or telephone switchboards. All connected departments have intercommunication through the Central

Sizes—There is a size to meet the demands of any business. From 1½, 2¼, 3 and 4-in. diameter carriers up to 3 x 6 and 4 x 7-in. oval carriers—a capacity range to satisfy most load requirements.

Terminals—Tubes are easy to install in present buildings and the line material requires very little space. Several types of terminals are available to meet individual requirements. Pneu-Art terminals made of metal in rectangular shape are exceedingly popular and available in many colors to blend with present fixtures. They are quiet in operation and serve both up-discharge and down-discharge tube stations.

There are also open type terminals, where carriers merely discharge into a handy receptacle or onto a desk or counter.



Model A Double Duty Trayveyor—also supplied in ascending, descending and reversible models to meet requirements

THE TRAYVEYOR

Lamson Trayveyor is automatic and continuous in operation and fills a definite need in hotels, cafeterias, restaurants, clubs, hospitals, and institutions. Any place where trays of food, dishes or materials must be carried up or down, there is a need for a Trayveyor.

The Trayveyor contains a series of shelves attached to endless moving chains. Trays of food or dishes are carried between floors and can be unloaded automatically or manually, depending upon the service required. An electro-mechanical overload protector insures safety by halting the mechanism instantly if overloaded or jammed.

There is a range of models to meet all conditions, including:

Model A, Double Duty, providing both up and down service simultaneously; Model B, descending; Model C, ascending; and Model E, reversible.

The Trayveyor is a precision built, trouble-free machine designed to give years of hard daily usage. Trayveyors can be installed in small space. Shaft sizes vary from 27 x 38 to 33 x 55 in.



Upper Floor Station of Model A Trayveyor fully equipped with limit switches and overload protector

CONVEYORS

- Roller Gravity
- Overhead Chain
- Belt
- Live Roll
- Vertical
- Push Bar Booster
- Chutes
  - All types

STANDARD CONVEYOR COMPANY

Manufacturers of Conveying Machinery and Equipment

NORTH ST. PAUL, MINN.

Sales and Engineering Offices Located in 54 Principal Cities



The Lowerlift

Elevates and lowers simultaneously, adapted for both restaurant and industrial uses

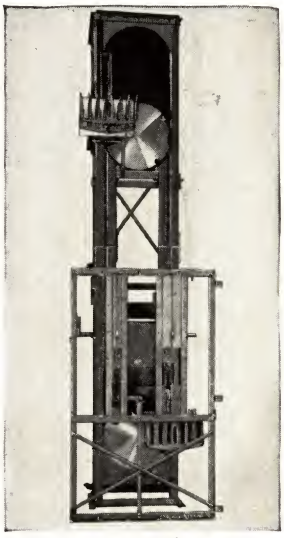
The Standard Conveyor Line of equipment is complete in that it is designed to handle practically every type of merchandise in package or container form.

Types of Conveyors

Gravity Roller
Gravity Wheel
Spiral Chute
Continuous Belt
Apron Slat
Live Roller
Continuous Chain
Incline Pusher Bar Lift
Vertical Pusher Bar Lift
Portable Piler
Tiering Machine

Of Special Interest to Architects

Vertical Lowerlift
Vertical Recordlift
Pneumatic Dispatch Systems
Spiral and Tubular Fire Escapes



The Recordlift

Designed to elevate and lower records, books or papers between floors in hospitals, insurance offices, etc.

For Single or Multiple Use

The conveyor units listed are designed for individual operation or for continuous progressive systems as requirements may demand. Thus, a 10-ft. section of roller conveyor may be used individually or as part of a system involving other gravity or power conveyors.

Sales and Engineering Service

This organization has been studying the individual handling requirements of industries and business for over thirty years. Our experienced engineers are prepared to give expert service and advice to architects, engineers, contractors, and prospective users of conveying equipment. Standard Engineers are at your service.

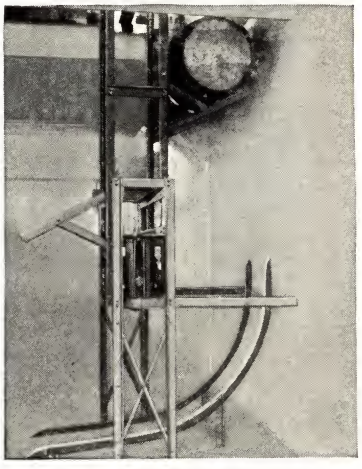
Catalog "K 306" sent on request as well as any other information that may be of assistance in solving material handling problems.



Inclined Pusher Bar Conveyor

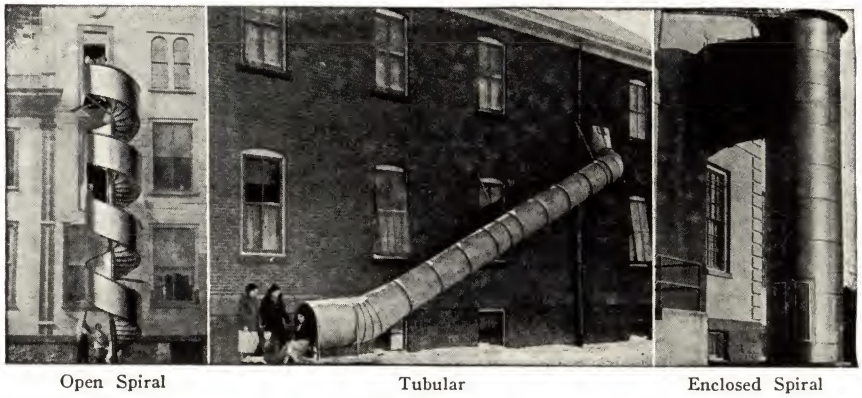
System consisting of roller conveyors, inclined conveyor and spiral chute handles cartons in nationally known radio manufacturing plant

STANDARD CONVEYOR COMPANY



Arm Type Barrel Elevator

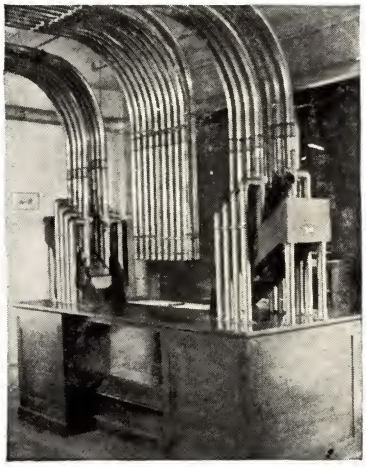
Receives barrels from floor above and lowers them to unloading skid



Open Spiral — Tubular — Enclosed Spiral

Fire Escapes

Designed to meet fire escape requirements of schools, hospitals, institutions and industry



Pneumatic Tube System

Carries correspondence orders, cash and small articles between departments and offices

MEMORANDA

ELEVATORS 22
- SECTION -

Section Number 1/5 Catalog Number

CATALOGS 1 to 18

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THIS INDEX INCLUDES ONLY MANUFACTURERS WHOSE CATALOGS ARE FILED IN THIS SECTION

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Otis Elevator Co. 22/8
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See Elevators—Electric

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Cable Equalizers

See Cable—Equalizers

Cars

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ESTABLISHED 1889

INCORPORATED 1917

BECKWITH ELEVATOR CO., INC.

TELEPHONE
Liberty 8333

113 Albany Street, BOSTON, MASS.

For Sidewalk Elevators—Hand Power, Hydraulic and Electric, see File Index

DUMBWAITERS, FUEL LIFTS, HOME AND FREIGHT ELEVATORS; ELECTRIC AND HAND POWER

Hand Power Dumbwaiter (Fig. 5)

Standard outfit, capacities to 100 lbs., ¾-in. ash car—30 in. high with removable shelf; adjustable metal guide shoes slide on three heavy hard pine guide posts; counterweight heavier than car runs in two slotted guide posts. Gearless ball bearing machine with large hand wheel and self-adjusting automatic brake; hand rope, ¾-in. (4-strand) India hemp with two part coupling; hoist cable, ⅜-in. (6x37) steel with cable clamps. All best quality, complete, ready for installation. Legal fireproof shaftway with slide-up counterweighted doors having fusible links, furnished by others. *For capacities of 100 to 300 lbs. use geared machine.*

Hand Power Undercounter Dumbwaiter—Same car, shaft and door sizes, machine, capacities, etc., as Fig. 5, except that machine is located at lower opening either side of shaft.

Electric Dumbwaiter (Fig. E)

Full automatic, push button operated from any service door. ¾-in. ash or steel car with removable shelf; metal guide shoes; stops automatically at desired landing. Traction type machine mounted overhead has heavy duty motor, solenoid-operated brake—bronze gear, steel worm with ball bearing thrusts operating in oiltight housing mounted on steel beams; latest type full magnetic controller; steel guide rails with adjustable counterweight. Hoist cable, ⅜-in. (6x37) steel with clamps. Contact switches for landing doors to render car inoperative unless all service doors are closed are standard; door locks operated by car if wanted. All wiring in conduit. All of best quality and workmanship. Legal fireproof shaftway with slide-up or two-part counterweighted doors having fusible links, furnished by others. Car any size to suit.

Electric Undercounter Dumbwaiter (Fig. D)—For restaurants, libraries, etc. Same general specifications as Fig. E but machine to be drum type mounted on floor, push button control. Can be full automatic if doors equipped with electric contacts are used. If doors are not to be used provide push button system as shown. Car to be sent from each landing but not called, thereby eliminating accidents. Car sizes to suit space available or opening in floor and height under counter. Cars are standard hardwood painted, galvanized or stainless steel.

Hand Power Elevator (Fig. 8)

500, 800, 1000, 15000 lbs. capacities.

Operated by pull rope from door landings or car. Car made of ash with matched hard pine floor, steel braces and gussets, strong and rigid. Car locked or speed controlled by pulling brake rope. Machine band brake roller bearing, heavy duty type, to suit capacity. Counterweight heavier than car and adjustable. Guide rails best quality hard pine, with center guide strips for larger outfits. Two steel hoist cables. Hand and brake ropes best quality manila bolt of proper size. Machine beams, hard pine or steel. Car sheathing or safety devices to hold car in case of rope breakage are extra. (See table for shaftway and other sizes.)

CAR, SHAFTWAY, MACHINE AND DOOR SIZES FOR HAND POWER ELEVATOR (FIG. 8)

Lifting capacity, lbs.	Car sizes, w x d in.	Car height, in.	Hand wheel diam., in.	Shaft sizes, w x d, in.		Overhead space for machine, in.	Door sizes, in.
				Single face	Double face		
500	36x36	48	36	43x39	43x40	42	38x54
800	42x42	72	42	52x45	52x46	48	44x78
1000	48x48	78	54	58x52	58x52	60	50x78
1500	60x60	78	54	70x64	70x64	60	62x78

CAR, SHAFTWAY, MACHINE AND DOOR SIZES FOR FIG. 5

Gearless Machines — Capacities 75 to 100 lbs.				Geared Machines — Capacities 100—300 lbs.			
Car size outside w'th x d'th	Shaft size inside w'th x d'th	Mach. hgt., in.	Door size, in.	Car size outside w'th x d'th	Shaft size inside w'th x d'th	Mach. hgt., in.	Door size, in.
No. 1—18x15	23x18	22	20x36	No. 1—20x18	25x21	24	22x42
No. 2—20x18	25x21	24	22x36	No. 2—24x20	29x23	30	26x42
No. 3—24x20	29x23	28	26x36	No. 3—30x24	35x27	36	32x42
No. 4—30x24	35x27	30	32x36	No. 4—36x30	41x33	42	38x42

Note: Allow 2½ in. additional front to back of shaft if doors and sills inside of shaft are wanted. Add 1 in. to depth of shaft if car is double face (open front and back).

Fuel and Log Lift (Fig. 90)

Operates by turning crank or hand wheel from lower landing. Automatic brake machine. Car stops instantly at any point. Cars made any size or capacity wanted. (Note table for car and shaft sizes.) Electrically operated cars may be had.

No.	Capacity, lbs.	Car sizes inside w'th x d'th	Shaft sizes inside w'th x d'th
1	300—2-ft. log	28x20	36x23
2	400—3-ft. log	40x24	48x27
3	500—4-ft. log	52x24	60x27

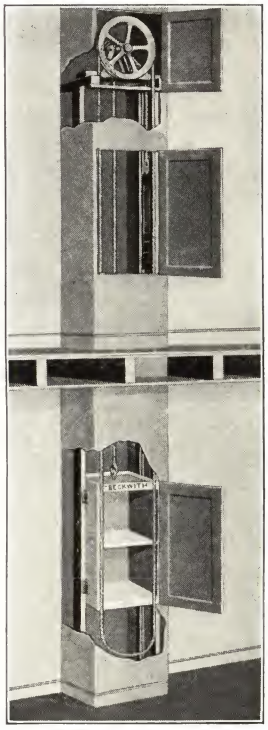


Fig. 5 Hand Power Automatic Brake Dumbwaiter



Fig. E Electric Dumbwaiter, Push Button Control

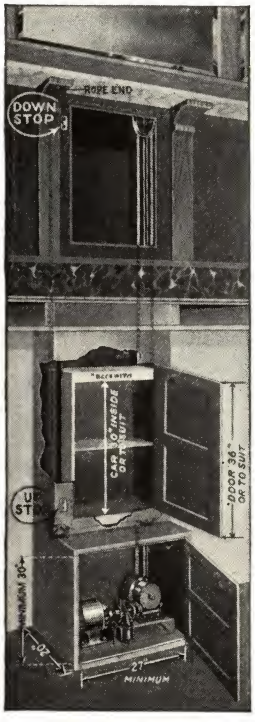


Fig. D. Electric Undercounter Dumbwaiter

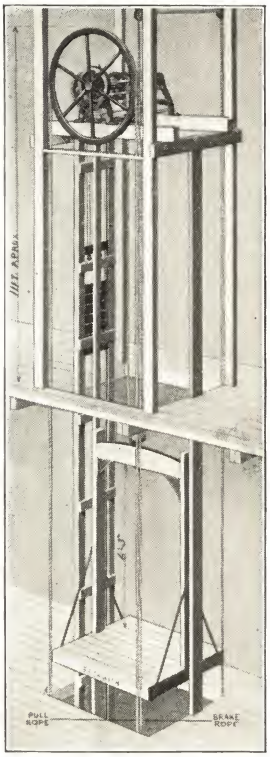


Fig. 8 Hand Power Elevator

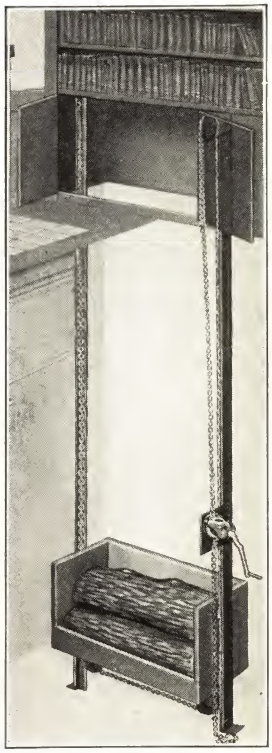


Fig. 90 Fuel and Log Lift, Manually Operated

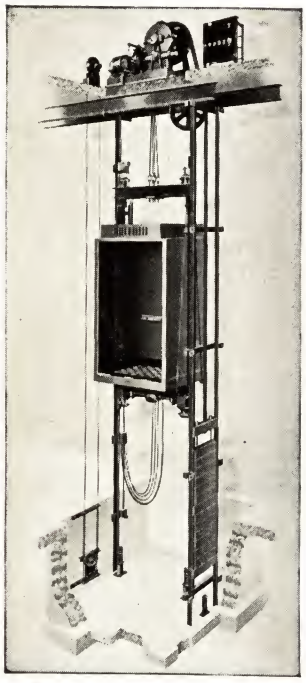
CAPITAL ELEVATOR & MANUFACTURING CO.

Freight and Passenger Elevators, Hand and Electric Dumbwaiters

Town and Lucas Streets, COLUMBUS, OHIO

BRANCHES

CANTON, OHIO, 320 Brant Bldg. SANDUSKY, OHIO, 109 W. Water St. ZANESVILLE, OHIO, 1033 Sunset Drive



Electric Passenger Elevator

Products

ELECTRIC PASSENGER and FREIGHT ELEVATORS, ELECTRIC SIDEWALK LIFTS, HAND and ELECTRIC DUMBWAITERS.

Also Residence Lift; Hand Power Elevators and Sidewalk Lifts; Ice Hoists and Conveyors.

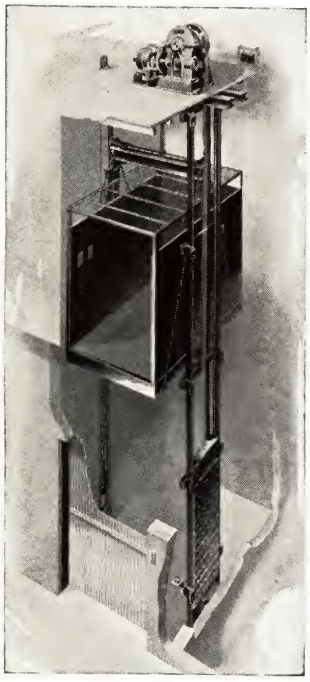
For pages on Capital Ash Hoists and Conveyors, see File Index.

Electric Passenger Elevators

Capital Passenger Elevator Installations are modern in design, safe and reliable in operation and are especially suitable for hotels, apartment houses, stores, hospitals, sanitariums, offices, schools and other public buildings. Control may be by means of push buttons or car switch. They are very simple in design, rugged and durable in construction.

Electric Freight Elevators

Capital Freight Elevators are used for all purposes in all types of buildings. Size, capacity and speed may vary to suit requirements of the traffic and the height of the building. Any standard system of control furnished, such as shipper rope, hold-in push buttons, full automatic push buttons or car switch. They are highly efficient, dependable and durable and are suitable for the most exacting service.



Electric Freight Elevator

CAPITAL ELECTRIC AND HAND DUMBWAITERS AND SIDEWALK LIFTS



Model 9A Economy Dumbwaiter

Capital Economy Dumbwaiter Model 9A

Made to accommodate wider cars than is practical with Model 9.

An excellent general purpose dumbwaiter.

All steel construction, self-supporting.

Cars may have one or more compartments.

Stop at the floor line or any distance above.

Plumb shaftway should be 14 in. wider and 5 in. deeper than size of car.

Clearance above car, when in the up position, should be 8 in.—minimum stop 3 ft. above basement floor.

Capacities 300 to 500 lbs. at 30 ft. per minute.

Automatic push button control.

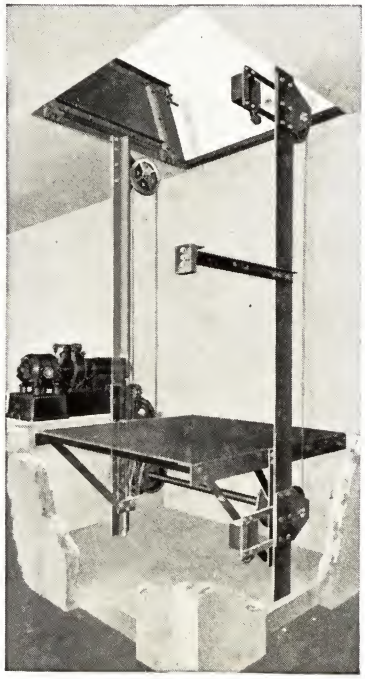
Sterling Electric Sidewalk Lift Model 20

Of the highest grade manufacture, with oil immersed worm gearing and enclosed cut spur gearing from machine to drum shaft.

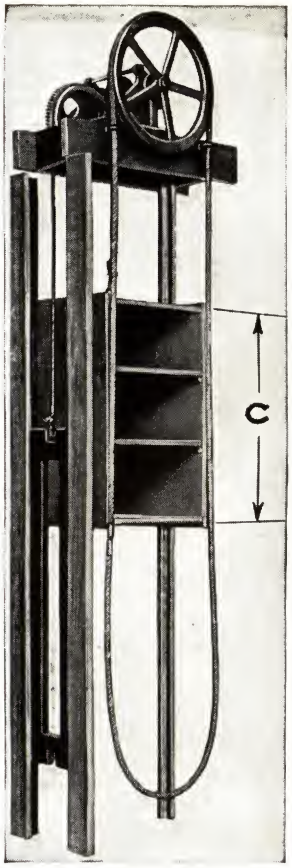
Car of size to suit conditions with steel or wood floor, enclosed when desired, or equipped with bow for operating doors.

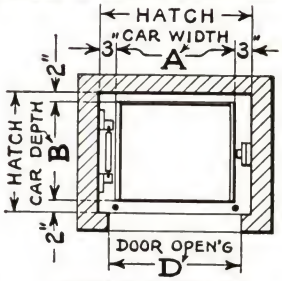
May also be provided with instantaneous safety devices and automatic warning placed at right or left of hatchway.

Control similar to freight elevators.



Model No. 20 Sidewalk Lift





Model A Dumbwaiter

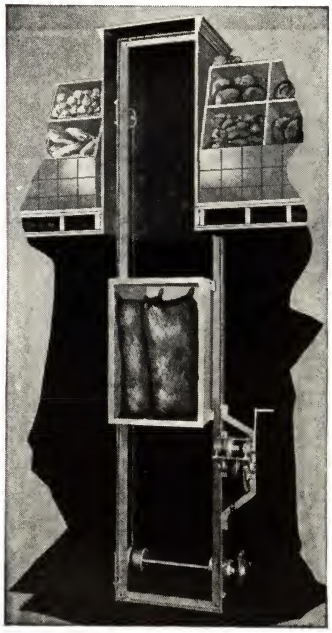
Capital Ball Bearing Dumbwaiter Model A Automatic Brake

This machine makes an excellent outfit for use in restaurants, hotels, stores, offices, libraries, hospitals, sanitariums, factories, etc. It is easily operated, simple in design, ruggedly constructed for long service.

Standard cars are wood but steel cars or steel enclosure with hardwood shelves may be had at a small additional cost.

No.	A	B	C	D
1	20″	16″	30″	22″
1A	20″	16″	30″	22″
2	24″	20″	30″	26″
2A	24″	20″	30″	26″
3	28″	24″	30″	30″
3A	28″	24″	30″	30″
4	32″	28″	30″	36″
4A	32″	28″	30″	36″
5	36″	30″	30″	38″
5A	36″	30″	30″	38″

No.	Ratio	Capacity
1	4:1	50 lbs.
1A	8:1	100 lbs.
2	5:1	50 lbs.
2A	10:1	100 lbs.
3	5:1	50 lbs.
3A	10:1	100 lbs.
4	6:1	75 lbs.
4A	12:1	150 lbs.
5	7:1	100 lbs.
5A	14:1	200 lbs.



Model C Dumbwaiter

Capital Store Dumbwaiter Model C

Capacity 200 lbs.

Ball bearing geared winch.

Automatic brake.

Double drum with chain drive to drum shaft.

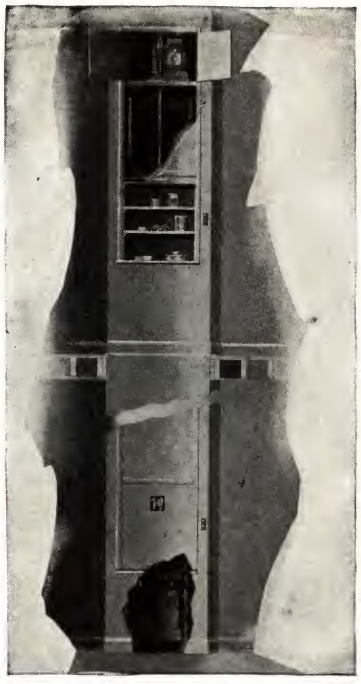
All-steel construction.

Self-supporting.

Space required on each side for guides, 4½ in.

Clearance front and back, 2 in. each—minimum stop above basement floor, 1 ft. 6 in. Clearance above car, when in up position, 8 in.

An excellent lift for stores, bars, etc.



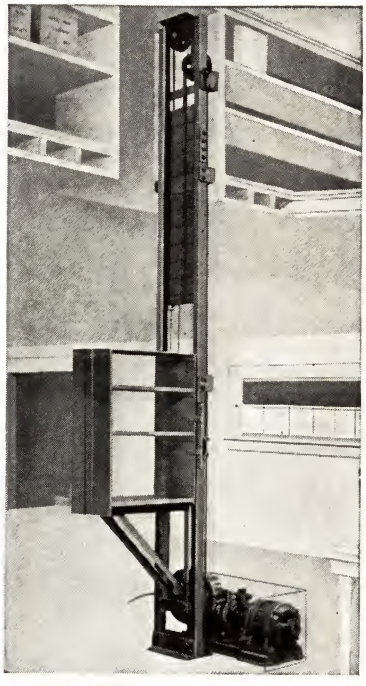
Electric Dumbwaiter

Capital Electric Dumbwaiters

Capital Utility is suitable for many purposes, such as food lifts in hospitals, hotels, restaurants, clubs and private residences; book lifts in libraries, offices, banks and public buildings; tools and parts in manufacturing plants; accessories in garages, service stations, etc. Made in sizes, capacities and speeds to suit individual requirements.

Cars may be had in any form desired and finished with paint, duco, or baked enamel. Push button control, either automatic, or constant pressure, or single station control.

When combination car and counterweight guides are placed at rear as shown and sliding doors are placed inside shaft, the plumb hatchway inside should be 9 in. wider and 9 in. deeper, front to back, than size of car desired. Doors are usually placed 30 in. from the floors and space above the top of top opening should be 5 ft.



Model 9 Counter Dumbwaiter

Capital Electric Counter Dumbwaiter Model 9

Designed especially for restaurants, cafeterias, candy counters, stores, etc. It may be spotted at any convenient location without unsightly shaftways projecting above counters. Made in sizes and capacities to suit conditions and requirements. Operated by push buttons, it is a very simple and convenient type of lift.

Equipment is very flexible as to layout and installation may be made in a variety of ways. We furnish complete layout plans for approval of the purchaser and equipment is constructed in accordance with the approved arrangement.

Has been in satisfactory service for many years.

Shaftway should be 9 in. wider than car and 3 in. deeper than car, exclusive of doors. If doors are used, allow another 3 in. for door and hardware. Clearance above, when in up position should be 6 in.—minimum stop above basement floor, 18 in.

ESTABLISHED 1876

CHELSEA ELEVATOR CO.

INCORPORATED 1912

Manufacturers of Electric and Hand Operated Dumbwaiters and Elevators

EXECUTIVE OFFICE AND FACTORY

549-551 West 52nd Street, NEW YORK, N. Y.

REPRESENTATIVES IN ALL PRINCIPAL CITIES OF THE UNITED STATES

Products

ELECTRICALLY OPERATED DUMBWAITERS, PUSH BUTTON PASSENGER ELEVATORS and SIDEWALK ELEVATORS.

HAND OPERATED DUMBWAITERS and ELEVATORS for all purposes.

Our machines include Dumbwaiters for residences, apartments, hotels, restaurants, hospitals, etc.; Trunk Lifts, Book Lifts, Fuel Lifts, and Tube, "Tellerwaiter," and Under-counter Dumbwaiters; also various kinds of elevators, including Invalid, Freight, Sidewalk and Automobile Elevators; Ash Hoists, Mortuary Lifts, Hatchway Hoists; also Sidewalk Elevator and Dumbwaiter Doors and Semi-automatic Gates.

A complete selection of dumbwaiters is available, "Chelgear," "Chelduogear," "Chelnogear," "High Speed," and "Heavy Duty Band Brake."



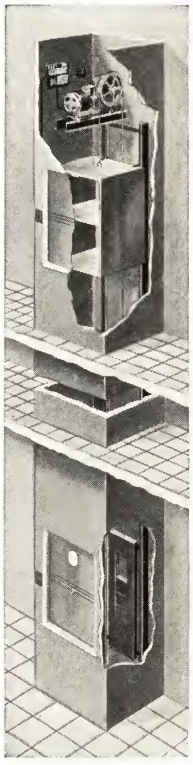


Quality of Products

CHELSEA ELEVATOR Co. realizes the value of its reputation of long standing for integrity and quality, and architects and their clients can depend upon it that CHELSEA ELEVATOR Co. intends to maintain this reputation, and products purchased from this company may be relied upon to be of the highest grade obtainable.

The Company

CHELSEA ELEVATOR Co. with 63 years of experience in the elevator industry, maintains agents in all the principal cities who are competent to give service and will co-operate with architects, owners and builders.



Passenger Elevators

Chelsea Automatic Electric Elevators embody every known safety requirement. Children, elderly persons, invalids and semi-invalids and others will find this equipment a constant source of satisfaction both in comfort and convenience.

The low cost of installation and maintenance should recommend it to all those requiring such an equipment.

The No. 7 Hand Operated Elevator is a safe equipment where current is not available and minimum expense is considered.

The Dwight W. Morrow residence and the Harkness residence use Chelsea Elevators.



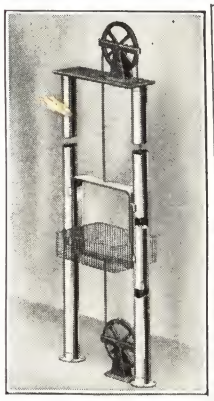
No. 7 Patent Frame Passenger Elevator
500 to 1000-lb. capacity

Electric Dumbwaiters

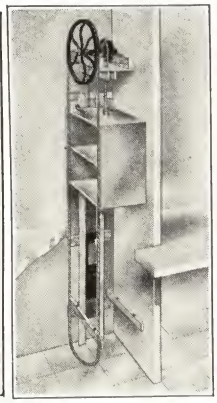
Chelsea Electric Dumbwaiters are complete equipments designed by our own Engineers and manufactured in our own plant where facilities are ample and especially suitable for the manufacture of this product.

All types of control signal systems as well as complete door units are obtainable.

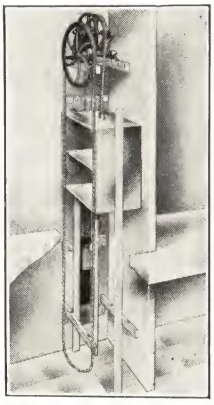
Chelsea Electric Dumbwaiters have a reputation unsurpassed for efficient service, and equipments have been installed successfully in nationally known buildings from coast to coast. The Pierpont Morgan Library and the Hon. Jas. W. Gerard residence use Chelsea Dumbwaiters.



No. 0 Teller Type Rapid Dumbwaiter
1 to 20-lb. capacity
High speed

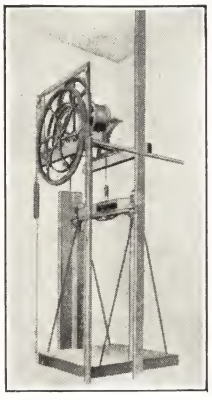


"Chelnogear" No. 5—Plain Double Automatic Brake Dumbwaiter
25 to 75-lb. capacity
Class AA, A, B, and C

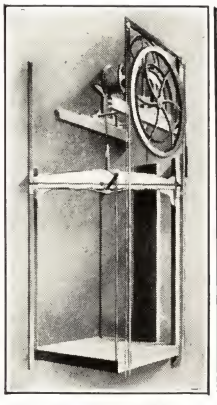


"Chelgear" No. 5—Full Diameter Geared Automatic Brake Dumbwaiter
15 to 150-lb. capacity. Class D, E, F, G, H, I, J, K

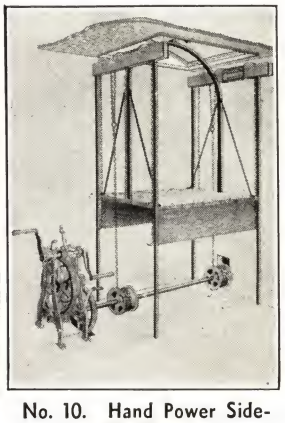
"Chelduogear"
To 500 lbs. capacity



No. 8 Patent Frame Side Post Store Elevator
1000 to 3000-lb. cap.



No. 9. Patent Frame Corner Post Store Elevator
1000 to 3000-lb. cap.



No. 10. Hand Power Sidewalk Elevator
1000 to 6000-lb. capacity

ESTABLISHED 1887

ENERGY ELEVATOR COMPANY

Manufacturers of Freight Elevators—Dumbwaiters—Residence Elevators

TELEPHONE
MARket 0821

210-218 New Street, PHILADELPHIA, PA.

AGENTS IN ALL PRINCIPAL CITIES

Products

DUMBWAITERS, HAND and ELECTRIC.
DUMBWAITERS, UNDERCOUNTER.
DUMBWAITER DOORS.
FREIGHT ELEVATORS, HAND and ELECTRIC.
SIDEWALK ELEVATORS, HAND and ELECTRIC.
RESIDENCE ELEVATORS, HAND and ELECTRIC.
Also Mortuary Lifts, Fuel Lifts, Book Lifts, Coin Lifts.

ENERGY ELEVATORS & DUMBWAITERS WHEREVER A LIFT IS NEEDED

Features

For 51 years, Energy Elevators and Dumbwaiters have been handling all kinds of lifting problems. They are well designed, sturdily constructed, and adaptable to various building conditions. The best of raw material is carefully selected for each unit, and accurately processed by careful workmen in our large completely equipped factory.

Service for Buyers

Our files are a storehouse of successful applications of Energy equipment to meet special requirements. One of these applications may be the answer to your particular problem, if a standard arrangement cannot be used. Practical suggestions are obtainable without obligation on your part.

Erecting plans, instructions and wiring diagrams are supplied by us to guide the installation by local mechanics.

Guarantee

All Energy Elevators and Dumbwaiters are fully guaranteed for materials and workmanship, and can be installed with the knowledge that they will give utmost service over the years.

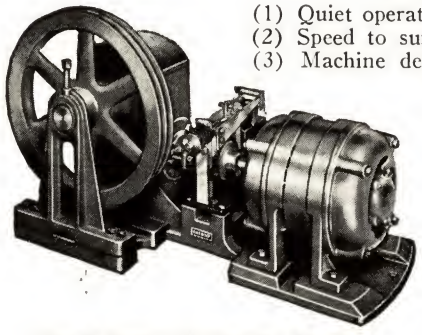
ENERGY ELECTRIC DUMBWAITERS

Capacity—up to 500 lbs. at any practical speed desired.

This line is extremely capable in service and adaptable to every type of building condition and vertical transit need. It makes available the advantages of electric service at places where it has heretofore been considered impossible or too expensive.

Features

(1) Quiet operation.
(2) Speed to suit the service.
(3) Machine designed for long life, with all internal working parts and surfaces of bronze and steel.
(4) Motor protected against overload, no voltage and phase reversal.
(5) Full call and send push button control, inoperative while car is in motion.



Type R Electric Dumbwaiter Machine

Equipment

Machine with motor and brake; idler wheels, shafts and bearings; automatic push button control units; car (size and type desired); counterweight; cables and connections; guide runs for car and weight.

Specifications

Machine—Latest improved direct-connected traction type. Overhead or basement floor mounting. Worm gear is solid bronze and worm and worm shaft are cut from one blank of hardened steel and coupled directly to the motor. Ball bearing thrusts are located on all shafts, and all bearings and heads are bronze.

Motor—Ample capacity, manufactured especially for dumbwaiter service and guaranteed to comply with standards of the A. I. of E. E. Alternating or direct current, 220-440 volts. Brake is the solenoid type, self-holding and automatic.

Control—By push button at each landing to call or send the car from or to any floor. Effected by a single momentary pressure of the proper button.

Car—Any size up to 3 ft. square and 4 ft. high, with or without shelves of material to fit surroundings. Furnished in wood, steel or stainless metals.

Guides—Hardwood or planed steel rails, according to service and speed desired.

Cables—Special flexible steel construction of such size and number as to give a high factor of safety.

Note: Machine can be built for installation at top of shaftway or at foot, offering adaptability to all types of building construction.

ENERGY DUMBWAITER DOORS

Energy Dumbwaiter Doors are designed for use with either hand operated or electric dumbwaiters. They are easily operated and economical. Two types are offered—two panel biparting doors and the popular one panel vertical sliding doors. All parts are of metal, to insure long life and good appearance.

On electric dumbwaiter installations, the door interlocks are shop-fitted to the doors, providing permanent setting and alignment and reducing installation expense. Standard steel swing doors for access to machine spaces are also available.

Features

(1) All steel flush panels—modern in appearance, and easily cleaned.

(2) Panels are suspended from strong chains, operating over roller bearing machined sheaves.

(3) Guide shoes on door operate over steel guides, insuring easy operation and proper alignment.

(4) Designed for easy erection by local mechanics.

(5) Solid bronze hardware—anti-pinch lift, with rubber bumpers at top and bottom.

(6) Access doors are flush panel welded steel with concealed hinges, frames for building into wall and bronze hand turn latch.



Equipment

A standard unit includes steel door panels with guide shoes mounted; bronze lift; steel guides, spreaders, guide backing, sill and head; rubber bumpers and a shop coat of paint—which constitutes a complete door. Does not include trim for the wall opening, building support for guides or builders hardware. Vision lights are optional. A variety of steel frames and trim are available.

Shipping weight of a door to provide a clear opening 2 ft. wide by 3 ft. high, is approximately 120 lbs.

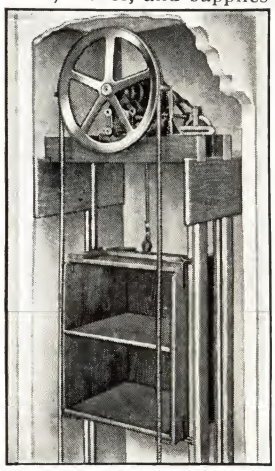
Blue prints and erecting data are furnished to guide local mechanics in making the installation.

We are prepared to solve your particular door problem.

ENERGY DUMBWAITER, TYPE 632

Capacity Range: 25-75 lbs.

This Dumbwaiter is for use in homes, apartments, restaurants, stores, and light manufacturing plants for the quick transfer of food, dishes, and supplies between floors.



The strength of the equipment, which is much greater than the maximum capacity, and the simple, practical construction insure a long life of service, without trouble.

Features

(1) Automatic brake acts independently of the operator; of a type which applies on the downward motion of the car only, being free of all friction on the up motion.
(2) Especially designed and fitted for erection by local mechanics.
(3) Assembled machine.
(4) Adjustable counterweight.
(5) Finished car.
(6) Roller bearings.
(7) Compounded guides.

Equipment

Machine, car, counterweight, guides for car and weight, hoist cable, hand rope and guards.

Specifications

Machine—Automatic lock type, which sustains the loaded car at any point of travel, and requires no hand brake. The lock applies in the downward direction only, eliminating all brake friction when raising loads. Main shaft is polished turned steel, revolving on roller bearings, and the entire mechanism is mounted in one rigid iron frame. All parts are accurately machined and carefully fitted, to make a substantial hoisting machine.

Car—First quality, well-seasoned hardwood, finished with filler and varnish. The top and bottom are gained into the sides, braced, and bound with irons. Standard size is 24 ins. wide, 20 ins. deep, and 30 ins. high, with one middle shelf, making two compartments 14 and 12 ins. high. Guide shoes are of iron, and are adjustable.

Counterweight—Heavier than the car to assist in raising loads and runs smoothly in guides. It is sectional in construction and easily accessible for adjustment to the average load conditions.

Guides—Consist of a maple strip on one side, and two grooved pine runs on the opposite side, arranged to guide both car and weight, conserving shaftway space and assuring quiet, easy operation. Grooved runs are compounded to prevent warping.

Hoist Cable—Flexible iron cable, of ample strength, with necessary fastenings for the car and weight.

Operating Rope—First quality hemp, free from splinters, with guards to hold it always in place.

Variations

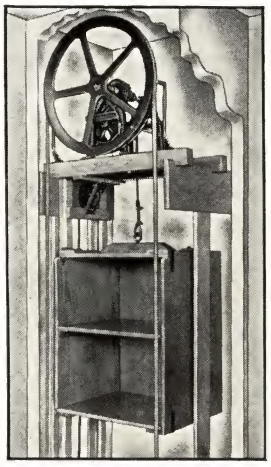
This dumbwaiter can be furnished with car open front and back, front and either side, or equipped to run on brass tubes. It can be any size to maximum (see table), with any number of shelves. Steel car can also be furnished.

HEAVY DUTY DUMBWAITER, TYPE 432

Capacity Range: 75-300 lbs.

For use in hospitals, schools, bakeries, shipping rooms, garages, etc., for movement of food in quantity, containers, tools, supplies, etc.

This dumbwaiter is made in various capacities for maximum loads of 150 to 300 lbs. Each machine is geared, according to the duty required, to handle the average load with ease.



Features

(1) Finished car.
(2) Compounded guides.
(3) Geared machine.
(4) Automatic brake acts independently of the operator.
(5) Adjustable and accessible counterweight.
(6) Designed and fitted for easy erection by local mechanics.
(7) Antifriction bearings.

Equipment

Machine car, counterweight, guides for car and weight, hoist cable, hand rope and guards.

Specifications

Machine—Automatic lock type, sustaining loaded car at any point without hand brake. Lock applies on downward motion only, eliminating all friction in raising loads. Geared to raise average load easily. Spur gearing, cast from machine-cut patterns, and shafts of turned steel on antifriction bearings, all contained in an iron frame. All parts accurately machined and carefully fitted.

Car—Cabinet type, of first quality well-seasoned hardwood, finished with filler and varnish, braced and bound with irons. One middle shelf. Adjustable guide shoes of iron.

Counterweight—Heavier than car to assist in raising loads. Sectional and adjustable to average load conditions.

Guides—Consist of a maple strip on one side and two grooved pine runs on opposite side, arranged to guide both car and weight. Runs are compounded to prevent warping.

Hoist Cable—Flexible steel of ample strength, with necessary fastenings.

Operating Rope—First quality hemp, free from splinters, with guards to hold it in place.

Variations

This type of dumbwaiter may have any or all of the following:

Machine-cut gearing; full diameter traction sheave; steel car; car open front and back, or front and side.

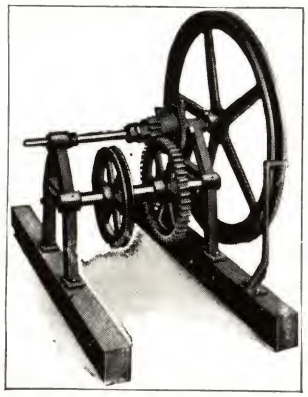
LITTLE GIANT DUMBWAITER, TYPE 1100

Capacity Range: 150-300 lbs.

A platform lift with an automatic brake for use in apartments, institutions, dormitories, warehouses, stores, laundries, etc., for transporting trunks, barrels, cases and heavy smaller articles.

Features

(1) Large substantial platform.



Geared Dumbwaiter Machine

(2) Geared machine.
(3) Automatic brake acts independently of the operator. Car moves upward without friction.
(4) Antifriction bearings.
(5) Adjustable counterweight.
(6) Designed and fitted for easy erection by local mechanics.

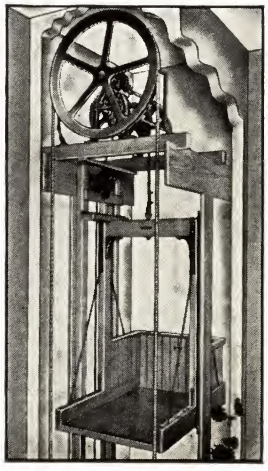
Variations

This dumbwaiter may have any or all of the following:

Enclosed weight box; positive safety device on car; full enclosures on car; machine with compound machine-cut gearing, with or without an adjustable ratio feature.

Specifications—Equipment

Machine—Automatic lock type, sustaining loaded car at any point without hand brake. Lock applies on downward motion only, eliminating all friction in raising loads. Geared to raise average load easily. Spur gearing, cast from machine-cut patterns, and shafts of turned steel on antifriction bearings, all contained in an iron frame. All parts accurately machined and carefully fitted.



Car—Platform type with crossbeam, stiles and sills of first grade hardwood, amply reinforced with beam angles and wrought iron stay rods. The floor consists of hardwood planking through-bolted to the stiles. Car enclosed on the rear sides and back to a height of 18 in. with yellow pine fencing, neatly finished. Guide shoes are iron and adjustable to the runs.

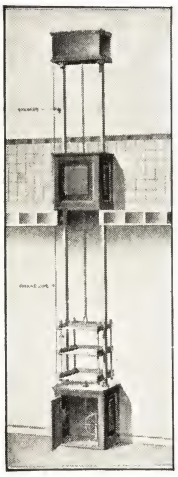
Counterweight—Heavier than car, sectional for adjustment to the average load, runs smoothly in closed box.

Guides—Consist of a maple strip on one side and two grooved pine runs on opposite side, arranged to guide both car and weight. Runs are compounded to prevent warping.

Hoist Cable—Flexible iron of ample strength, with necessary fastenings.

Operating Rope—First quality hemp, free from splinters, with guards to keep it in proper position.

LITTLE BEAUTY DUMBWAITER, TYPE 362



Capacity Range: 1-25 lbs.

For use in restaurants, tap rooms, banks, offices, light manufacturing plants, etc., for the quick movement of short orders, papers, letter trays and small objects. The sturdy and simple construction provides actual strength far in excess of its capacity of 25 lbs.

Features

(1) Quick acting.
(2) Ornamental finish.
(3) Easy erection.
(4) Self-holding brake.
(5) Roller bearings.
(6) Speaker arrangement.
(7) Rubber bumpers.

Equipment

Guarded wheels and brake, overhead cabinet with mechanism mounted, car, counterweight, brass tube guides with collars and clamps, operating rope with connections, speakers. If desired, cabinet base and cabinet stand for each floor opening can also be furnished.

Variations

Car can be furnished any size up to maximum (see table) with one or two compartments, completely enclosed, or in special metals.

ENERGY UNDERCOUNTER DUMBWAITERS

Capacity: 50 lbs. to 300 lbs.

For use chiefly between basement and first floor, where an overhead machine on first floor is undesirable. Operation is by means of a hand wheel beside the basement landing. Can be provided in wood or steel, according to service requirements, and the steel type can be completely shop assembled, to minimize the installation expense.

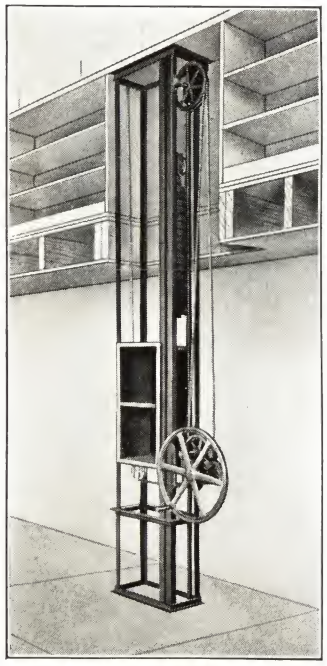
Features

Automatic brake to hold the load at any point of travel.

Ample gearing and power for capacity selected.

No wheels necessary over the car, permitting maximum car travel.

Simplified design for easy erection.



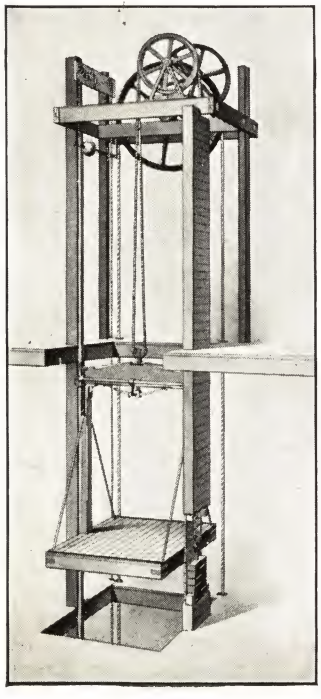
Type 1064

ENERGY HAND-OPERATED DUMBWAITER DATA

Capacity range, lbs.	Energy dumbwaiter	Standard car size, in.			Maximum car size, in.			Size of shaft for standard car, in.		Shipping weight, lb. (for 10-ft. travel)
		Width	Depth	Height	Width	Depth	Height	Width	Depth	
1-25	Little Beauty—Type 362	20	16	30	24	20	30	26	18	275
25-75	Energy—Type 632	24	20	30	36	24	30	29	23	300
75-300	Heavy Duty—Type 432	30	24	36	9 sq. ft.		*48	36	27	450
150-300	Little Giant—Type 1100	30	42	*48	9 sq. ft.		*48	36	45	525

All dumbwaiters and dumbwaiter cars subject to wide variations to fit service needs. See descriptions for full information.
*To headbeam.

ENERGY HAND-OPERATED FREIGHT ELEVATORS



These elevators are designed for maximum capacities of 500, 1,000, 1,500 and 2,000 lbs., according to the car size required. They are geared for operation by one man, with average loads on the car.

To reduce exertion in raising loads, and to balance descending loads safely, each is counterweighted enough to neutralize part of the average load. The empty car rises without exertion, and a capacity load descends by gravity. Controlled by brake line beside the operating rope.

Equipment

Machine, car with safety catch, counterweights on a wrought iron bar, hand rope, two hoist cables and fastenings, check line, car runs.

Note: Guide posts, machine supports, weight box, and bolts for installing are not included, as they can be purchased locally at a saving.

Specifications

Machine—Shafts are steel with turned journals. Cable wheel is machine scored. Gearing is made from machine-cut patterns and keyed to shafts. Reversible yokes, with bearings cut integrally, keep gears in alignment and are equipped with heavy steel rollers. Pull wheel is of largest diameter consistent with capacity and car size. Brake band is of leather lined steel, making equalized contact on the two outer flanges of the pull wheel. It is self-holding and adjustable.

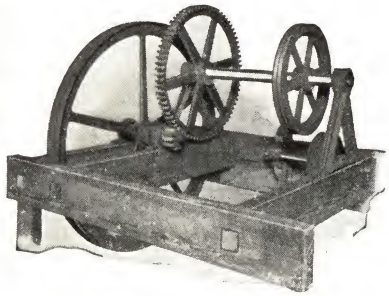
Car—Heavy first grade hardwood, tenoned and throughbolted at every joint; reinforced with irons and braced with corner brackets and stay rods. Flooring is hard maple. Easily adjusted guide shoes are of iron. Safety catch is instantaneous and of ample size to lock car with capacity load to guide runs should both cables break.

Counterweight—Enough to overbalance empty car, made in sections to provide adjustment to actual load conditions.

Ropes—Operating rope and brake line are first grade hard manila.

Cables—Two of steel to suspend car and counterweight, having a strength of ten times the load and connected with equalizing fittings.

Guide Runs—Hard white maple, milled for guide shoes, drilled and countersunk.



ENERGY HAND ELEVATOR, TYPE 992

Maximum capacity, lbs.	Car size (width and depth), ft.	Shaft size (width and depth), ft. in. x ft. in.	Shipping weight, lbs.
500	3 x3½	3-11 x 3-8	1100
1000	3½x4	4- 5 x 4-2	1400
1500	4 x4½	4-11 x 4-8	1700
2000	4½x5	5- 6 x 5-2	2100

ENERGY RESIDENCE ELEVATORS

The hand power type has all parts of ample proportion to provide a wide margin of safety. The car is fully enclosed and the automatic brake effective in both directions of travel. Machine cut spur gearing, large roller bearings and equalized counterbalance reduce operating effort to a minimum. The installation can be arranged to suit almost any building conditions.

Specifications
Hand-Operated Residence Elevator

Machine—Has steel shafts, with turned journals, fillet finished. Cable wheel is machine scored. All spur gears have machine cut teeth and are keyed to shafts. Entire machine is set up in heavy iron stands, fitted with roller bearings, keeping gears in perfect alignment. Brake is automatic in both directions, with solid bronze bands making equalized contact on an iron drum, and positively holding car, either empty or loaded, at any point.

Car—Hardwood frame construction, 3 ft. wide, 4 ft. deep, with maple floor, well-braced with irons and fitted with adjustable guide shoes. It has a spring grip safety device which will lock car to guides instantly in the remote event of both cables breaking. Enclosures consist of wood panels on sides, back and top, finished to harmonize with the surrounding woodwork.

Cables—Two steel cables, with equalizers, suspend car and counterweight and have a combined strength of 18,000 lbs.

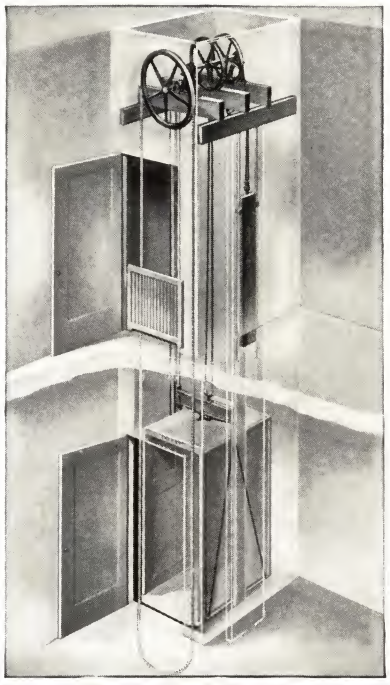
Counterweight—In sections, for convenience in adjusting weight to balance loaded car. It runs between wood guides to insure quietness.

Operating Rope—Best grade of Italian hemp, durable, yet free from splinters. Suitable eyes are provided to guide rope in proper course.

Guide Runs—Hard white maple, milled for car guide shoes, and drilled and countersunk for erecting screws.

Equipment

Machine, hardwood car, hoist cables with fastenings, counterweight, operating rope, guide runs.



Showing Hand Operation

Note: If desired, safety gates can be supplied to protect the entrances to elevator while the car is away from the landing.

The electric residence elevator is likewise substantially constructed, to give safe and permanent service. It is operated by means of pushbuttons from the car. The machine can be located either overhead or in the basement. Automatic devices give full protection against overtravel and overload, and electro-mechanical interlocks are provided for the shaftway doors.

Specifications
Electric Residence Elevator

Machine—Overhead or basement floor mounted direct connected traction type, capacity 500 lbs., with high factor of safety. Worm and worm shaft cut from one blank of solid steel, turning on phosphor bronze bearings with roller bearing thrusts. Brake is solenoid type, self-holding and automatic.

Motor—Of ample capacity, guaranteed to comply with standards of A. I. of E. E. Alternating or direct current.

Control—Pushbuttons located in the car send it to the desired floor while single buttons at each landing call the car to you.

Car—Rugged structural steel frame in which is suspended a cab of surfaced hardwood finished to harmonize with surrounding woodwork. Standard car equipment consists of a positive safety device, folding metal gate, flush light fixture and master pushbutton station.

Cables—Equalized steel cables of the proper number, diameter and construction to give an ample factor of safety.

Counterweight—Sectional, guided weight travels noiselessly in the guides provided.

Guides—Planed steel shapes of ample section with the necessary fishplates, bolts and brackets.

Equipment

Machine with motor and brake, car with gate and safety device, complete controller, counterweight, cables and connections, guides and brackets, door interlocks.

ENERGY SIDEWALK ELEVATORS

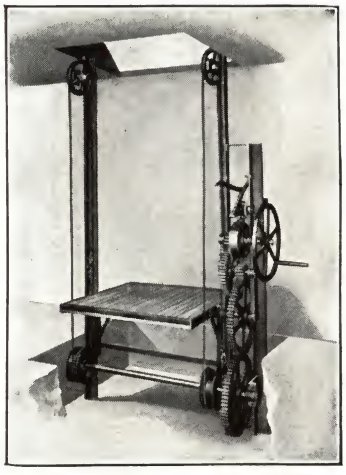
Energy Sidewalk Elevators increase the usefulness of the basement in stores, factories, schools and hospitals.

They save man power, keep the sidewalk clear, and make the dispatch of goods a quicker, more satisfactory operation.

In design they are the most modern obtainable, are sturdily constructed and will give lasting satisfaction. All Energy Sidewalk Elevators are designed to conform to local regulations. Sidewalk doors and landing gates furnished where requested.

Specifications—Hand-Operated

Machine—Is compound gearing on steel shafts, set up in yoke bearings. It is equipped with a counterbalanced brake. Drive wheel is heavy cast iron and disengages for descent of car by gravity. Main shaft is heavy steel with two iron drums. Shaft bearings are solid and removable and double bracketed to the structural guides.



Sidewalk Elevator, Type 977

Car—Is of structural steel frame braced diagonally, inlaid with heavy plank floor and a renewable top floor of hard maple, with scuffing irons at edges. Cable members are slung from underside of car bottom. Guide shoes are finished and tapped through the frame. Standard size of car is 4 x 4 ft., to fit a hatchway 4 ft. 10 in. wide by 4 ft. 2 in. front to back.

Guides—Heavy structural steel at each side, supporting machine and overhead wheels.

Overhead Wheels—Turn on steel studs bracketed to the structural guides by heavy steel gusset plates.

Cables—Flexible iron with a combined strength many times in excess of rated capacity, and with all necessary connections.

Shipping Weight—1200 lbs.

Equipment

Machine with brake; main shaft and hoist drums; two structural steel guides with main bearings and overhead wheels; platform car with fittings; hoist cables and connections.

Specifications—Electric

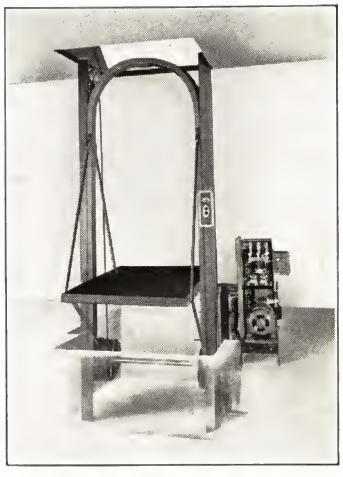
Machine—Is the direct-connected type, designed for floor mounting. It has bronze worm gear, worm cut from solid carbon steel, with ball thrust bearings on all shafts. The external gears are mounted in steel angle yokes, and the hoisting drums are machine-grooved to insure long cable life. The electric brake is positive and smooth in action.

Car—Is of structural steel frame braced diagonally, inlaid with heavy plank floor bolted to the frame and a heavy renewable top floor of hard maple, with scuffing irons at the edges. Guide shoes are finished and tapped through the frame.

Control—Is by means of pushbuttons located to suit the operator's convenience. The reversing panel has overload and non-interference features, and is protected by a metal cover. An automatic limit switch is provided to stop the machine, shut off the power and set the brake, when the car reaches either terminal landing.

Guides—Are heavy structural steel at two sides of the shaftway, supporting the machine and overhead wheels and drilled for setting connections.

Cables—Are best grade steel, of ample size and strength and with all necessary connections.



Electric Sidewalk Elevator

Equipment

Machine with motor, electric brake, external gears and hoisting drums; automatic pushbutton control units; car with steel door arch and guide shoes; guide rails with overhead wheels mounted; hoist cables and connections.

INCLINATOR COMPANY OF AMERICA

Originators and Manufacturers of Simplified Electric Passenger Lifts for the Home

313 So. Cameron Street, HARRISBURG, PENNA., U. S. A.

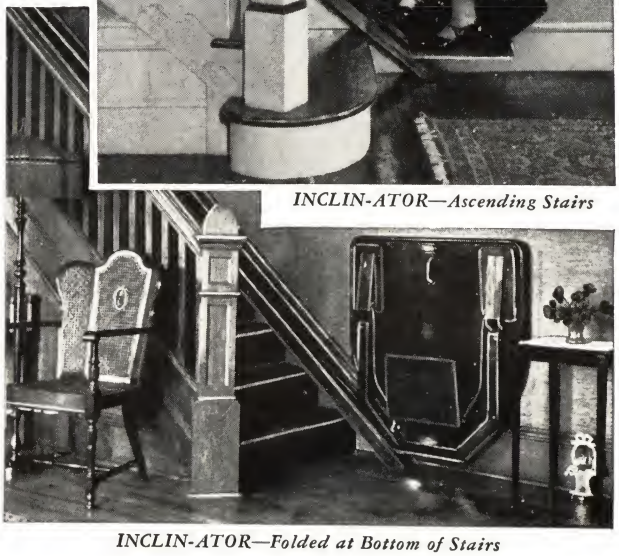
This Company was organized and incorporated in 1924 for the purpose of manufacturing and marketing Simplified Electric Passenger Lifts for the home, under the Crispen patents. These were the first passenger lifts designed to operate on house lighting currents, and are marketed under the trade names *INCLIN-ATOR* and "Elevette."

The mechanism is original and unique, and is well designed under the direction of C. C. Crispen, the inventor. In many cases better service can be given by making a study of the individual situation. Engineers are available, without obligation, direct from the factory, or from one of our many representatives throughout the country.

Because of the simplicity of these Home Elevators and the little time required for completing the installation, many of the wealthiest people of the country have been attracted to the devices. A number of these people have had a second and third installation made in their various homes, and one prominent lady has ordered the fifth equipment.



INCLIN-ATOR—Ascending Stairs



INCLIN-ATOR—Folded at Bottom of Stairs

INCLIN-ATOR

TRADE-MARK REG. U. S. PAT. OFF.

Description—The *INCLIN-ATOR* is a miniature incline elevator designed to be placed on the stairway of the private home. The car (or chair) is supported on a roller truck running within a specially constructed steel channel, secured close along one side of the stairway. It is designed with folding platform and seats, so that, when not in use and folded, it takes up very little space along the wall—only about 5 in. The installation does not restrict the customary use of the stairway.

The car is operated up and down the stairs by a small electric power unit placed in the basement or elsewhere, out of sight. It is attached to the standard house lighting current. No special power circuit is required. It is controlled by switch buttons placed on the car itself, and at both top and bottom of the stairs. Limit switches automatically stop it at the end of travel without any thought on the part of the operator. Ample strength and safety devices insure safety from every viewpoint.

The appearance is pleasing rather than otherwise. Specially finished in oak, walnut, or mahogany, to match or harmonize with the surroundings, it is recognized as a beautiful piece of furniture, fitting in perfect harmony with its environs.

Construction—The channel is $\frac{7}{64}$-in. gauge rolled steel. The car is pressed steel. The operating cable is flexible plow steel, 4200 lbs., ultimate capacity. The worm gear unit is of the back-locking type, making it impossible for the car to drift. In addition, it is equipped with an effective spring-magnetic brake.

Installation—On new construction provision can readily be made to accommodate the equipment. On existing stairways few, if any, changes will be needed. Installation is simple and does not require cutting or defacing the building. The operating mechanism may be placed on the cement floor of the basement, in a closet underneath the stairs, or at the head of the stairway (enclosed to resemble a window seat). The cable travels within the truck channel and after leaving the channel may be concealed in partition wall, or in tubing to the winding drum, over suitable sheaves.

For Obtaining Proposals, Give Following Data

Type of electric current .... volts, ... cycles, ... single phase (or D.C.)

Number of steps including top landing, ...

Height of steps, ... inches. Width of tread, less nosing .... inches.

Width of stairway .... inches. Wall space at bottom .... inches.

Facing up stairs, wall right or left side ....

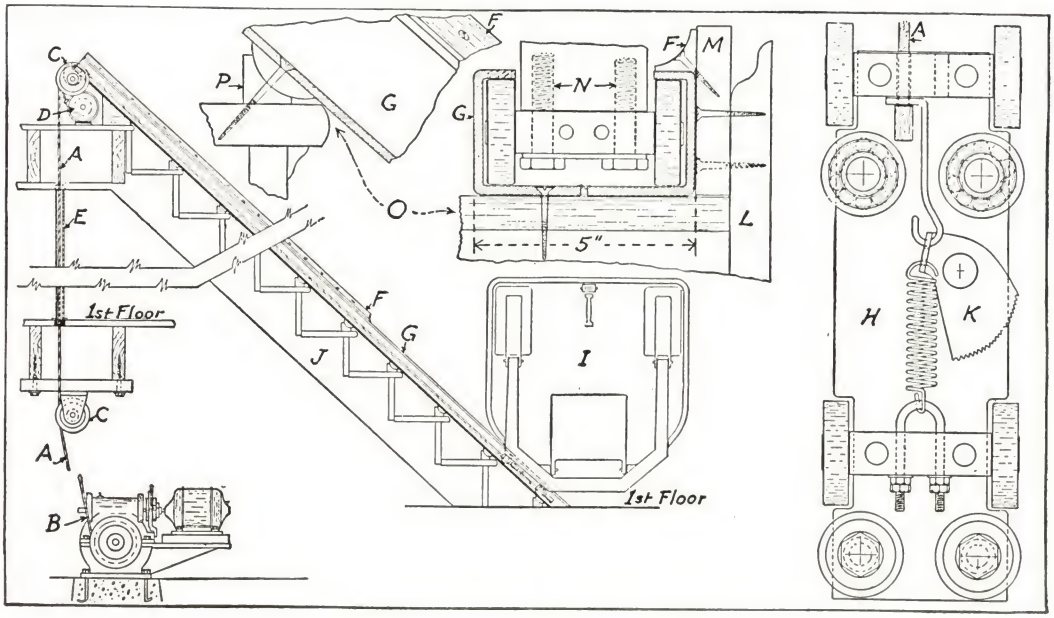
Space in basement for power unit ....

Is stairway straight? .... If not, furnish sketch.

Color or finish to harmonize with surrounding woodwork ....

Drawing Legend

A—Steel Cable
B—Power Unit
C—Idler Sheaves
D—Electric Cord Retriever
E—Pipe—inclosing cable
F—Cove Moulding
G—Steel Channel
H—Roller Truck
I—Chair-Car
J—Stairway
K—Safety Catch
L—Baseboard
M—Auxiliary Baseboard
N—Attaching Bolts
O—Step Nosing
P—Compensating Blocks





"Elevette" Stairwell Type

"Elevette"

TRADE-MARK REG. U. S. PAT. OFF.

Following the successful experience with the single rail construction, and remote location of power unit, used on the *INCLIN-ATOR,* a vertical application of the same basic principles was worked out. This unique setup was most appropriately named the "Elevette." The construction lends itself to a great variety of arrangements, making it extremely versatile.

By devising a sensitive sub-floor safety stop, the stairwell and non-inclosed lifts, with their inherent simplicity, became a realization. Further pioneering by operating the mechanism with a motor small enough to be attached to the house-lighting current, made the product revolutionary.

Whether, with the present day trend toward elevator service in the home, you are incorporating the convenience in plans for new construction, or the problem is elevator service in a home already built, you will find Inclinator Company engineers always available, without obligation, to assist in working out a solution, no matter how intricate. While practically every cab is specially built to suit the conditions, the installation is usually completed and in operation within ten days to two weeks from date of order.



"Elevette" in Shaft

ADVANTAGEOUS FEATURES OF THE "ELEVETTE"

Versatility—No standard sizes. Custom-built cars of any size and shape up to wheel-chair capacity, to fit in any space available, with one, two or three gates.

Adaptability—Cars can be built of open mesh or solid panels of steel or wood and finished to harmonize with location and color scheme of room or environment.

Economical—Initial cost only a fraction of regulation elevator construction. Operating cost only a cent or two a day.

No Overhead Construction—With the single rail truck supporting the car from the bottom, nothing is required above the car. The Power Unit is placed in the basement or other remote location.

Inconspicuous—When installed without shaft, no parts showing except car and a single vertical guide post. Car can be sent to floor above when not in use.

Dependable—Strong, heavy construction of simple design provides safe and dependable service.

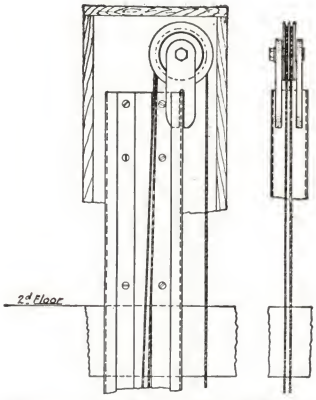
Quietness of Operation—With the Power Unit isolated, the operation is practically noiseless. New type collapsible gates are a marvel of quietness.

Ease of Operation—Send and Call buttons conveniently located at landings and within car, make operation quite simple and easy.

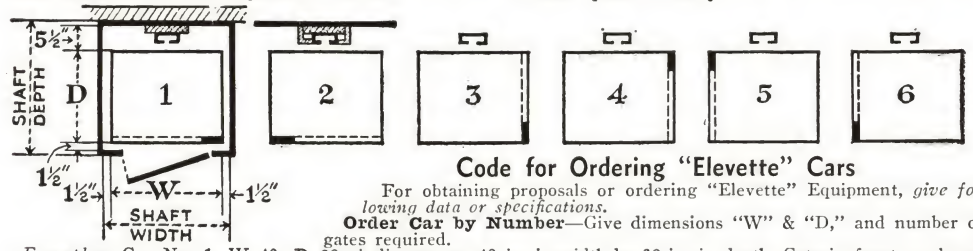
Simplicity—In design and installation. Comparatively little change or cutting required in existing homes. For new homes, cars are built to fit the hatch.

Safety Features—Back-locking Gear Unit, Slack Cable and overrun switches, and electrical and mechanical interlocks on all gates and doors. Where the car descends in the open, our Safety Stop Diaphragm is included. Any slight pressure on this sub-floor stops the car immediately.

Quick Service—An "Elevette" can be installed in from ten to fifteen days after order is received. Proposals submitted immediately by wire, telephone, or airmail special delivery.



Elevation of Supporting Column Extending Only 3 Ft. Above Top Landing



Code for Ordering "Elevette" Cars

For obtaining proposals or ordering "Elevette" Equipment, *give following data or specifications.*

Order Car by Number—Give dimensions "W" & "D," and number of gates required.

Examples: Car No. 1, W 40, D 32—indicates car 40 in. in width by 32 in. in depth. Gate in front, anchored right side. Car No. 2-3 indicates two gates, one in front and one on right side of car, both anchored left side.

Specify Dimensions—Give shaft width and shaft depth, or furnish sketch giving dimensions of floor opening or space available in open stairwell.

Car Material—Shall car be built of open mesh perforated *cane metal,* or of woven *metalace;* or of solid sides of *steel* or any *wood* selected.

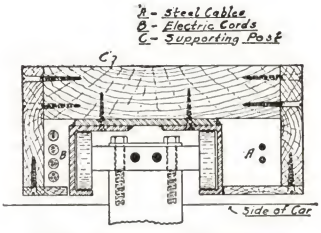
Capacity—State if for one or two persons, or large enough to carry a person on wheel-chair with attendant.

Color or Finish—Indicate white, ivory, cream, or any other color; imitated or natural wood of any type. If possible, furnish color card or wood sample.

Length of Travel—Give total height between top and bottom landings.

Number of Landings Required—State: 1st to 2nd floor, or 1st, 2nd, and 3rd floors, or basement to 3rd, inclusive.

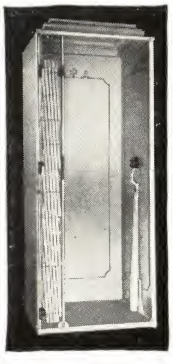
Type of Electric Current—Give voltage, cycles, phase. (Equipment adapted to standard house lighting currents. Three-phase power lines rarely employed.)



Cross-section of Supporting Column Assembly



Circular Car



Steel Car



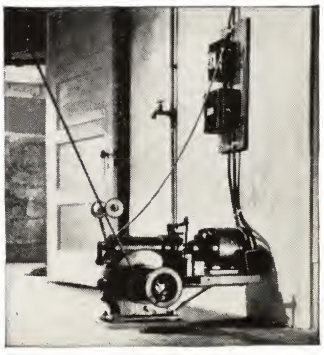
Wood Car



Cane Metal Car



Metalace Car



Power-Unit in Basement

JOHN W. KIESLING & SON, INC.

Manufacturers of Elevators, Dumbwaiters and Doors

TELEPHONE
Jefferson 3-3320

Atlantic and Rochester Avenues
BROOKLYN, N. Y.

FACTORY
BROOKLYN, N. Y.

ALBANY, N. Y., 452 Broadway
BOSTON, MASS., 859 Boylston Street
CHICAGO, ILL., 432 Sherman Street
CLEVELAND, OHIO, 9105 Woodland Avenue
DETROIT, MICH., 415 Brainard Street
ERIE, PA., 115 East 23rd Street
KANSAS CITY, MO., 3639 Paseo Boulevard
MEMPHIS, TENN., Builders Exchange
MILWAUKEE, WIS., 1100 W. St. Paul Avenue
MINNEAPOLIS, MINN., 614 Third Ave., So.
PHILADELPHIA, PA., 201 No. Broad Street
PITTSBURGH, PA., 207 Fulton Bldg.
ST. LOUIS, MO., 310 Frisco Building
SYRACUSE, N. Y., 1407 Erie Blvd., E.
WASHINGTON, D. C., 727 First St., N.W.

ENGINEERING SERVICE

We solicit the opportunity of making layouts showing plan and elevation dimensions and load reactions for proposed installations. We maintain an Engineering Department with men long experienced in the elevator, dumbwaiter and door business, qualified to make recommendations as to the type of equipment best suited to the duties required.

ESTABLISHED 1889
KIESLING
DUMBWAITERS · ELEVATORS · AND DOORS

50 YEARS
OF SERVICE

INSTALLATION SERVICE

Prices are usually quoted covering complete installation by Kiesling mechanics. Should you wish to make your own installation, we will assemble the complete equipment prior to shipment and partially dis-assemble for delivery. Blueprints and detailed instructions are furnished to permit installation by local mechanics.

PROMINENT USERS OF KIESLING PRODUCTS

M.I.T. Institute
Time-Fortune, Inc.
American T. & T. Co.
Hotels Statler
General Electric Co.
Greyhound Bus Terminals
Rockefeller Residences
F. W. Woolworth Co.
Chase National Bank
Amherst College Library
Schrafft's Restaurants
Ford Motor Co.
Bronx Eye and Ear Hospital
St. Bartholomew's Church
Chambers Funeral Parlors
Horn & Hardart
Elks Clubs
duPont Residence
Hanscom Bake Shops
General Tire Co.
The Great A. & P. Tea Co.
The Consolidated Edison Co.
International Casino
Sherwin-Williams Paint Co.
Whelan Drug Co.
Tidewater Associated Oil Co.
J. J. Newberry Co.
Thompson Restaurants
Bond Clothes Stores
S. S. Kresge Co.
Corning Glass Co.
Union News Co.
W. T. Grant Co.
St. Luke's Hospital
United Cigar Stores
Gramacy Laundry
McLellan Stores
Bickfords
Binghamton Press
Exchange Buffet
Fisher Bros. Stores
Owens-Illinois Glass Co.
Neisner Bros. Stores
Eckert Drug Co.
Vanderbilt Residence

KIESLING UNDERWRITERS' LABELLED DUMBWAITER DOOR UNITS

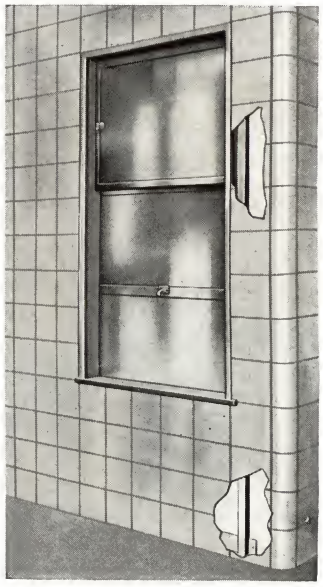
Kiesling Door Units are factory-assembled, furnished as *one complete unit* ready to be built into the masonry wall. Door sections are of *hollow metal* construction, insulated with an asbestos acoustical filler. Metal jamb with sanitary trim and sill are of pressed steel, with all corners mitred, ground, and polished. Doors can be of Steel, Stainless Steel, Monel, etc. Write for literature.



Unit No. 1
Single Door Unit



Multiple Door Unit



Unit No. 2
Combination Door Unit

Literature, Blueprints and Specifications on Request



Figure No. 101
"Electricwaiter" (Overhead Type) complete with Doors, Steel Angle Tower, and Steel Hoistway Enclosure

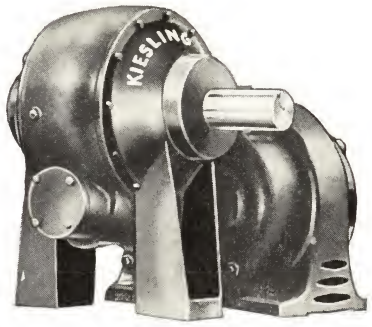


Figure No. 102
Kiesling (Uni-Gear) Motor with Timken Roller Bearings, Magnetic Brake

Dumbwaiter Hoistway Enclosures can be of sheet steel or masonry

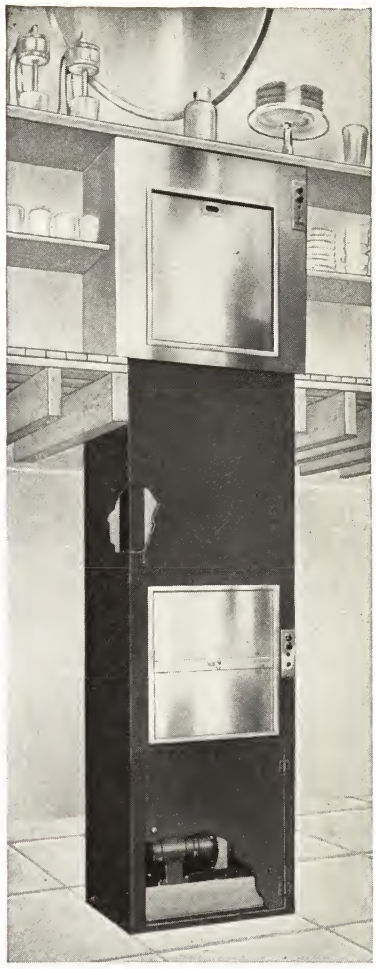


Figure No. 103
"Electricwaiter" (Undercounter Type) complete with Doors, Steel Angle Tower and Steel Hoistway Enclosure

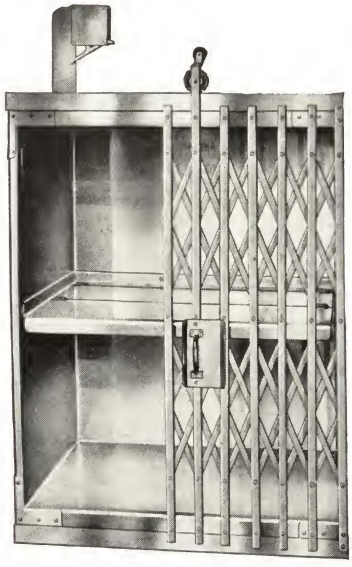


Figure No. 104
Dumbwaiter car, showing Car Gate. Cars can be of Stainless Steel or Steel, with or without shelves

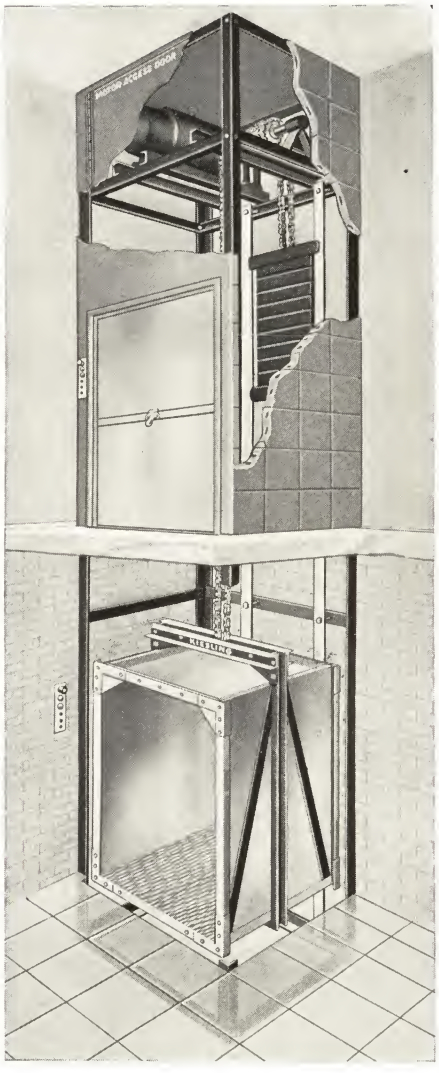


Figure No. 105
"Electricwaiter" (Heavy Duty Type) complete with Doors, Steel Angle Tower, with Masonry Hoistway Enclosure

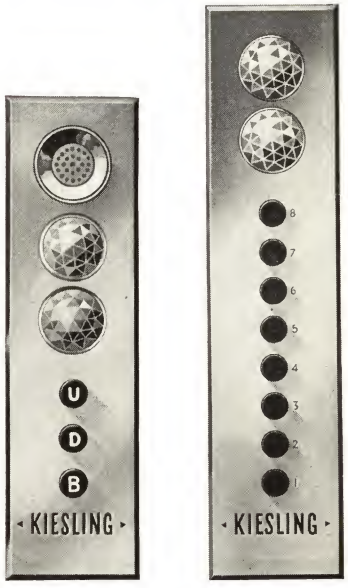


Figure No. 106
Dumbwaiter Push Button Stations, with "Light-O-Matic" Car and Door Signal Lights, Speaking Tube and Buzzer

Complete Equipment by Kiesling Limits Responsibility to One Manufacturer

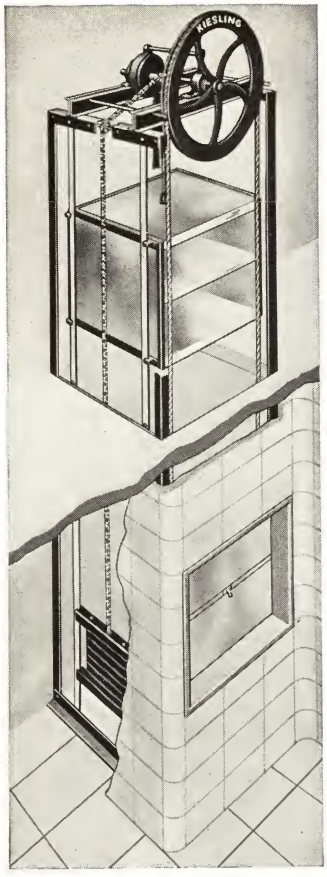


Figure No. 107
"Steel Rail" (Overhead Type) Dumbwaiter with Automatic Brake —Steel Angle Hoistway Tower

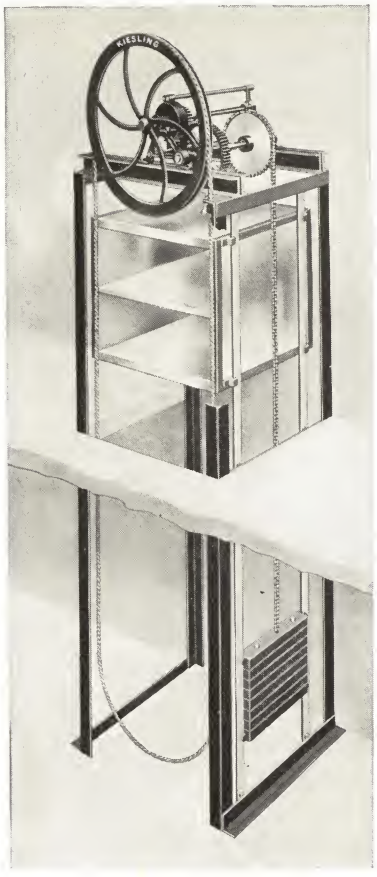


Figure No. 108
"Steel Rail" (Heavy Duty Type) Dumbwaiter with Automatic Brake, Steel Angle Hoistway Tower

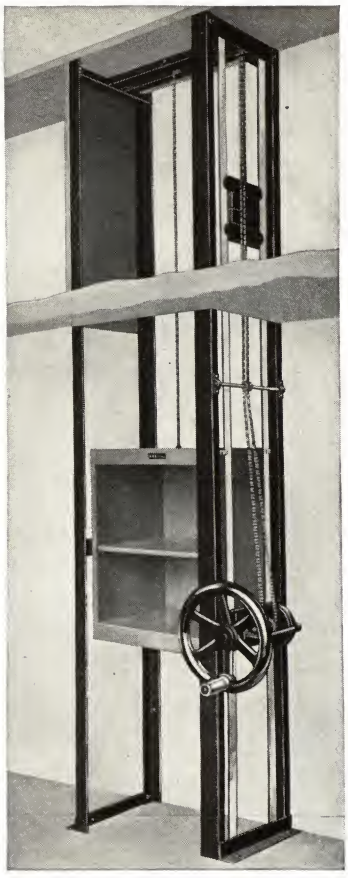


Figure No. 109
"Steel Rail" (Undercounter Type) Dumbwaiter with Automatic Brake, Steel Angle Hoistway Tower

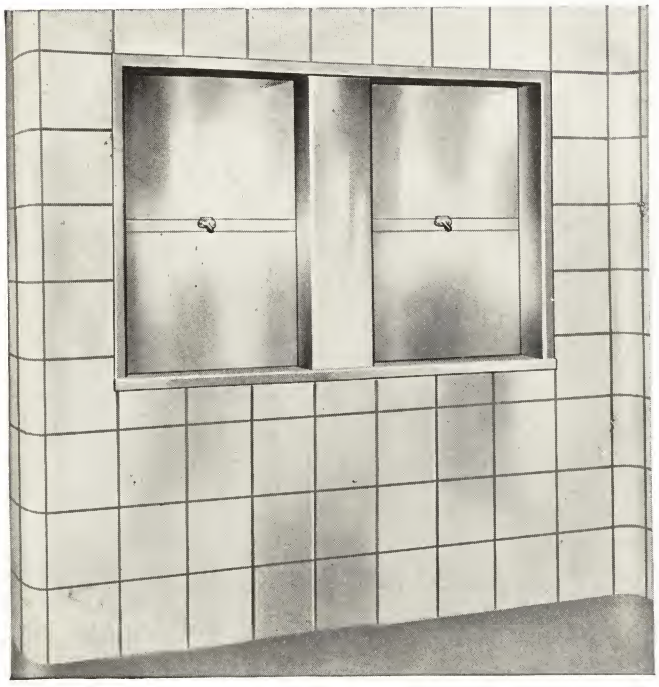


Figure No. 110
Underwriters' Labelled Hollow Metal Insulated Counterbalanced Doors with Pressed Steel Sanitary Jamb Trim and Sill — Masonry Enclosure

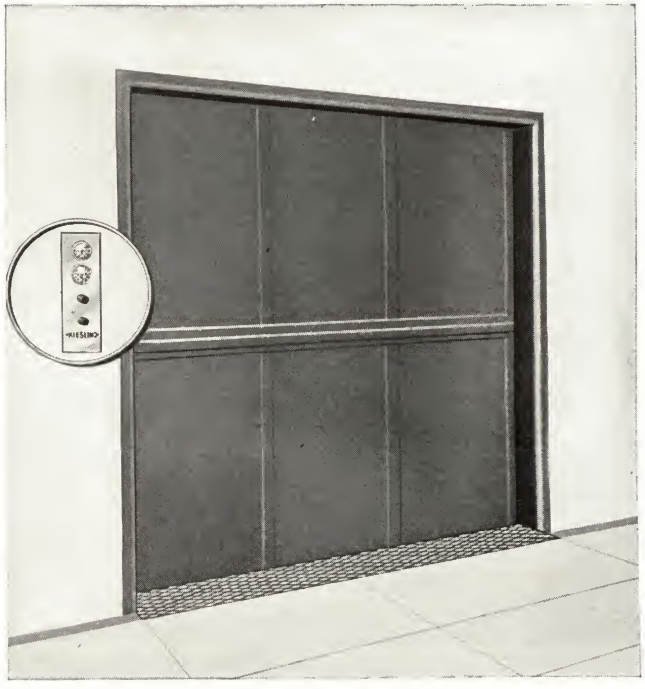


Figure No. 111
Kiesling "Self-Sealing" Bi-parting Elevator Counterbalanced Doors with Pressed Steel Jamb and Trim with "Self-Closing" Truckable Sill

Blueprints, Literature and Specifications on Request

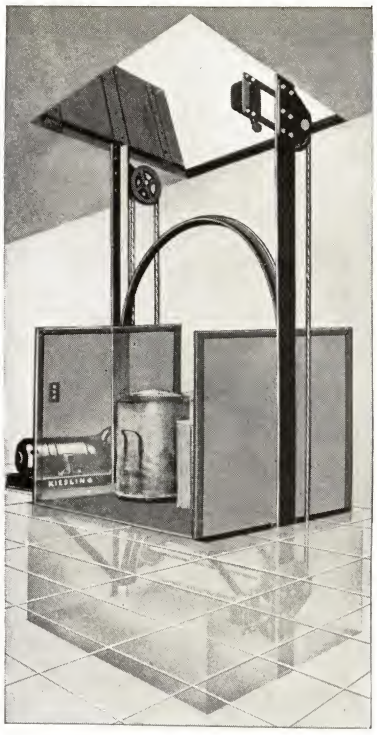


Figure No. 112
Type "FA" Electric Sidewalk Elevator, Constant Pressure Push Button Control



Figure No. 113
Bostwick Collapsible Car Gate

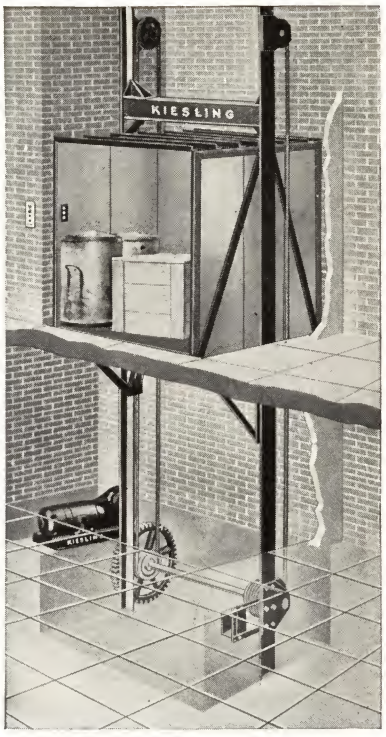


Figure No. 114
Type "SB" Freight Elevator, Car Switch or Constant Pressure Push Button Control

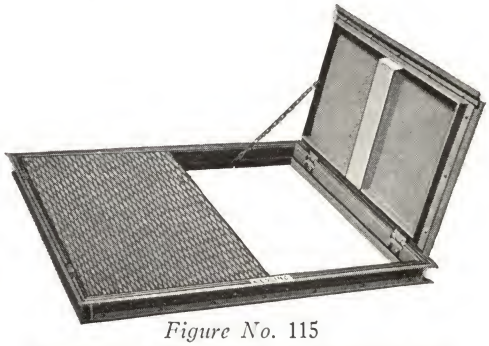


Figure No. 115
Kiesling Flush Sidewalk Doors, Watertight with Condensation Gutter — Bronze Hinges

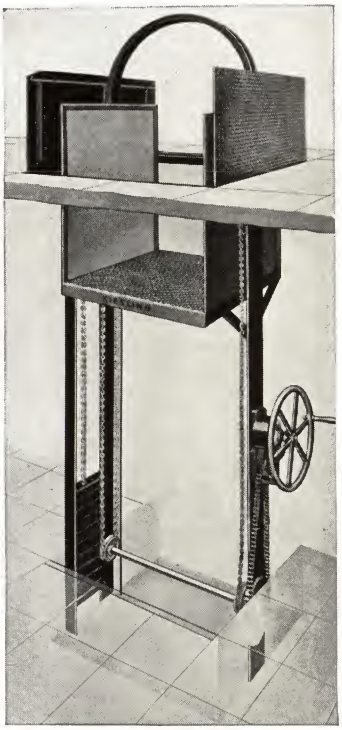


Figure No. 116
Type "D" Direct Drive Hand Power Counter-weighted Sidewalk Elevator, Automatic Brake — Ball Bearing

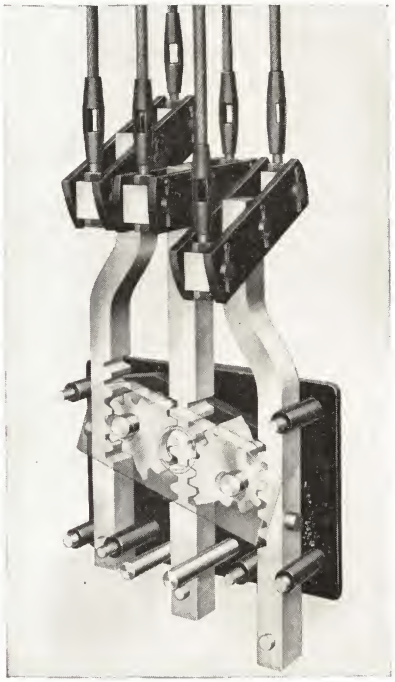


Figure No. 117
Elevator Cable Equalizer Tested and Approved by the Underwriters' Laboratories, Inc., and Bureau of Standards

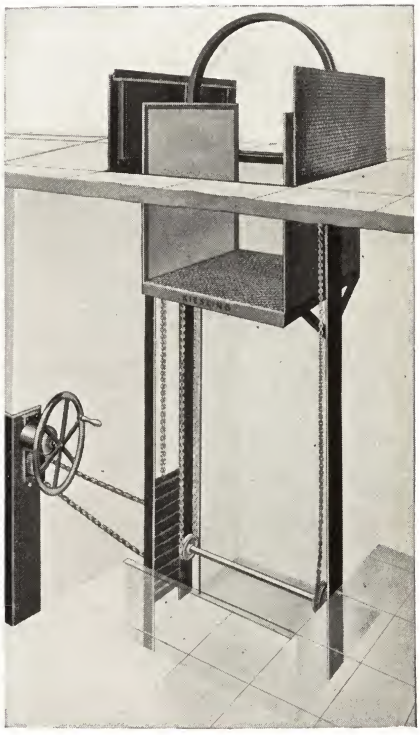


Figure No. 118
Type "O" Off-set Drive Hand Power Counter-weighted Sidewalk Elevator, Automatic Brake — Ball Bearing

ESTABLISHED 1888

D. A. MATOT

Manufacturers of Hand Power Dumb Waiters and Elevators

TELEPHONE
Lincoln 0002

1538-1546 Montana Street, CHICAGO, ILL.

REPRESENTATIVES IN MOST PRINCIPAL CITIES

Products

All types of HAND POWER DUMB WAITERS for residences, apartment houses, hospitals, restaurants, hotels, clubs, etc., made in Automatic Brake, Band Brake, and Geared Types; Roller Chain; Metal Tube, High Speed, Undercounter; also Library Book Lifts, Fuel Lifts, and Trunk Lifts.

All types of HAND POWER ELEVATORS for hospital, invalid, and freight; also Sidewalk Type.

For Refrigerator Doors and Shelving, see File Index.

Guarantee and Services

All Matot Dumb Waiter and Elevator Machines are guaranteed for five years. Repair parts will be furnished free of charge any time within that period if parts are returned to us.

Our 45 years' experience manufacturing hand power lifts is at your service in the selection of equipment best suited to specific requirements. Complete information including drawings and estimates on any of the regular or special sizes of equipment shown here will be gladly sent on request.

Installation

Complete instructions for erecting, including blue prints, are furnished with each outfit. This enables them to be satisfactorily installed by local labor. Where desired, we will install same. Although we sell machines only, and complete outfits, we strongly recommend that the complete outfit be specified. This will give best results and insure complete satisfaction.

Dumb Waiter Cars

Matot Dumb Waiter Cars are made of selected, kiln dried ash lumber, carefully machined and assembled and will withstand long, hard usage. The cars are filled, shellacked and varnished two coats.

We carry in stock all regular catalogue sizes of dumb waiter cars, equipped with one hinged or removable shelf. The No. 1 size cars are 2 ft. 6 in. high inside, and the Nos. 2, 3, 4 and 5 sizes are 3 ft. high inside. The outside height of dumb waiter cars is 6 in. higher than the inside measurements. We build to order special cars of any specified material.

Door Openings—At least one door opening in hatchway should be wherever possible 2 in. wider and 6 in. higher than car so that car can be placed in hatchway, or leave out door jamb and casing until car is placed in hatchway. Making door opening 6 in. higher than car increases the length of pull on hand rope with consequent easier operation.

To Specify

(1) State type of hatchway, whether A, B, C, D or E (as illustrated).

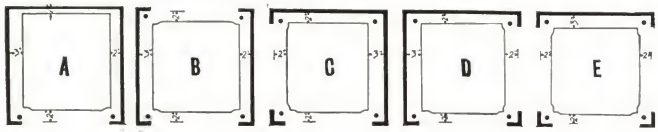
(2) Type of equipment, or whether for use in residence, hospital, factory, etc.; weight to be handled; also whether weight travels mostly up or down, or both ways.

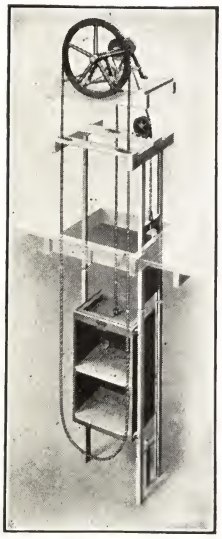
(3) Size of car, and whether inside or outside dimensions; or give us the inside measurements of hatchway in the clear, the width, depth and height. In stating the height give us the measurements from lower floor to ceiling of upper floor or highest point of hatchway in the clear.

(4) How many shelves in car? Hinged or removable?

Complete Outfit—Includes the machine mounted on platform, car, guides, counterweight, ropes, rope guides and bumpers.

Machine Only—Includes the machine, leading sheaves for types requiring same, and hand wheel.





Matot Automatic Brake Dumb Waiter Erected

Matot Automatic Brake D. W.

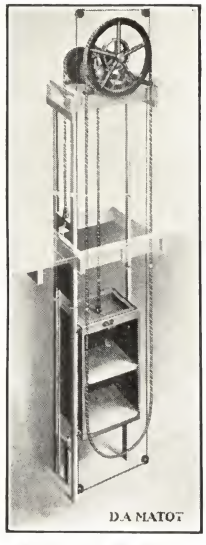
Capacities up to 75 lbs., depending on size of car as shown on table. Outfits listed are strong enough to lift a much greater load, but to do so will require more energy.

Machine is full automatic, both up and down. Brake mechanism is so designed to be fully released when car is in motion, causing no friction regardless of load or direction of travel and requires no adjustments of any kind. Load is automatically held by machine itself, without any check or brake lines. Machine is so arranged that when operator releases pull on hand rope, car stops automatically. Brake does not lock fast, but is applied and regulated by load, holding car securely at any point. The heavier the load, the more positive the brake. Roller bearings are used throughout to assure a smooth, easy running, long life equipment. Machine is guaranteed for five years and will last a lifetime.

Matot Band Brake D. W.

Capacities up to 75 lbs., depending on size of car as shown on table. Practical for use in high hatchways where a strong, reliable, rapid running dumb waiter for hard service is required. Speed in lowering or positive stops, are regulated by a partial application or a final pull on brake cord. Brake band is lined with vulcanized fiber to withstand hard usage. Practical for lowering loads as it does not require operation of hand rope, the speed being regulated by brake cord. Machine is carefully assembled and fitted with roller bearings.

Also made in geared full diameter lift type with capacities up to 250 lbs. A practical equipment combining band brake feature with large lifting capacity. Gears are of hobbed cut type.



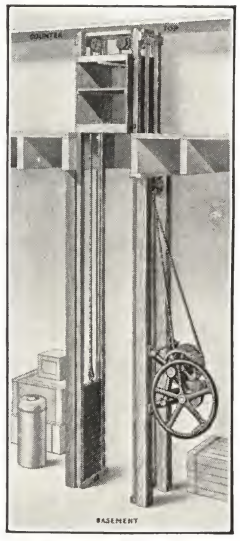
Matot H. C. Type Geared Band Brake Dumb Waiter Erected

Matot Geared Automatic Brake H. C. Type D. W.

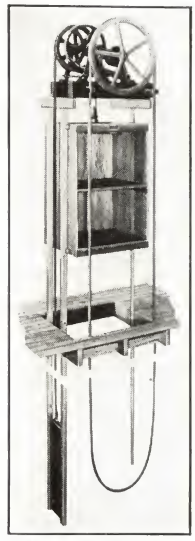
Full diameter lift wheel, hobbed cut gears. Capacities up to *250* lbs., geared according to capacity to give greatest speed, plus ease of operation. Any outfit listed on table is strong enough to lift a much greater load, but to do so will require more energy. Roller bearings throughout.

A practical equipment combining an automatic brake feature with large lifting capacity. Smooth in action and positive in brake. Full automatic both up and down. Requires no adjustments of any kind. Machine guaranteed 5 years. Gears are of the hobbed cut type having teeth uniform in size, assuring smooth and noiseless operation.

Also made in compound geared automatic type in 500-lb. capacity. A practical equipment for heavy loads combining automatic brake feature with heavy lifting capacity, easy to operate.



Matot Undercounter Dumb Waiter



Matot H. C. Type Geared Automatic Brake Dumb Waiter

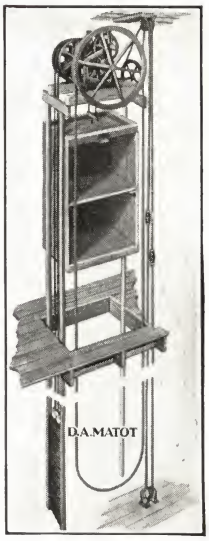
Matot Undercounter D. W.

These undercounter dumb waiters are designed to fit where lack of space precludes placing machinery overhead, which condition is sometimes encountered where space does not allow the highest part of equipment or dumb waiter car to come higher than 3 ft. over the top floor, or in some cases counter height. Machine can be placed to right, left or bottom of hatch, also hung to ceiling of lower floor and operated with hand rope. In the 50-lb. geared type machine can be made with drum to wind up cable which eliminates overhead sheaves and counterweight, as shown in the fuel lift type. The automatic brake type is 25-lb. capacity and the geared automatic brake type is 50-lb. capacity and up.

STANDARD STOCK SIZES, MATOT DUMB WAITERS

No.	Car size outside, in.		Space required, in.				Capacity, and feet pull to raise car one foot						Feet pull to raise car one foot, and pounds pull to lift capacity										Diam. hand wheel, in.	Machine space, all types, ft.-in.	Head room, all types, ft.-in.
			Single face		Double face		Automatic Brake, Band Brake and Economy Type						Geared Automatic Brake, Geared Band Brake								Compound Geared				
							6-in. sheave		8-in. sheave		9-in. sheave		Geared Automatic Brake, Geared Band Brake	Compound Geared, lbs.	100-lb.		150-lb.		200-lb.		250-lb.		500-lb.				
	Width	Depth	Width	Depth	Width	Depth	Cap., lbs.	Pull, ft.-in.	Cap., lbs.	Pull, ft.-in.	Cap., lbs.	Pull, ft.-in.			Pull, ft.-in.	Pull, lbs.	Pull, ft.-in.	Pull, lbs.	Pull, ft.-in.	Pull, lbs.	Pull, ft.-in.	Pull, lbs.	Pull, ft.-in.	Pull, lbs.			
1	20	16	25	19	25	20	48	2-8	38	2-2	31	1-9	All sizes can be had in capacities of 100, 150, 200 and 250 lbs. (See pounds pull.)	500	5-5	19	6-2	25	7-2	28	7-8	33	14-1	35	16	1-10	8-2
2	24	20	29	23	29	24	60	3-3	48	2-8	38	2-2		500	5-5	19	6-4	25	7-4	28	8-0	32	14-0	36	20	2-0	8-6
3	28	24	33	27	33	28	70	3-11	56	3-1	45	2-6		500	5-6	18	6-3	25	7-7	26	8-7	*30	14-9	34	24	2-3	8-10
4	32	28	37	31	37	32	..	..	68	3-9	55	3-0		500	5-4	19	6-3	24	7-6	27	8-4	*30	14-0	36	30	2-9	9-4
5	36	36	41	39	41	40	..	..	..	.	..	..		500	5-6	19	6-0	25	7-4	28	8-2	*31	15-0	33	30	2-9	9-4

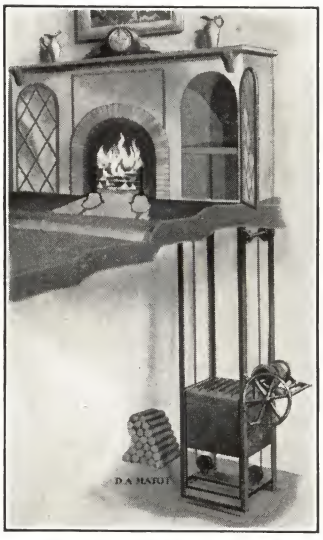
*No 3 capacity can be had up to 350 lbs.; No. 4 capacity, up to 400 lbs.; No. 5 capacity, up to 400 lbs.
Any of the outfits listed in the above table is strong enough to lift a much greater load, but to do so will require more energy.



Matot 2-speed, 2-capacity Geared Automatic Brake Type

Matot 2-Speed, 2-Capacity Hand Power D. W.

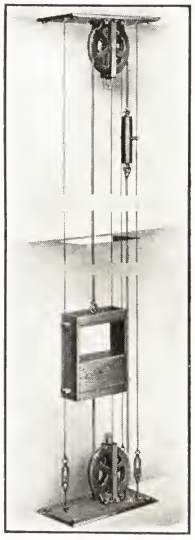
Made in any combination of light and heavy loads from 50 to 500 lbs. having geared automatic brake and band brake features incorporated as desired. A great time and labor saver where both light and heavy loads are handled, and overcomes difficulties due to slow traveling car that has machine geared for heavy loads, when in most cases light loads are used. When a heavy load is handled on slow gear, empty car can be brought back to loading point on high gear, saving time. Simple, easy pull on shifting rope changes capacity and speed; load cannot drop while shifting.



Matot Fuel Lift Installed

Matot Fuel Lifts

A most convenient arrangement for hoisting wood from basement to fireplace on floors above. Made to fill requirements.



Matot High Speed Type Dumb Waiter

Matot High Speed D. W.

A small, quick acting, rapid running outfit with wire guides. Adapted for light loads, such as copy work, messages and small articles usually passed from one department to another. Regularly furnished with cars 1 ft. 6 in. high outside. Special sizes made to order.

Furnished in three sizes: 10x6 in.; 12x8 in.; 14x10 in. Space requirements are 8 in. added to each width and 2½ in. added to each depth.

Matot Tube D. W.

Designed for use where equipment is to be placed in open, having no enclosure, as in a store or office, and where an exceptionally neat appearing outfit is desired. Also made in regular Matot Automatic Brake, Band Brake and Economy Dumb Waiter styles, with regular stock size cars, but in place of wood guides, as regularly used, metal tubes are substituted. Can also be made in geared types. Cars furnished in wood, highly polished, and can be trimmed with brass fittings. Brass or steel tubes furnished as desired.

Matot Economy D. W.

Capacities up to 75 lbs., depending on size of car as shown on table. An inexpensive dumb waiter having a spring check on hand rope. Adaptable where a moderate cost dumb waiter is wanted and where automatic brake feature is of no particular advantage and where work is not hard enough to warrant installation of a band brake equipment.



Matot Invalid Lift

Matot Invalid Lifts

This equipment is designed to convey invalids from one floor to another and is exceptionally easy to operate; in fact, a child can handle due to our system of compounding the gears. The automatic brake feature is so arranged when operator releases pull on hand rope, car automatically stops itself, loaded or empty, traveling up or down. It has, besides the automatic brake feature, additional safety devices to provide a most safe and practical outfit for the purpose intended.

Five standard sizes with cars ranging from 3 to 5 ft. square for one or two persons or invalid and chair and attendant.

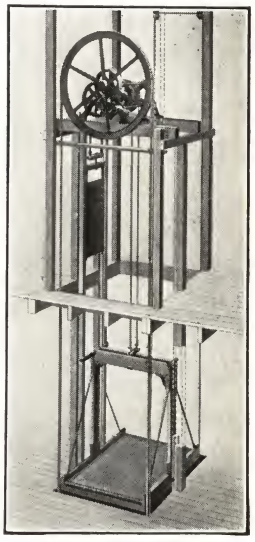
Matot Hand Power Elevators

Capacities up to 2000 lbs. geared according to capacity to give greatest speed plus ease of operation. Matot elevators are also made in two-speed, two-capacity type in any combination of light and heavy loads.

The smaller sizes are suitable for private residences as trunk lifts, larger sizes for all around use in industrial buildings, warehouses, etc. Stock cars are regularly 6 ft. 3 in. high under beam. Can be made any special size required. Cars made of hardwood well braced with iron and will withstand hard usage. Can be equipped with safety catches.

Machinery is fitted throughout with roller bearings, and as gears are hobbed cut, they have teeth uniform in size and operate most quietly. Brake band is lined with vulcanized fibre and speed in lowering, also positive stop, is regulated by a partial application or a final pull on brake cord. Machine is guaranteed for five years and will last a lifetime.

Blue prints on any elevator outfit submitted on request.



Matot Hand Power Elevator

STOCK SIZES

No.	Car outside		Space required		Hand wheel diam., in.	Mach. space	Head room
	Width	Depth	Width	Depth			
	ft.	ft.	ft.-in.	ft.-in.		ft.-in.	ft.-in.
1	3	3	3-8¾	3-5	36	3-9	10-9
2	3	4	3-8¾	4-5	36	3-9	10-9
3	4	4	4-8¾	4-5	42	4-7	11-7
4	4	4	4-8¾	4-11	42	4-7	11-7
5	4	5	4-8¾	5-5	42	4-7	11-7
6	5	6	5-8¾	6-5	48	5-1	12-1

If outfits are installed in brick or tile hatchways, the space required is 2⅜ in. more in width.

Matot Sidewalk Elevators

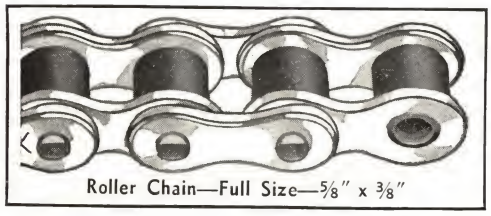
Made in five standard sizes, from 3x5 ft. square, special sizes made to order. Capacities up to 1000 lbs.

D. A. MATOT ROLLER CHAIN DUMB WAITERS

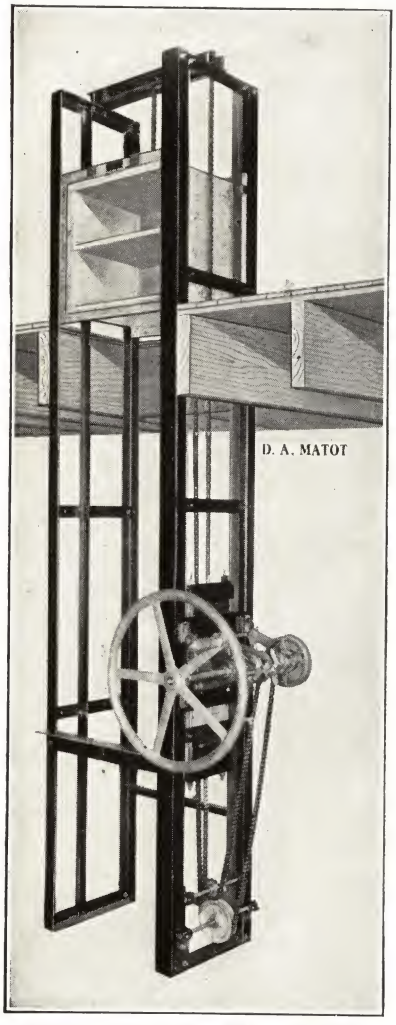
The latest improvement in hand operated dumb waiters using a heavy steel roller chain in place of the regular rope or wire rope as a hoist cable. Illustrations of chain show the heavy type used; ultimate breaking strength of chain is 5800 lbs. Roller chain can be provided on all types of hand power dumb waiters with capacities from 50 to 500 lbs. and over. Equipments can be furnished in all steel construction with either cold rolled steel guides or channel iron guides, as shown in illustrations, or all wood construction as shown on preceding pages, or in combination steel and wood constructed dumb waiters.

The undercounter type is provided with a patented automatic stopping device, eliminating the use of bumpers and unnecessary strain and jar on chain. With the automatic stop we incorporate a special rubber and metal flexible coupling to absorb jar to machine and operator when automatic stop operates. Overhead equipments can be provided with a special safety device on car.

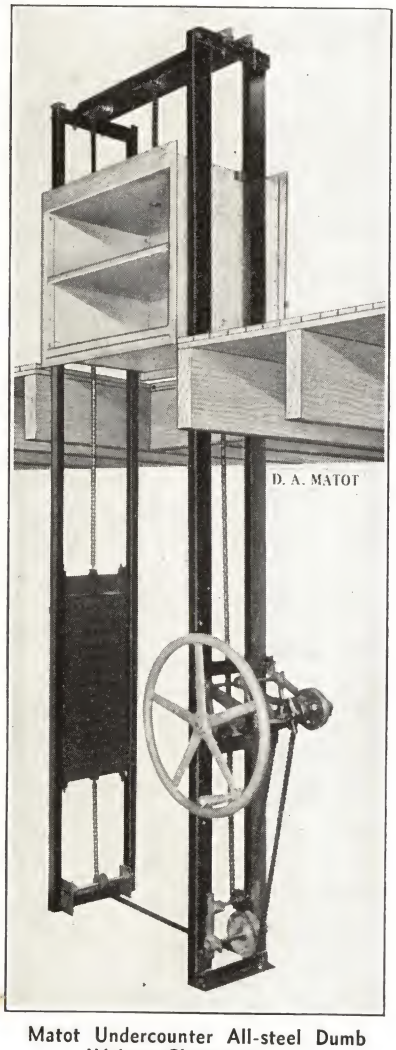
Equipments provided with the roller chain cost very little more and in most cases the same price as regular equipments, depending on capacity and size. The use of roller chain eliminates the costly replacement of rope or cable, which is largely due to friction on sides of sheaves. At no time with this type, will it be possible for car to slip, as chain is positively secured in sprocket in machine. The use of roller chain assures less friction and easier and quieter operation.



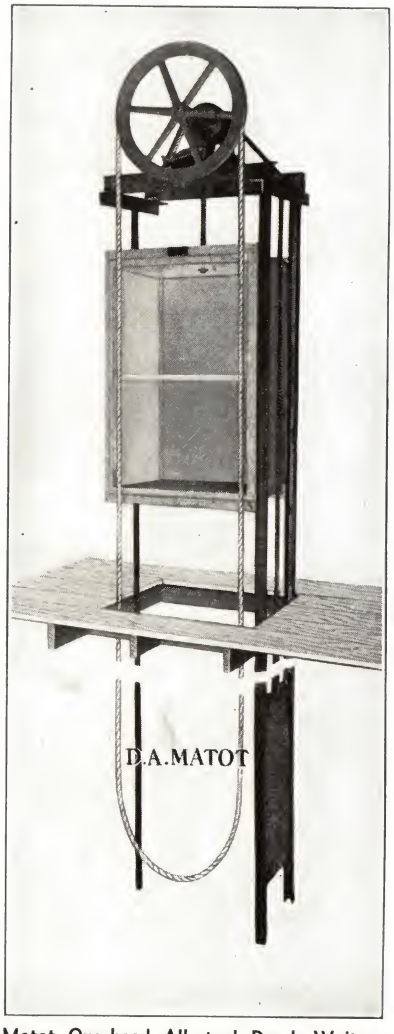
Roller Chain—Full Size—5/8" x 3/8"



Matot Undercounter All-steel Dumb Waiter; Cold Rolled Guides



Matot Undercounter All-steel Dumb Waiter; Channel Guides



Matot Overhead All-steel Dumb Waiter; Channel Guides

STANDARD STOCK SIZES UNDERCOUNTER DUMB WAITERS

No.	Car size outside			Space required				Overhead sheave space, in.	Headroom undercounter, in.
				Wood supports		Steel supports			
	Width, in.	Depth, in.	Height, in.	Width, in.	Depth, in.	Width, in.	Depth, in.		
1	20	16	27	32	18	25	18	4	31
2	24	20	27	36	22	29	22	4	31
3	28	24	27	40	26	33	26	4	31
4A	30	15	27	42	17	35	17	4	31
5A	30	20	27	42	22	35	22	4	31

Machine projects 24 in. from supports.
Machine can be placed in hatchway under car if necessary.
Special sizes furnished to fit building conditions.

OTIS ELEVATOR COMPANY

GENERAL OFFICES
Otis Building, 260 Eleventh Avenue, NEW YORK, N. Y.
SALES AND SERVICE OFFICES IN ALL PRINCIPAL CITIES OF THE WORLD
Member of The Producers' Council, Inc.

ELEVATORS AND ACCESSORIES OF ALL KINDS AND TYPES — ESCALATORS — DUMBWAITERS — STAGE AND CONSOLE LIFTS.

SKIP, MINE AND FURNACE HOISTS — COMMERCIAL STEEL CASTINGS. INCLINE RAILWAYS.

FINGER-TIP CONTROL

The extension of the field of application of Otis Signal Control now completes the line of Otis Finger-Tip Control, and makes available to architects and engineers a full line of automatic elevator operation meeting practically all service requirements in all types of building, low—moderate—or high; and either new or old.

All types of automatic operation available for passenger service are now made available for freight service, as well as two additional and simpler forms.

Finger-Tip Automatic Control is divided into several classifications to suit different requirements, as follows:

Finger-Tip Signal Control—The finest type of elevator equipment for elevators requiring an attendant. This embodies all the latest hoisting, operating, and control features, with car speeds permitted by the Codes. It is now used in all types of buildings desiring the finest forms of service. It has now been developed for geared traction elevators for all moderate speeds. This offers wide possibilities of better service for the more moderate size building, as they can now have the same type of control as their taller neighbors and so be placed in a much better competitive position. A still greater field is opened to owners of existing buildings with geared types of elevators, as this new development can be applied to such elevators at reasonable expense and without the necessity of entirely changing the machines. This will be a great incentive to modernization of elevator equipment in the older buildings and so enable them to compete with newer buildings having the latest type of equipment. The varying needs of the largest types of office buildings during the several rush hour periods of each day can be adequately met in each case by means of special controller arrangements providing adjustable express zones under a traffic handling system known as *Peak-Period Control.* Our nearest office will be glad to make studies to meet any situation. Consult our Sales Bulletins B-400 and B-4004.

Collective Control—An advanced type of push-button control now available with automatic door operation, providing highest class of service for elevators either with or without an attendant, designed primarily for apartment house or other service where an attendant is required only part of the time or not at all. Micro Self-leveling and car speeds up to 600 ft. are available.

Single Call—The original type of automatic control for intermittent service where the elevators serve only one call at a time, and operate at slow speed.

Double Button—A safe and easy type of freight elevator control for use where service conditions do not justify an operator at all times. The elevator is called up or down to a floor and then operated by constant pressure of push-buttons. The car starts when a button is pressed and stops when the button is released. Used only for moderate freight service. Consult our Sales Bulletin B-285.

Dualite Control — An improved form of constant pressure push-button control for freight elevators, with which pressure of a single button at a landing calls the car either *up* or *down* to that floor. A light indicates when the car is moving and when it arrives at the floor. Use and operation from within the car are the same as with Double Button. Consult our Sales Bulletin B-476.

MICRO SELF-LEVELING

This is a feature which may be supplied on all Otis Electric Elevators, except those of the very smallest size. This distinctive Otis two-way feature automatically levels the car at the floor landing, regardless of rope stretch, change in load, and whether or not the car would otherwise have stopped short of the landing or beyond it. Micro leveling speeds up elevator service, reduces current consumption and prolongs the life of the elevator equipment.

SPECIAL PURPOSE ELEVATORS

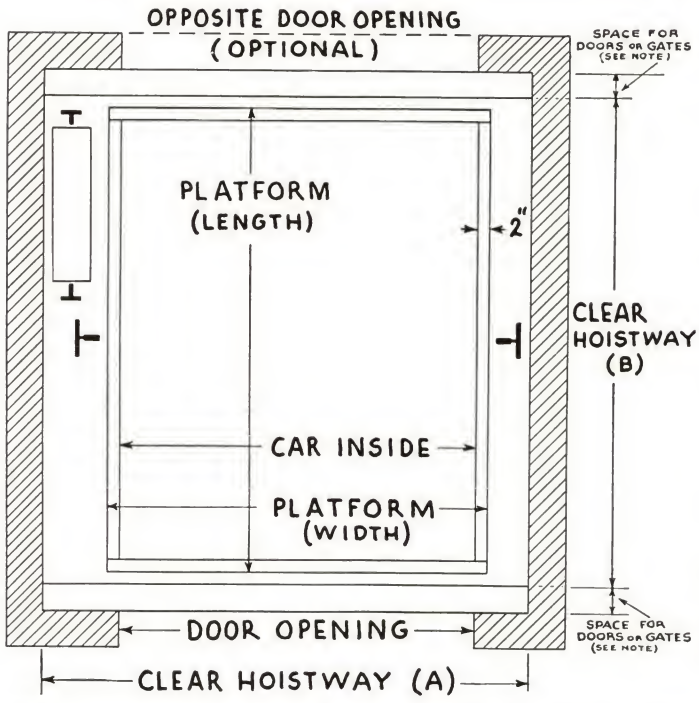
By long experience and an intensive study of layouts of elevators in thousands of buildings, with consideration as to the varying requirements of different types of buildings, it became possible to determine elevator duties and platform sizes that were in the greatest demand for certain service requirements. From these studies we have developed a number of "specification units" (special purpose elevators) which are applicable to such service. Architectural specifications that conform to these special units assure equipment that has been proven to be particularly suited to such requirements. These complete units are also available for quicker delivery than those which have to be particularly built to order.

Any of our offices will gladly give complete information as to units available. Additional units are being added as fast as it becomes possible to work them out. Data on several are shown in the following pages.

SPECIAL PURPOSE FREIGHT ELEVATORS

Otis has developed a line of freight elevators best suited for certain definite purposes. Use of these elevators assures the most efficient operation.

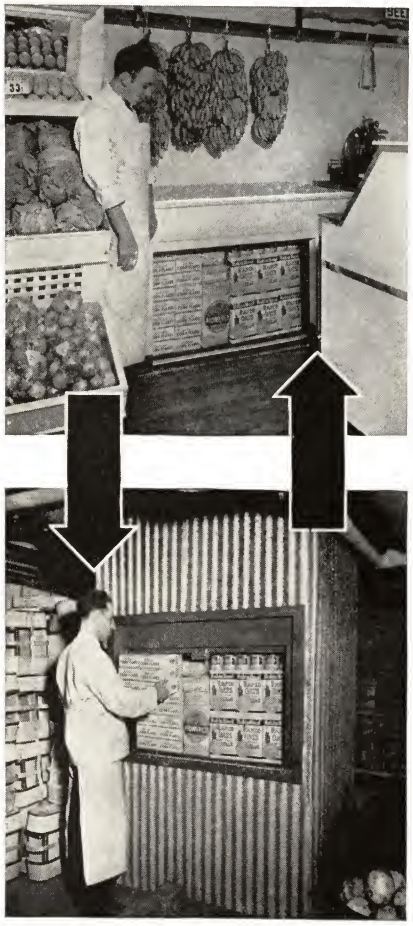
Below are shown space requirements for some of the more popular freight elevators used in warehouses, stores, mills, small factories, and similar buildings. These dimensions are for preliminary use only. The nearest Otis office will gladly provide detailed layouts showing loads, hoistway construction, elevations, etc., for any contemplated installation.



Capacity (lbs.)	Platform		Door opening	Hoistway	
	Width	Length		(A)	(B)
2500 or 3000	5′ 6″ 6′ 6″	6′ 9″ 7′ 6″	5′ 2″ 6′ 2″	7′ 0 ″ 8′ 0 ″	6′ 11½″ 7′ 8½″
4000 or 5000	6′ 4″ 8′ 4″ 9′ 4″	8′ 0″ 10′ 0″ 9′ 0″	6′ 0″ 8′ 0″ 9′ 0″	8′ 2 ″ 10′ 2 ″ 11′ 2 ″	8′ 2½″ 10′ 2½″ 9′ 2½″
6000	Garage 9′ 4″	20′ 0″	9′ 0″	11′ 6½″	20′ 2½″
8000	8′ 4″ 8′ 4″	10′ 0″ 12′ 0″	8′ 0″ 8′ 0″	10′ 4½″ 10′ 4½″	10′ 2½″ 12′ 2½″
10000	8′ 4″ 8′ 4″ 10′ 4″	10′ 0″ 12′ 0″ 12′ 0″	8′ 0″ 8′ 0″ 10′ 0″	10′ 6½″ 10′ 6½″ 12′ 6½″	10′ 2½″ 12′ 2½″ 12′ 2½″

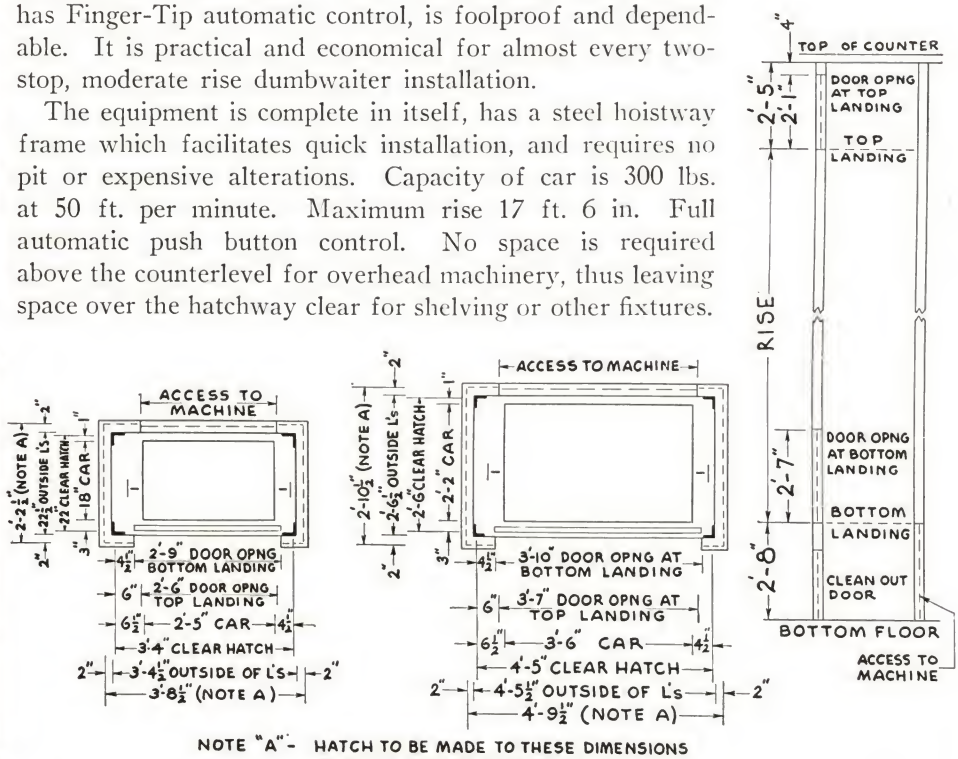
Note: A door-opening 7 ft. 6 in. high is generally used for freight service. The space required for vertical-sliding fireproof doors for this opening is 4¾ in. for floor heights 11 ft. 9 in. or more, and 6½ in. for floors less than 11 ft. 9 in. Wood slat hoistway gates require 4 in. for floor heights 13 ft. 1 in. or more, and 5 in. for floors 10 ft. 8¼ in. to 13 ft. 1 in.

UNDERCOUNTER DUMBWAITER



This electric dumbwaiter is designed for use in stores, restaurants, hotels—anywhere that economy of space and installation is desirable. The Undercounter Dumbwaiter has Finger-Tip automatic control, is foolproof and dependable. It is practical and economical for almost every two-stop, moderate rise dumbwaiter installation.

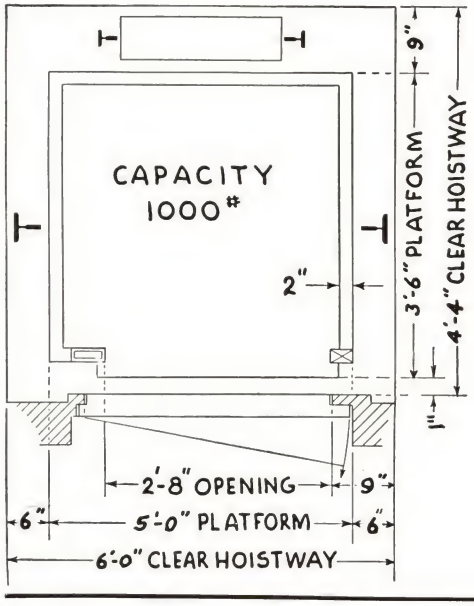
The equipment is complete in itself, has a steel hoistway frame which facilitates quick installation, and requires no pit or expensive alterations. Capacity of car is 300 lbs. at 50 ft. per minute. Maximum rise 17 ft. 6 in. Full automatic push button control. No space is required above the counterlevel for overhead machinery, thus leaving space over the hatchway clear for shelving or other fixtures.

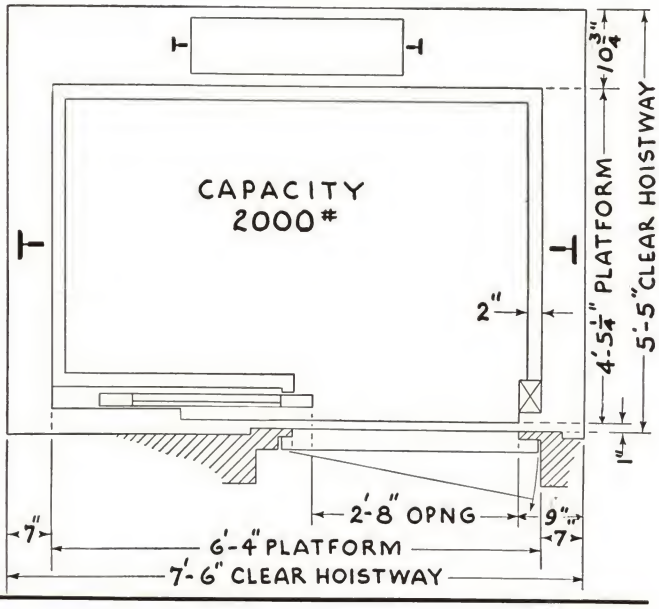


NOTE "A"- HATCH TO BE MADE TO THESE DIMENSIONS IF BUILT BEFORE STEEL TOWER IS ERECTED

APARTMENT HOUSE PASSENGER ELEVATORS

A complete line of apartment house elevators covers practically every traffic requirement. Below are shown two standard layouts for automatic elevators for apartment houses of three to six floors. The 1000-lb. capacity car covers minimum elevator requirements, the 2000-lb. capacity car provides greater convenience to tenants and may be more easily equipped with power-operated doors and other improvements.





PERSONAL-SERVICE ELEVATOR

A New Otis Elevator for Private Residences

The Otis Personal-Service Elevator provides all advantages of commercial Otis elevators, in a smaller size at a lower price. It is an elevator through and through, and with reasonable care will give years of trouble-free service.

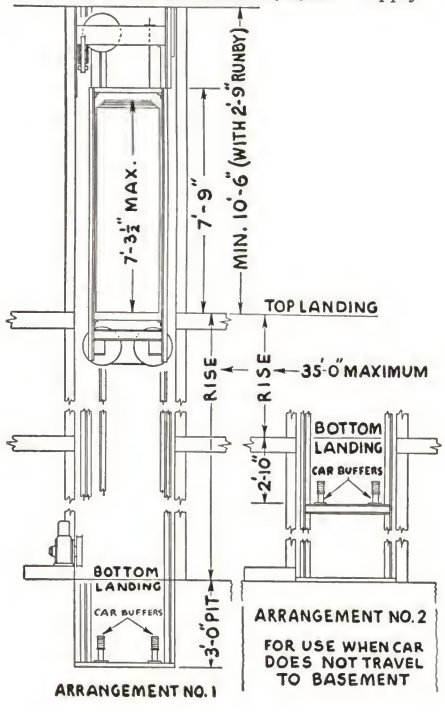
Designed especially for private homes, the Personal-Service Elevator offers quiet, dependable, Finger-Tip automatic elevator service with complete safety. The equipment may be readily installed in existing residences, requires no unsightly penthouse or extensive alteration work, and uses any standard alternating-current house-lighting circuit for power supply.

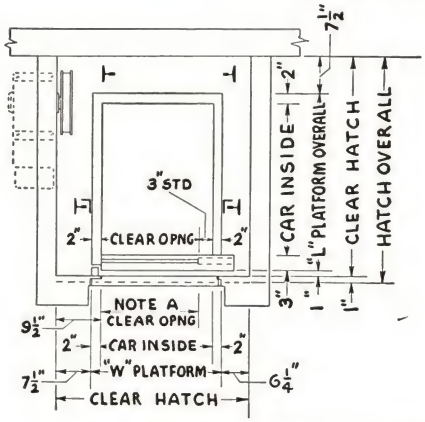
Steel Frame—Entire elevator is supported by steel frame mounted on basement floor and extending to top of hoistway.

Attractive Cars—Cars of wood or metal are available in a variety of finishes and designs.

All-steel Car Frame—The all-steel car frame with instantaneous-acting, roll-type safety device, is underslung to permit installation where overhead height is limited.

Push-Button Control—Entirely automatic, elevator is operated by momentary pressure of buttons in car or at each landing.





NOTE "A" - CLEAR OPENING 2'-8 1/8" FOR OTIS STANDARD 3'-0" SWING DOOR

	W	L
MINIMUM CAR SIZE A6092A BROKEN ROPE SAFETY	2'-2 1/2"	2'-7"
MINIMUM CAR SIZE 6092F GOV. OPER. SAFETY	2'-2 1/2"	3'-0"
MAXIMUM CAR SIZE EITHER SAFETY	3'-2"	3-8 1/2"



OTHER TYPES OF EQUIPMENT AND PRODUCTS

Elevators

Sidewalk Elevators—For the handling of freight, ashes, etc. between basement and street levels. Sturdy labor-saving equipment, embodying the latest safety and operating features.

Hydraulic Elevators—Direct lift plunger elevators for sidewalk freight and other short-rise service.

Hand-Power Elevators — Used where service requirements are light and do not justify the expense of power-driven elevators. A complete line is offered for prompt delivery.

Dumbwaiters

Electric Dumbwaiters — For hotel, apartment and other types of dumbwaiter service requirements including high-speed transfer in stores and banks. This type is in addition to the Undercounter type. Consult our Sales Bulletin B-453.

Escalators

For use wherever large numbers of people are to be carried a short vertical distance in the least possible time, and without crowding or waiting. Three widths are available with passenger capacities of 4000, 6000 and 8000 per hour. The operating cost is low. Escalators are a profitable merchandising factor in department stores and very useful for banks, restaurants, and other busy enterprises on the second floor of a building. The new streamline model with metal balustrading and unlimited possibilities for special architectural treatment of the balustrading is becoming increasingly popular.

Elevator Accessories

Otis manufactures all elevator accessories to the same high standards that govern construction of the basic apparatus. The purchaser thus gains the advantage of a single, unqualified guarantee covering the construction and operation of the complete elevator system.

Cars—Elevator cars which reflect painstaking craftsmanship are designed and manufactured by Otis to meet every requirement. This activity embraces the co-ordinated effort of architectural car designers; art metal foundries and finishing departments; specially equipped car shops and experienced field erectors. Many attractive basic designs are available or the services of our architectural car designers may be had without charge for the execution of special designs.

Door Closers—Otis Manually-Opened Door Closers and Interlocks—of strong and rugged construction—are of the latest improved designs for all types of service.

Door Operating Devices — Otis Power-Operated Door Devices materially reduce the time required at landings and speed up elevator service.

Door Hangers—Otis Door Hangers are of the ball bearing sheave type, providing quiet operation and long life.

Signal Systems—Otis Signal Systems are designed and built as an integral part of the elevator installation and not as a separate system merely assembled with the elevator. They contain a number of improvements which eliminate false stops of the elevator, save waiting time and speed up the service. Otis Elevator Dispatching Systems are also available. Signal fixtures are of modern and pleasing designs, in many finishes, to match the surroundings.

ENGINEERING SERVICE

Otis Elevator Company offers an engineering service for determining the number, type and size of elevators for any particular building. Preliminary drawings showing hoistway sizes, clearances, overhead supports, loads on beams and all other details will be gladly furnished.

This is a regular Otis service, based on nearly 90 years' experience in building more than half the world's elevators. Even for the most inexpensive type of passenger or freight elevator it is your assurance of an elevator of adequate size, properly located, using stock equipment wherever possible. This service is available without obligation simply by calling the nearest Otis office.

MODERNIZATION

Pioneer in the modernization field, Otis has long specialized in this type of work. New improvements have been so designed that almost every one is adaptable to older equipment. Special methods have been developed for economically installing new cars, doors and other visible parts. Such changes often produce surprisingly good results at moderate cost. The experience of the manufacturer is especially valuable for this type of work, and here again Otis recommendations are yours for the asking.

OTIS MAINTENANCE SERVICE

This service, backed by the entire engineering and technical staff of the Company, is available for owners of Otis elevators. Under a contract agreement, we assume the entire care and repair of the elevators at a reasonable flat monthly rate. This service is complete in every particular and is unsurpassed in efficiency, experience and facilities. It gives assurance that the elevator will continue to give the fine service built into it. All parts of the equipment are standardized and are readily available at all Otis offices.

Inspection, adjustment and repair services are provided at standard rates.

ESTABLISHED 1903

F. S. PAYNE CO.

Elevator and Dumbwaiter Manufacturers

GENERAL OFFICE AND WORKS

CAMBRIDGE, MASS.

BRANCH OFFICES

PROVIDENCE, R. I. BOSTON, MASS. LOWELL, MASS. FRANKLIN, MASS. NEW HAVEN, CONN.

Products

ELECTRIC ELEVATORS: Passenger and Freight types for all classes of service. Sidewalk Elevators and Ash Hoists.

ELECTRIC DUMBWAITERS and BOOKLIFTS: All sizes, capacities and speeds.

HYDRAULIC ELEVATORS and DUMBWAITERS: All sizes and capacities.

CONTROL SYSTEMS and ACCESSORIES.

PAYNE

TRADE-MARK

Facilities and Service

For 35 years this company has manufactured, designed, installed and maintained fine elevators and dumbwaiters. Payne apparatus is completely built in our own plants at Cambridge and Franklin, Mass.

The advisory services of a group of skilled technicians are available without charge or obligation. At all offices are available competent mechanics to perform any elevator service.

Typical Installations

For any building in New England there is an efficiently engineered Payne Elevator or Dumbwaiter. Payne machines are made in many sizes, each built in both traction and winding drum types, and also available with various modifications for special purposes. Motors from ½ to over 50 hp. are used to cover the range of duties.

Each of our 3,493 wiring diagrams represents a distinct requirement for which a Payne Controller has been designed and built; the number increases daily. The variety of our installations is almost unlimited in the field covered and the following list shows only a few of the possible applications.

Freight

Chapman Valve Co., Indian Orchard, Mass.
20,000 lbs. Car 12′x12′ Auto. Push Button
Counterbalanced Doors Semi-Leveling

U. S. Gypsum Co., Charlestown, Mass.
16,000 lbs. Car 8′x18′ Auto. Push Button
Counterbalanced Doors Semi-Leveling

Crompton & Knowles, Worcester, Mass.
12,000 lbs. Car 8′x12′ Car Switch Control
Full Automatic High Speed Gates

H. P. Hood & Sons, Charlestown, Mass.
10,000 lbs. Car 15′x8′ Auto. Push Button
Auto. Counterbalanced Doors Semi-Leveling

The Foxboro Company, Foxboro, Mass.
8,000 lbs. Car 8′x10′ Auto. Push Button
Counterbalanced Fire Doors

Pitney-Bowes Meter Co., Stamford, Conn.
6,000 lbs. Car 8′x10′ Constant Pressure
Counterbalanced Doors Button Control

First National Stores, Providence, R. I.
6,000 lbs. Car 8′x10′ Auto. Push Button
Counterbalanced Doors Self-Leveling

American Woolen Company, Winooski, Vt.
5,000 lbs. Car 8′x10′ Car Switch Control
Semi-automatic Landing Gates

Arlington Mills, Lawrence, Mass.
5,000 lbs. Car 5′x10′ Car Switch Control
Semi-automatic Landing Gates

Union-Leader Pub. Co., Manchester, N. H.
4,000 lbs. Car 6′x7′ Auto. Push Button
Counterbalanced Fire Doors

Seamless Rubber Co., New Haven, Conn.
4,000 lbs. Car 8′x8′ Car Switch Control
Counterbalanced Fire Doors

Warren Telechron Co., Ashland, Mass.
2,500 lbs. Car 6′x8′-6″ Auto. Push Button
Counterbalanced Fire Doors

Connecticut Power Co., Middletown, Conn.
2,000 lbs. Car 6′x5′-6″ Car Switch Control
Counterbalanced Fire Doors

Wellesley College, Wellesley, Mass.
1,000 lbs. Car 3′x6′ Auto. Push Button
Single Swing Steel Doors

Passenger

Hospital Type

New Haven Hospital, New Haven, Conn.
150 f.p.m. Cars 6′x5′ Auto. Push Button
Manual Sliding Doors Self-Leveling

New England Baptist Hosp., Boston, Mass.
100 f.p.m. Cars 5′x8′ Auto. Push Button
Auto. Sliding Doors Self-Leveling

C. V. Chapin Hospital, Providence, R. I.
100 f.p.m. Cars 5′-4″x8′-4″ Push Button
Auto. Car Doors Self-Leveling

Mt. Desert Is. Hospital, Bar Harbor, Me.
100 f.p.m. Car 5′-6″x8′-0″ Push Button
Auto. Sliding Doors Self-Leveling

Wm. W. Backus Hospital, Norwich, Conn.
85 f.p.m. Car 5′-4″x8′-0″ Push Button
Auto. Sliding Doors Self-Leveling

Residence Type

Farnham House, Yale University
100 f.p.m. Car 3′-0″x4′-8″
4 floors Push Button

President's House, Harvard University
70 f.p.m. Car 2′-8″x4′-0″
3 floors Push Button

Mrs. A. B. MacColl, Providence, R. I.
40 f.p.m. Car 3′x3′
3 floors Push Button

Francis T. Maxwell, Rockville, Conn.
40 f.p.m. Car 4′x4′
2 floors Push Button

Miscellaneous Passenger Service

144-5 Tremont St., Boston, Mass.
400 f.p.m. Cars 5′-9″x4′-0″ Car Switch

Federal Building, Rutland, Vt.
350 f.p.m. Car 6′-6″x4′-10″ Car Switch
Variable Voltage Control Self-Leveling
Automatic Car and Landing Door Operation

I. J. Fox, Inc., Boston, Mass.
350 f.p.m. Cars 6′-4″x6′-4″ Car Switch
Variable Voltage Control

Orient Insurance Co., Hartford, Conn.
300 f.p.m. Cars 6′-9″x5′-4″ Car Switch

Miscellaneous Passenger Service (Continued)

Gardner Building, Providence, R. I.
300 f.p.m. Cars 5′-2″x7′-0″ Car Switch

National Life Ins. Co., Montpelier, Vt.
250 f.p.m. Cars 6′x5′ Car Switch

Street Building, New Haven, Conn.
200 f.p.m. Car 5′-2″x4′-9″ Car Switch

Cadillac Automobile Co., Boston, Mass.
200 f.p.m. Cars 6′x5′ Dual Control

Harvard Trust Company, Cambridge, Mass.
150 f.p.m. Car 4′-6″x5′-0″ Push Button
Auto. Sliding Doors Self-Leveling

New Old South Church, Boston, Mass.
150 f.p.m. Cars 6′-4″x5′6″ Dual Control
Automatic Car Doors; Manual Landing Doors

Auburn Savings Bank, Auburn, Me.
125 f.p.m. Car 5′-2″x5′-1″ Dual Control
Automatic Car Doors; Manual Landing Doors

City Hall, Middletown, Conn.
100 f.p.m. Car 5′-2″x6′-0″ Car Switch

Newton Savings Bank, Newton, Mass.
100 f.p.m. Car 4′-2″x3′-10″ Push Button
Automatic Car and Landing Door Operation

Dr. B. Harrison Ragle, Boston, Mass.
75 f.p.m. Car 4′-3″x3′-7″ Push Button
Automatic Car and Landing Door Operation

Dumbwaiters

Liberty Mutual Insurance Co., Boston, Mass.
200 lbs.@200 f.p.m. 125′ rise; 10 landings

Sterling Memorial Library, Yale University
200 lbs.@200 f.p.m. 116′ rise; 16 landings

Ritz-Carlton Hotel, Boston, Mass.
150 lbs.@200 f.p.m. 120′ rise; 14 landings

First National Bank, Boston, Mass.
150 lbs.@150 f.p.m. 41′ rise; 4 landings

Rhode Island Insurance Co., Providence, R. I.
150 lbs.@100 f.p.m. 85′ rise; 8 landings

Baker Library, Dartmouth College
200 lbs.@75 f.p.m. 60′ rise; 10 landings

Phillips Exeter Academy, Exeter, N. H.
500 lbs.@50 f.p.m. 13′ rise; 2 landings

Bridgeport Hospital, Bridgeport, Conn.
300 lbs.@50 f.p.m. 35′ rise; 4 landings

Bishop DeGoesbriand Hosp., Burlington, Vt.
200 lbs.@50 f.p.m. 40′ rise; 5 landings

Note: The characteristic details of most of the above installations were chosen to meet specific requirements. We solicit the opportunity to study your own needs and submit our suggestions without obligation.

MEMORANDA

ROTARY LIFT COMPANY

Designers and Builders of Hydraulic Lifting Devices

1055 Kentucky Avenue, MEMPHIS, TENN.

OFFICES OR REPRESENTATIVES AND DISTRIBUTORS IN PRINCIPAL CITIES

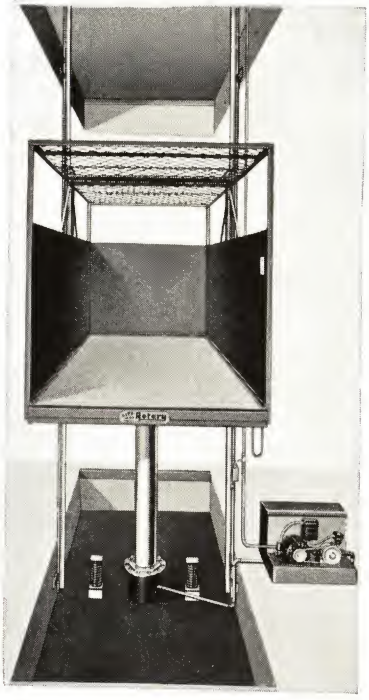
Originators of the Hydraulic Lift for Automobiles

Rotary MEMPHIS

Over 35,000 Rotarys in Service Today

Write for Data Sheets and Catalogs

Don Graf Data Sheets giving complete layout details on freight, passenger, sidewalk elevators and power dumbwaiters available on request. Complete catalogs on all products also gladly furnished. Write for your copy.



Freight and Passenger Elevators

Car Size and Capacity—Must be determined by the application.

Speed—For *single story* travel a speed of 25 to 40 f.p.m. recommended. For *two story* travel (average 25 foot rise) a speed of from 40 to 60 f.p.m. recommended.

Recommended Operation—*Electric oildraulic* operation, although a little higher in first cost, rapidly pays for itself in economy of operation.

Control—Hold-down or full automatic push-button control, with or without self-leveling, available for Electric Oildraulic operation. Rope control is available for all three types of operation.

Rotary Elevators and Power Dumbwaiters

Maximum Travel of 30 Ft. or Less—Within this range Rotary Elevators afford a combination of economy and performance advantages unequalled by other types of equipment.

Low Installation Cost—No penthouse or other overhead structure required . . . load bearing columns in side walls are unnecessary . . . loads are *pushed* up—not pulled up.

Low Operation Cost—Power required only when elevator rises . . . descent by gravity. Overall efficiency greater than for other types.

Low Maintenance Cost—Because of rugged simplicity and few moving parts. No cables to fray and break, no complicated mechanism to get out of order; no counterweights, etc. Upkeep is negligible.

Low Initial Cost—Because of lack of complicated mechanisms, pulleys, cables, counterweights, cogs, etc.

The Ultimate in Safety—All units built in accordance with ASA Code. Speed of descent is always under absolute hydraulic control.

Three Types of Operations—(1) ***Electric Oildraulic***—Operates by electrically pumping oil under pressure into the jack to raise elevator . . . descends by gravity. Preferred because of positive operation, and high efficiency.

(2) ***Air Oildraulic***—Operates by air forcing oil under pressure from a separate tank into the jack . . . descends by oil returning from jack into tank.

(3) Aquadraulic—Powered by water pressure from city main. Unattractive for anything but low capacity, infrequent use. Maintenance greater than for other types.

Sidewalk Elevators

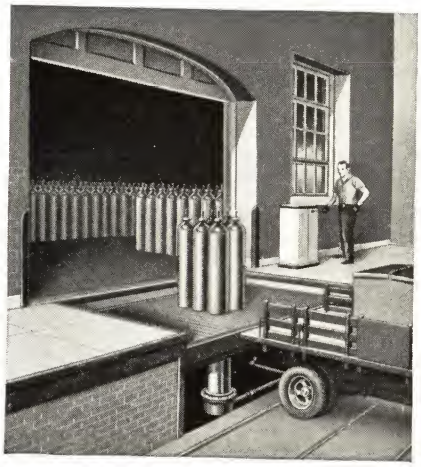
Car Size—Usually is 4 ft. by 5 ft. Other sizes available.

Capacity—Usually 1500 through 2500 lb.

Speed—20 f.p.m. suggested.

Type of Operation and Control—The same as recommended on Freight-Passenger Elevators.

Travel—Usually *travel several feet above sidewalk level;* easily arranged, as shown in illustration, making Rotary preferable for this type of application.



Other "Rotary Lift" Products

Levelators (Ramp Eliminators) and Tabelators (Work Elevators)—These shorter travel hydraulics (usually with a rise of from 2 through 5 ft.) are revolutionizing the feeding of machines, loading trucks, etc. Specifications upon request.

Hydraulic Auto Lifts—Furnished in the Roll-on or Free-wheeling types . . . air or electrically operated.

Bus and Truck Lifts—Furnished in the Free-wheeling type and available in either single or double plunger models. Capacities through 44,000 lb.

Write for complete descriptive catalogs.



SEDGWICK MACHINE WORKS

Manufacturers of Dumb Waiters, Elevators, Hoists and Lifts

TELEPHONE
WAtkins 9-4033

152 West 15th Street
NEW YORK, N. Y.

FACTORY
POUGHKEEPSIE, N. Y.

NATIONAL REPRESENTATION
CHICAGO CLEVELAND LOS ANGELES DETROIT BOSTON KANSAS CITY
AND OTHER PRINCIPAL CITIES

Products

HAND POWER DUMB WAITERS and ELEVATORS; ELECTRIC DUMB WAITERS, ELECTRIC RESIDENCE ELEVATORS, ELECTRIC SIDEWALK ELEVATORS; CORRESPONDENCE LIFTS; STAIR TRAVELORS.

Dumb Waiters for residences, apartments, stores, hotels, restaurants, hospitals, libraries; High Speed, Automatic Brake, Band Brake and Geared Dumb Waiters; Compound Geared Dumb Waiters; Tube Dumb Waiters; Under-counter Dumb Waiters, Book Lifts, Interfloor Office Lifts for mail, cash, etc.; Residence Fuel Lifts; Trunk Lifts; Mortuary Lifts; Gravity Drops.

Residence Elevators; Individual (invalid) Elevators; Stair Travelors, Freight Elevators; Sidewalk Elevators; Hospital Elevators; Garage (automobile) Elevators; Ash Hoists, Hatchway Hoists, and specially designed Lifting Equipment.

SEDGWICK *Dumb Waiters - Elevators* FOR ALL PURPOSES

Regarding Specifications

Whenever possible consult us before writing specifications. We cannot attempt to include in this catalog complete specifications covering the many types and arrangements of Sedgwick Dumb Waiters and Elevators, but we recommend where specifications are required immediately, the following be used:

Furnish (and install) where shown on plans (one) Sedgwick (name type of equipment) Dumb Waiter (Elevator) in accordance with the manufacturer's blue prints and specifications which shall be submitted to the architect for approval.

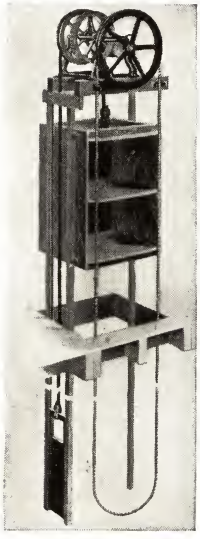


Fig. S3. Type FDCG Dumb Waiter

Type "FDCG" Geared

(Reg. U. S. Pat. Off.)

Automatic Brake Dumb Waiters

(For average loads up to 75 lbs. and capacity of 200 lbs.)

Full diameter hoist wheel permits cable to lead directly to car and counterweight, eliminating deflecting sheaves. Machine cut spur gears. Brake adjustable for wear and self-regulating.

Anti-friction steel roller bearings, steel hand wheel and lift wheel shafts, substantial machine frames and steel brace rods.

Widely used in hotels, restaurants, stores, clubs, libraries, schools, churches, hospitals and elsewhere.

Sufficient lifting power for comparatively heavy loads.

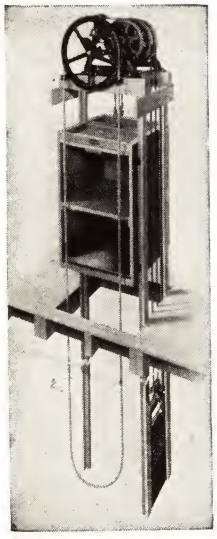


Fig. S4. Sedg-Versal Dumb Waiter

"Sedg-Versal"

(Reg. U. S. Pat. Off.)

Compound Geared Dumb Waiters

(For average loads up to 150 lbs. and capacity loads of 500 lbs.)

For heavy loads or where needs cannot be determined in advance.

By using two sets of interchangeable machine cut spur gears the equipment can be adapted for lighter loads and greater speeds. Equipped with automatic or band brake.

Two full diameter hoist wheels, double safety cables, car and counterweight cable equalizers, metal reinforced car bottom and other features contributing to easy operation, safety and durability.

Widely used in banks, bakeries, hotels and schools.

Automatic Brake Dumb Waiters

(For average loads up to 25 lbs. and capacity loads of 75 lbs.)

Dependable, smooth and quiet service. Quality construction throughout. Anti-friction steel roller bearings, steel shafting and other refinements. Brake automatic in both directions, holds car stationary at any point.

Three guide runs.

Generally suited to service requirements in private houses and apartments.

Sedgwick Tube Dumb Waiters

For use where enclosures are not desired or required and appearance is important.

Any capacity desired.

Tubes of steel, brass or monel metal.

Cars of wood or any metal, as preferred.

Special folder illustrating various arrangements will be gladly sent with blue prints and specifications.

Under-Counter Dumb Waiters

**Hand or electrically operated.*

Available in any desired capacity. For service where there is insufficient headroom for overhead machine. Widely used in restaurants, cafeterias, soda fountain stores, and similar establishments where available space is limited. An inconspicuous and convenient method of saving time and labor.

Consult with us when this type equipment is required.

Standard Sizes and Dimensions

The standard car sizes of Sedgwick Dumb Waiters are given below but special sizes and arrangements can be built to meet unusual needs.

No. 1—20 in. wide, 16 in. deep
No. 2—24 in. wide, 20 in. deep
No. 3—28 in. wide, 24 in. deep
No. 4—32 in. wide, 28 in. deep
No. 5—36 in. wide, 36 in. deep

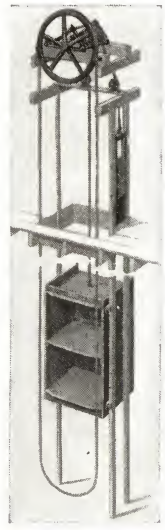


Fig. S1. Automatic Brake Dumb Waiter

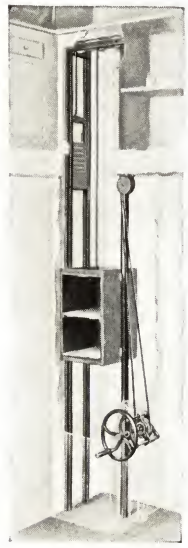


Fig. S5. Under-Counter Dumb Waiter

**See pages 2 and 3 for additional information on electrically operated dumb waiters*

SEDGWICK ELECTRIC "ROTO-WAITER"

The Modern Word for Full Automatic Electric Dumb Waiter Equipment

In addition to all the elements of full automatic service, the unique design of the Roto-Waiter permits the use of a motor operating in one direction only for two landing installations, eliminating the complicated control required for reversible motors.

The upward and downward movement of the car is controlled by an endless steel roller chain drive which prevents any possibility of over-travel. Gravity starts the car in either direction reducing the starting torque, current consumption and permitting the use of a small sized, compact motor.

Advantages of Design and Operation

Compactness—Requires only minimum space. Extravagant allowances for clearances are unnecessary.

Durability—Each unit is factory built and tested under extreme load conditions at the factory and guaranteed years of trouble-free performance.

Adaptability—The Roto-Waiter may be adapted to individual conditions. Machine may be located at top, bottom, side or back of unit. Car may open on one, two or three fronts and may serve under-counter or standard terminal at upper landing. Accurate landings of cars are made at all times.

Safety—No over-travel is possible with the Roto-Waiter. It is the only safe type of electric dumb waiter for under-counter installation. Electric door interlocks require doors to be closed while car is moving. The quality of design, materials and workmanship assure safety.

Simple Operation—There is only one push button to press at each landing.

Moderate Price

The original cost of the Roto-Waiter is economical. 25% is saved by the ingenious use of standard non-reversible motors. About 50% of the control parts ordinarily needed are eliminated. Only one-third of moving parts and contacts formerly required are needed. The gravity starting feature and more efficient application of power permit the use of a smaller horsepower motor with obvious saving.

Easy and Economical Installation

Easy installation is due to the self-supporting, self-contained and completely assembled construction. Easily and quickly installed by local mechanics without specialized experience. Wiring mounted in place ready for current connection.

Roto-Waiter Specifications *(For 2-Stop Installations)*

Machine—The motor shall be single speed, non-reversible Sedgwick Roto-Waiter Type with worm gear drive mounted as one unit. Worm made from chrome nickel steel, machine finished, hardened, ground and lapped. Worm gear wheel shall be made from cast manganese bronze machine finished, ground and lapped with high carbon nickel steel drive shaft revolving in Timken roller bearings. Motor shall be mounted on steel base secured directly to steel angle guide framework. Self-aligning bearing shall be located between motor and driving sprocket.

Worm gear drive shall operate in separate compartment filled with special lubricant, providing automatic lubrication for all machine parts subject to wear.

The electro-magnetic brake shall be adjustable so as to provide accurate floor stops with all loads and also adjustable to compensate for wear. Brake shall be gravity and spring set, with adjustable tension magnetically released and energized only when motor is running. Motor shall be controlled by the brake action. Brake shall be arranged with double shoes having improved oversize brake lining.

The standard steel roller chain shall be hardened and ground and shall run over steel sprocket with phosphor bronze bushing revolving on steel stud and steel driving sprocket keyed to the worm gear shaft. Steel cable shall be connected to master pin on chain by special attachment properly clamped. Chain drive shall be endless to prevent over-travel.

Continued on next page

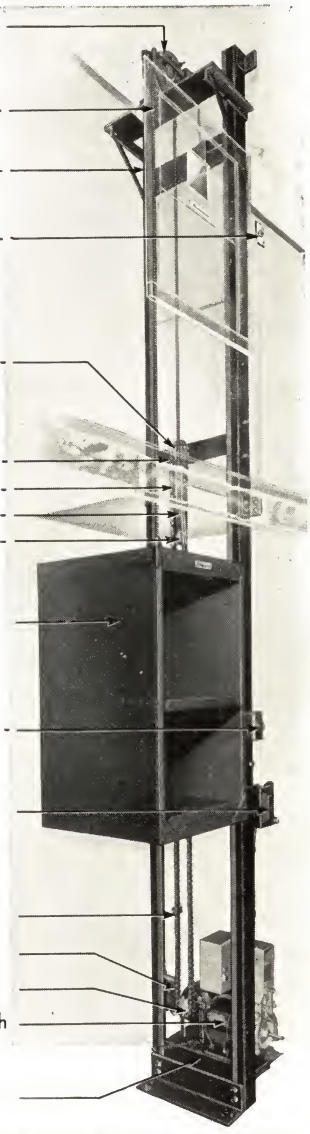
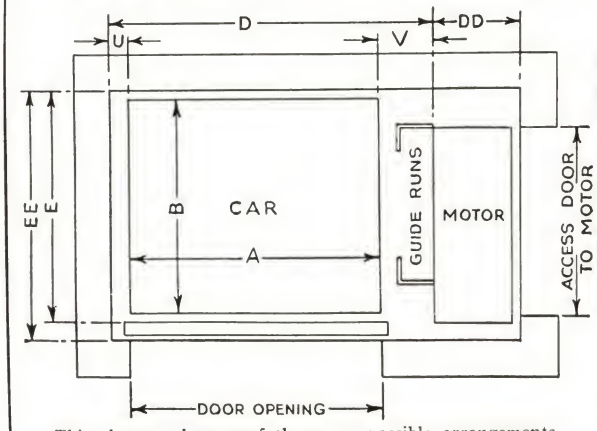


Fig. S9. Phantom View of Roto-Waiter Serving Standard Height Door Opening at Upper Level



This shows only one of the many possible arrangements

CHART OF SIZES (INCHES)

No.	1	2A	2B	3	4	4B	5B	5C
A	12	24	24	28	32	34	36	36
B	16	20	20	24	28	30	36	36
D	20½	32½	32½	36½	41	44	46	46
E	19	23	23	27	31	33	39	39
U	2½	2½	2½	2½	2½	2½	2½	2½
V	6	6	6	6	6½	7½	7½	7½
DD	11	11	13	13	14	15	15	15
EE	21	25	25	29	33	35	41	41
Capacities, lbs.	25	75	100	150	225	300	400	500

Dimensions D & E=net clear shaftsizes.

Dimensions DD=motor spaces.

Dimension EE allows 2 in. for vertical sliding doors by others. Other types of doors require different clearances. Consider individually.

Roto-Waiter Specifications (Cont.)

Control—The control shall be of the full automatic type permitting car to be called and dispatched from either landing level by momentary pressure on the push buttons located at both floors. Landing switch and cams shall be provided to automatically stop car at proper levels. Operating mechanism shall be so designed that motor does not start against load.

Current—Suitable electric current shall be brought to the machine by the electrical contractor.

Car—The car shall be of heavy gauge steel reinforced substantially for heavy duty and fitted with one solid shelf. Car shall be suspended by special extra flexible steel hoisting cable running over a machined cast iron sheave revolving on ball bearings mounted on steel platform bolted to steel guide framework.

Guide Rails—Guide rails shall be steel angles, machine finished, rigidly braced and secured together by steel tie rods at 5-ft. intervals.

The steel angle guide assembly shall be installed in one single section if possible and, to provide for this, the general contractor shall leave one shaft wall open until this equipment has been placed in position.

Overload Safety and Slack Cable Switch—An overload safety device and slack cable switch shall be provided to prevent the overloading of car beyond a predetermined and adjustable point, and to shut off current if the car is caught and held in its up or down movement.

Door Interlocks—Door interlocks shall be provided for each door to render operation impossible when a door is open and to prevent the opening of doors, except the one at which the car is at rest.

Capacity—Standard capacities range from 25 to 500 lbs.
When capacity is 300 lbs. or more, add counterweight specifications.

Counterweight—Shall be of the adjustable type with cast iron sections secured together by steel tie rods of substantial dimensions. It shall balance car and portion of load so as to place minimum load and strain on machine, requiring minimum electric current. Counterweight guide shoes shall be lined with special high speed babbitt metal and shall be adjustable to take up wear.

Speed—Approximately 50 ft. per minute

Installation—By the manufacturers, the SEDGWICK MACHINE WORKS, 150 West 15th Street, New York, or authorized local representative.

Note: Special specifications covering doors and enclosure conforming to the individual conditions, and to be supplied by others or by us, will be furnished gladly upon request.



Fig. S10. Roto-Waiter in Steel Shaft



Fig. S12. Outside Appearance, Standard Height Door Opening

"Roto-Waiter" Type Electric Dumb Waiter for Under-Counter Service

For installations where the requirements of service demand delivery of food or merchandise beneath and behind a counter the under counter arrangement of the Sedgwick Electric "Roto-Waiter" is ideal equipment. Top of car can come within 1 in. of counter. Widely used in restaurants, hotels, clubs, hospitals, etc. (See illustration S11.)

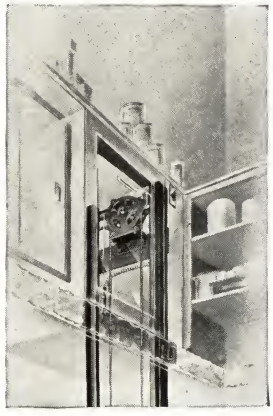


Fig. S11. Phantom View of Roto-Waiter Serving Under Counter Landing

Doors and Enclosures

We can supply dumb waiter doors and also hoistway enclosure if desired. A special construction of steel sheets mounted on a steel angle tower has the advantages of being self-supporting, providing ample strength to carry the dumb waiter load and occupies little space. (See illustration S10.)

All-metal Equipment

Sedgwick Dumb Waiters and Elevators, both electric and hand power can be supplied with Monel, Alleghany Metal, Steel or other suitable metal cars. Metal guide rails can also be furnished if desired. Sedgwick Electric Roto-Waiters are regularly equipped with steel cars and steel guide rails.

REPRESENTATIVE INSTALLATIONS OF "ROTO-WAITER" EQUIPMENT

Wesleyan University, Middletown, Conn.—McKim, Mead & White, Architects
King's County Hospital, Brooklyn, N. Y.—Le Roy P. Ward, Architect
Stouffer's Restaurant, New York, N. Y.—Dwight James Baum, Architect
The Garden Grille, Inc., Akron, Ohio—Harry Frank, Architect
Billings Hardware Co., Billings, Mont.—Toltz, King & Day, Architects
Coal Valley Hospital, Montgomery, W. Va.—Warne, Tucker & Silling, Architects
Hotel McAlpin, New York, N. Y.—Meyers Minott & Co., Architects
R. H. Macy & Co., New York, N. Y.—Starrett & Van Vleck, Architects
Liggett Drug Co., Providence, R. I.—Walter T. Williams, Architect
Union News Co., Chicago, Ill.—Fellheimer & Wagner, Architects
Eagles' Home, Cleveland, Ohio—Carmichael & Millspaugh, Architects
Civil Courts Building, St. Louis, Mo.—The Plaza Commission, Inc., Architects

SEDGWICK ELEVATORS AND LIFTS FOR SPECIAL SERVICES

High Speed Package and Correspondence Lift

Especially designed for rapid service between two or more floors where letters, orders, prints, books, cartons and other light loads must be transmitted from one department to another. Also used for quick handling of money between cashier's desk and sales stations on other floors. This high speed lift is reasonably priced, costs nothing to operate and will give years of service without maintenance expense. Attractive in appearance, occupies little floor space and requires no enclosure. Blue prints and specifications upon request.

Sedgwick Fuel and Log Lifts

A modern convenience to serve fireplaces on one or more floors. Brings fuel close to the point of use. Sedgwick Fuel Lifts for light duty; Log Lifts for heavier loads.

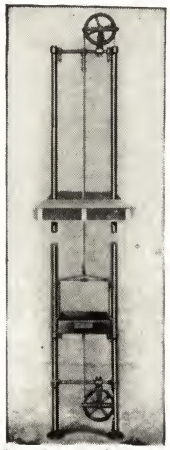


Fig. S2. High Speed Correspondence Lift

Sedgwick Mortuary Lifts

Provide an easy means of carrying caskets and other loads from one floor to another. Readily installed, cost nothing to operate and can be furnished in size and style to meet practically any requirement.

Sedgwick Sidewalk Elevators

Electric or hand power, designed for dependable and economical handling of merchandise between basement and grade level and for ash removal. Details of all types will be furnished upon request.

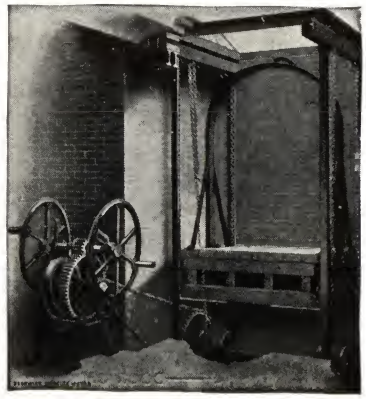
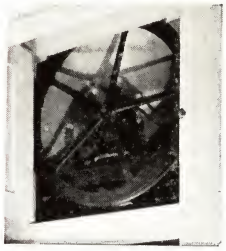


Fig. S8. Sidewalk Elevator Type "M"

SEDGWICK RESIDENCE ELEVATORS

Hand Power Residence or Invalid Elevators



The automatic brake individual elevator is designed for those who cannot or should not climb stairs and can be easily operated with absolute safety by any person. There are six standard sizes with cars ranging from 30 ins. to 5 ft. square, accommodating one or two persons, or invalid in wheel chair with an attendant. Special sizes built to order. The entire equipment is so carefully designed and constructed that about 4 lbs. of pull on the hand rope will raise or lower car and full load. For this particular service the Sedgwick Individual Elevator is the most satisfactory and economical outfit obtainable. (See Fig. S13 left.)



Fig. S13. Sedgwick Hand Power Invalid or Residence Elevator

Electric Residence Elevators

Where the requirements of service are more in the line of general passenger duty we strongly recommend the use of the electric residence elevator. Designed on the "Roto-Drive" principle, this equipment embodies all the advantages of full automatic service, and, at the same time, has been so greatly simplified as to be practical for private house service without the necessity of constant inspection and maintenance. Operating mechanism and control require a minimum amount of space above car. (See Fig. S14 right.) New, unique safety features. Special types to meet all needs and conditions.





Fig. S14. Sedgwick Electric Residence Elevator—Close-up Showing Car



Fig. S15. Sedgwick Electric Residence Elevator—Installed in Open Stairwell

When an Open Stairwell Is Available

When an open stairwell is available, the Sedgwick Electric Stairwell Type Residence Elevator may be installed without defacing the home and without need for costly alteration work. The car travels on an inconspicuous single guide rail construction. (See Fig. S15 left.) The hand power elevator can also be arranged for stairwell use.

The machine may be located in the basement or in a closet under the stairs.

Operates on Light Circuit

No special power lines or expensive wiring are required for Sedgwick Electric Residence Elevators or Stair-Travelors. They may be operated on ordinary electric light current. If 220-volt power service is available, it is, of course, preferable. As the electricity is only used when the car is in motion, the cost of operation is only a few cents a day.



Fig. S16. Sedgwick Electric Residence Elevator—When No Enclosure Is Desired on Lower Floor

When No Enclosure Is Desired on Lower Floor

When space does not warrant building an enclosure on the lower floor, a Sedgwick Electric or Hand Power Residence Elevator may be installed with an enclosure on the second floor only.

In this arrangement, the car and counterweight travel on guide rails set against one wall, between which there is a counterweight shield. (See Fig. S16.)



Fig. S17. Sedgwick Electric Stair-Travelor

When a Straight Flight of Stairs Is Available

When a straight flight of stairs is available connecting the floors to be served, the Sedgwick Electric Stair-Travelor may prove the ideal solution to the floor to floor transportation problem.

The Stair-Travelor consists of a carrier with two hinged seats and footrest traveling on a steel rail at one side of the stairs. When not in use, the seats and footrest fold against the carrier, occupying only 7 ins. from the side wall and do not interfere with the ordinary use of the stairs. (See Fig. S17.)

Licensed under Inclinator Company Patent.

SEDGWICK SERVICE

The Sedgwick Service Department offers architects the facilities of an engineering organization properly equipped for planning, constructing and installing vertical transportation equipment, and will assist architects in determining the selection of equipment to give best results under specific conditions.

Installation—Prices are quoted covering installation complete by experienced Sedgwick mechanics or we will supply equipment with blue prints and complete instructions for installation by local mechanics.

Literature on Request

We have complete catalogs on Sedgwick Dumb Waiters and Elevators available on request. These catalogs are particularly useful to the architect or builder as they contain charts showing all measurements necessary for the installation of equipment.

Guarantee

All Sedgwick equipment is fully guaranteed against defects in workmanship and materials and is noted for long trouble-free service.

THE SHEPARD ELEVATOR COMPANY

Pioneer Manufacturers of Ball Bearing Electric Elevators

2413-2431 Colerain Avenue, CINCINNATI, OHIO

REPRESENTATIVES IN ALL PRINCIPAL CITIES

SHEPARD

GEARED and GEARLESS PASSENGER and FREIGHT ELEVATORS. DUMBWAITERS, SIDEWALK HOISTS and RESIDENCE ELEVATORS. ELEVATOR CONTROL and SIGNAL SYSTEMS of all types. RECTIFIER and VARIABLE VOLTAGE CONTROLLERS a specialty.

As a pioneer in the development of the modern elevator, Shepard is credited with the early application of ball bearings to elevator machines—the perfection of safety equipment and other important steps in the progress of this industry.

Shepard is one of the few elevator manufacturers who build the complete equipment, including motors and controllers, in their own shops. This advantage is reflected in the high quality of Shepard equipment and in its long and satisfactory performance.

Shepard skillful designing is exhibited in the hoisting machine, brake, controller and floor selector. Dynamically balanced parts and flexible couplings, eliminate noise and vibration.

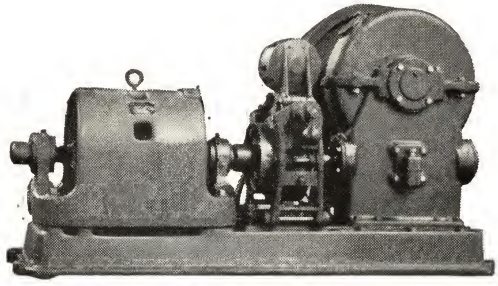
Many of the leading office buildings, hotels, hospitals, apartment buildings and industrial plants in all sections of the country are equipped with Shepard Elevators. Our Engineers will co-operate with you in the solution of your elevator problems.

Typical Passenger Installations

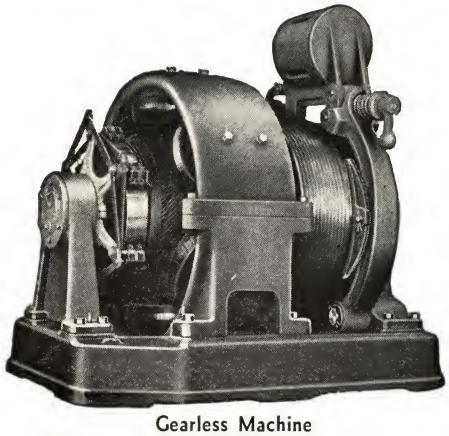
Riverside Hospital, Los Angeles, Calif.
Psychopathic Hospital, St. Louis, Mo.
Christ Hospital, Cincinnati, Ohio
Good Samaritan Hospital, Dayton, Ohio
U. S. Marine Hospital, Memphis, Tenn.
Veterans Hospitals, Chillicothe, Ohio; Murfreesboro, Tenn.; Whipple, Ariz.
Metropolitan Hospital, New York, N. Y.
U. S. Mint, San Francisco, Calif.
U. S. Post Offices, Erie, Pa.; Tulsa, Okla; Fort Scott, Kan.; Roanoke, Va.
Municipal Auditorium, Kansas City, Mo.
T. V. A., Corinth, Miss.
Fourth National Bank, Cincinnati, Ohio
Cincinnati Times Star, Cincinnati, Ohio
Farnsworth Bldg., Memphis, Tenn.
Physicians Bldg., Brooklyn, N. Y.
Procter & Gamble Co., Cincinnati, Ohio

Typical Freight Installations

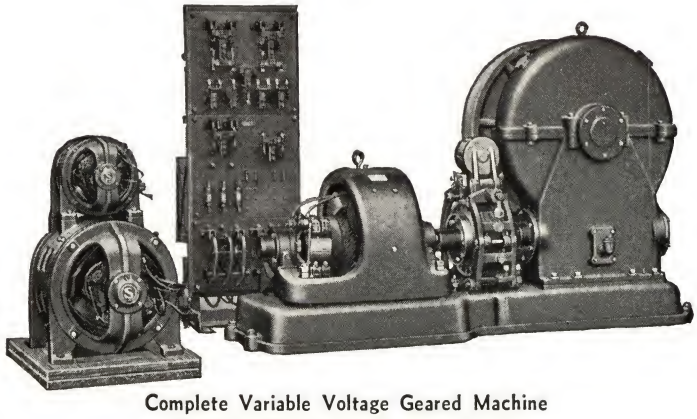
The Procter & Gamble Co.
Columbia Gas & Electric Corporation
Standard Brands, Inc.
General Motors Corporation
F. W. Woolworth Company
Kroger Grocery and Baking Company
Columbia Pictures Corporation
The Studebaker Corporation
Andrew Jergens Company
Montgomery Ward & Company
H. J. Heinz Company
Schenley Distillers Corporation
Port of Stockton



Geared, Ball Bearing, Alternating Current Elevator Machine
With two-speed tandem type motor and hand adjustable brake



Gearless Machine
Recommended for 600-ft. speed and over



Complete Variable Voltage Geared Machine
Recommended for speeds up to 550 ft.

Send for booklet on Elevator Planning and Scheduling of Cars for Various Kinds of Service, including diagrams of typical hatchways and penthouses

SHEPARD HomeLIFT

Patents Pending—Trade-Mark Reg. U. S. Pat. Off.

TOMORROW'S HOME WILL HAVE AN ELEVATOR

Shepard HomeLIFT now makes it practical for homes of even moderate cost to have the convenience of an elevator. Architects find that eliminating the front stairway and substituting the Shepard HomeLIFT often provides better first floor arrangement at no extra cost.

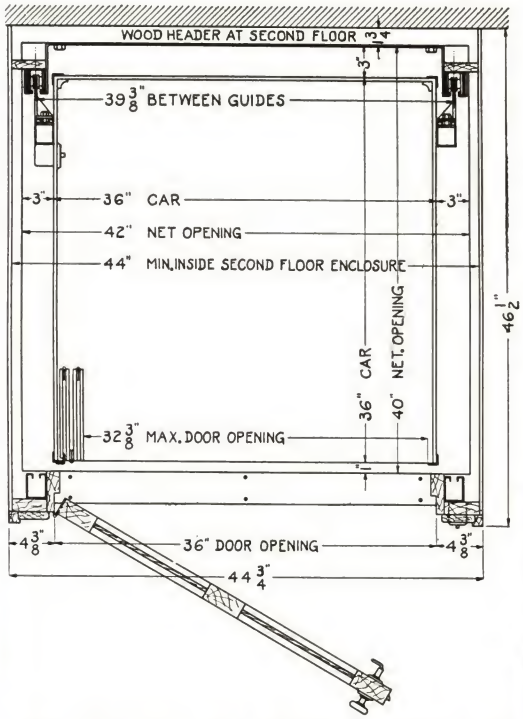
Designed to meet conditions in the average home, the Shepard HomeLIFT is a safe, automatic, electric elevator.

No special power lines need be installed. The HomeLIFT operates from the regular lighting circuit.

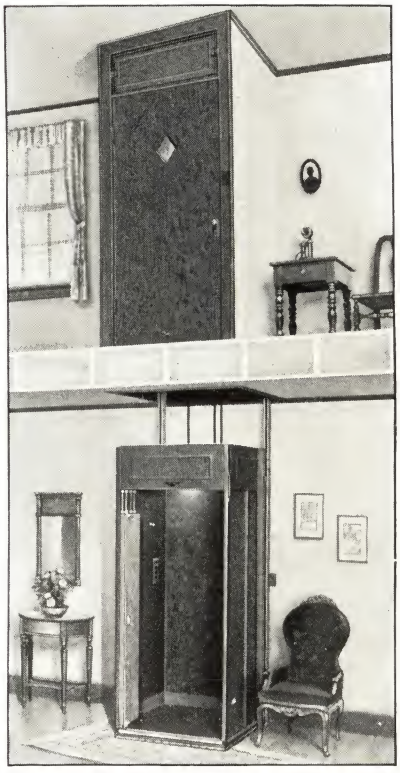
No major alterations need be made. An enclosure on the second floor and an opening between the first and second floors—that is all. When the car is on the second floor nothing is visible in the room below but the rails along the wall, which may be finished to harmonize with the surroundings.

Installing an elevator in a home is modernization. Modernize with Shepard HomeLIFT.

The HomeLIFT is made in three standard sizes—with platforms 30x30, 36x36 and 36x42 inches. Special sizes on order. Lifting capacity is 350 lbs.



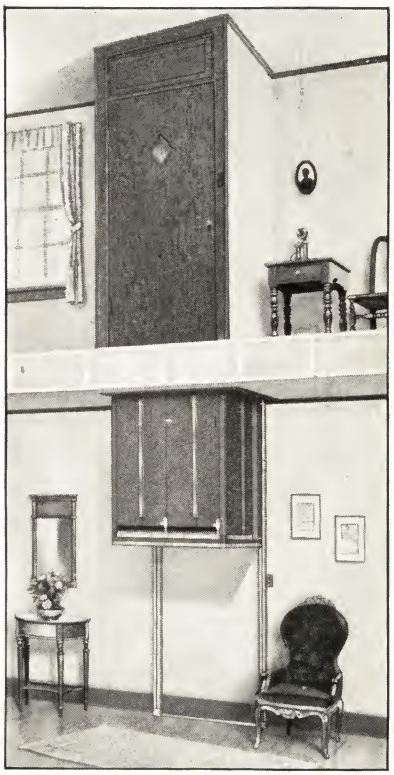
Note: For 30-in. square platform, the enclosure and car are 6 in. less in width and depth. Clearances are the same.



HomeLIFT Completely Installed with Standard Second Floor Enclosure as Supplied
Note wide entrance to cab

Convenient and Safe

The HomeLIFT is controlled from each landing and from the car. When the car is in motion, or at the lower level, the door to the enclosure on the upper floor is automatically locked. The elevator cannot be operated until the enclosure and car doors are closed, nor can the car door be opened while the car is in motion. Unless all safety precautions have been taken the elevator will not move. Children and pets may play under the car without fear as the slightest touch on the bottom stops it instantly. The Shepard HomeLIFT has a very effective safety device to stop the car in case of failure of any part of the hoisting mechanism.



Cab Halfway Between Floors—Enclosure Door and Car Door Are Locked
Guide rails only are visible when car is up

SHEPARD HomeLIFT, Sr.

A LIFT WITH HIGHER SPEED

The Shepard HomeLIFT Senior has been developed for those who desire a lift of more speed. Like the HomeLIFT, it operates from the lighting circuit and has a capacity of 500 lbs. and a speed of 40 ft. per minute. An enclosure is required at each floor.

Full information and descriptive circulars of the HomeLIFT or the HomeLIFT Senior will be furnished on request.

MEMORANDA

STANDARD SIZED ELEVATORS

ELEVATOR STANDARDS DATA

LAYOUT AND SPECIFICATIONS

THE WARNER ELEVATOR MFG. CO.
CINCINNATI

STANDARD SIZED ELEVATORS

WHAT THEY ARE.. HOW ESTABLISHED ADVANTAGES....

MR. ARCHITECT—

In the last decade, much technical progress has been made in the development of electric elevators. This has resulted in higher speeds, smoother operation, greater safety and highly perfected automatic performance. These improvements have now made possible standardization of both freight and passenger elevators, resulting in many advantages to the architect, engineer and owner.

● Prior to this standardization, elevators were a tailor-made affair, with the resulting inevitably high costs. If it could honestly be said that the tailor-made elevator was the best elevator from the buyer's point of view, notwithstanding the cost, there would be no reason for standards—but exactly the reverse is true. Standardization has improved elevator engineering, design and workmanship, and at the same time lowered costs.

● Standard sizes refer to certain hatchway dimensions that should be incorporated in building plans to provide for elevator platforms approved and adopted by the Industry as standard size platforms.

● The standard sizes were established after extensive research and study by the Standards Committee of the National Elevator Manufacturing Industry, Inc., an association representing over ninety per cent of the manufacturers.

● The advantages of selecting and specifying standard sized elevators are many:

(a) The plans will include space requirements approved by the Industry as those most efficient and economical.

(b) Standards permit the best elevator engineering.

(c) Lower costs will result.

(d) More prompt execution of contracts by the elimination of special requirements.

● In the following pages will be found detailed information of two typical standard size elevators. There are many other standard sizes for varying requirements. We shall be pleased to furnish information covering the nearest standard size elevator for specific requirements if the architect or engineer will write advising the kind of building under consideration, type of occupancy, approximate population, and the number of floors to be served.

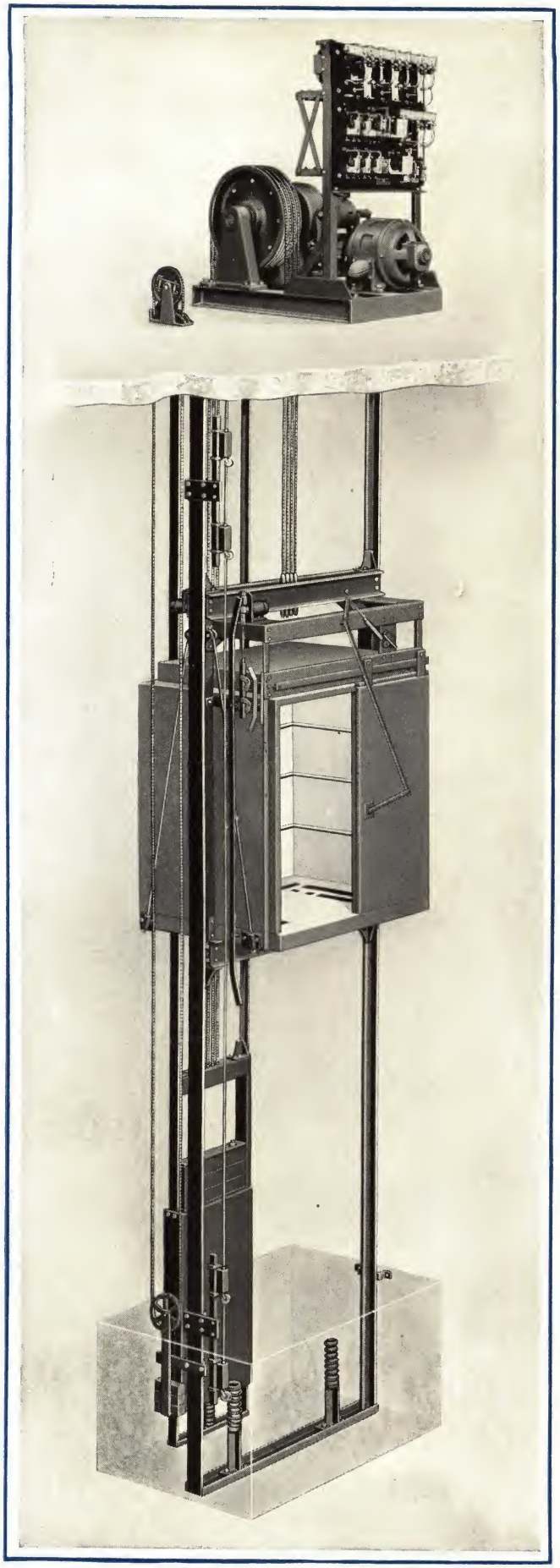
THE WARNER ELEVATOR MANUFACTURING CO.

Alfred and Valley Streets - - - - - - - - - - - Cincinnati, Ohio

Branch Offices and Service Stations

CLEVELAND, OHIO
DAYTON, OHIO
PORTSMOUTH, OHIO
MUNCIE, IND.
BIRMINGHAM, ALA.
DAVENPORT, IOWA
MEMPHIS, TENN.
COLUMBUS, OHIO
HUNTINGTON, W. VA.
YOUNGSTOWN, OHIO
TERRE HAUTE, IND.
MOBILE, ALA.
SPRINGFIELD, MO.
KNOXVILLE, TENN.
DETROIT, MICH.
CHARLESTON, W. VA.
ZANESVILLE, OHIO
FORT WAYNE, IND.
JACKSONVILLE, FLA.
NEW YORK, N. Y.
TACOMA, WASH.
INDIANAPOLIS, IND.
WHEELING, W. VA.
LEXINGTON, KY.
ATLANTA, GA.
MACON, GA.
JOHNSTOWN, PA.
PITTSBURGH, PA.

SERVICE STATIONS IN PRINCIPAL CITIES



Layout for Standard Size Passenger Elevator

A STANDARD SIZE PASSENGER ELEVATER

The following described passenger elevator is based on a standard size platform adopted by the National Elevator Mfg. Industry, Inc. The elevator is recommended for speeds of 75 to 125 feet per minute, for intermittent service in buildings where the traffic is light, although the platform area permits of carrying nine or ten persons when the occasion demands. Such an arrangement is suitable for the average small apartment house, an institutional or administration building, or for some retail stores.

One of the advantages of a platform of comparatively greater width than depth is that a single sliding door may be used on the car in place of the collapsing gate, and either a single slide or single swing door for the shaftway enclosures. Such doors are easier to operate and more economical. On push button operated elevators it is advisable to use either an automatic release closer as described on the following specifications, or an electric opening and closing device on the car door, in which case the single sliding door affords more positive action and hence less cause of complaint due to uncompleted interlock circuits.

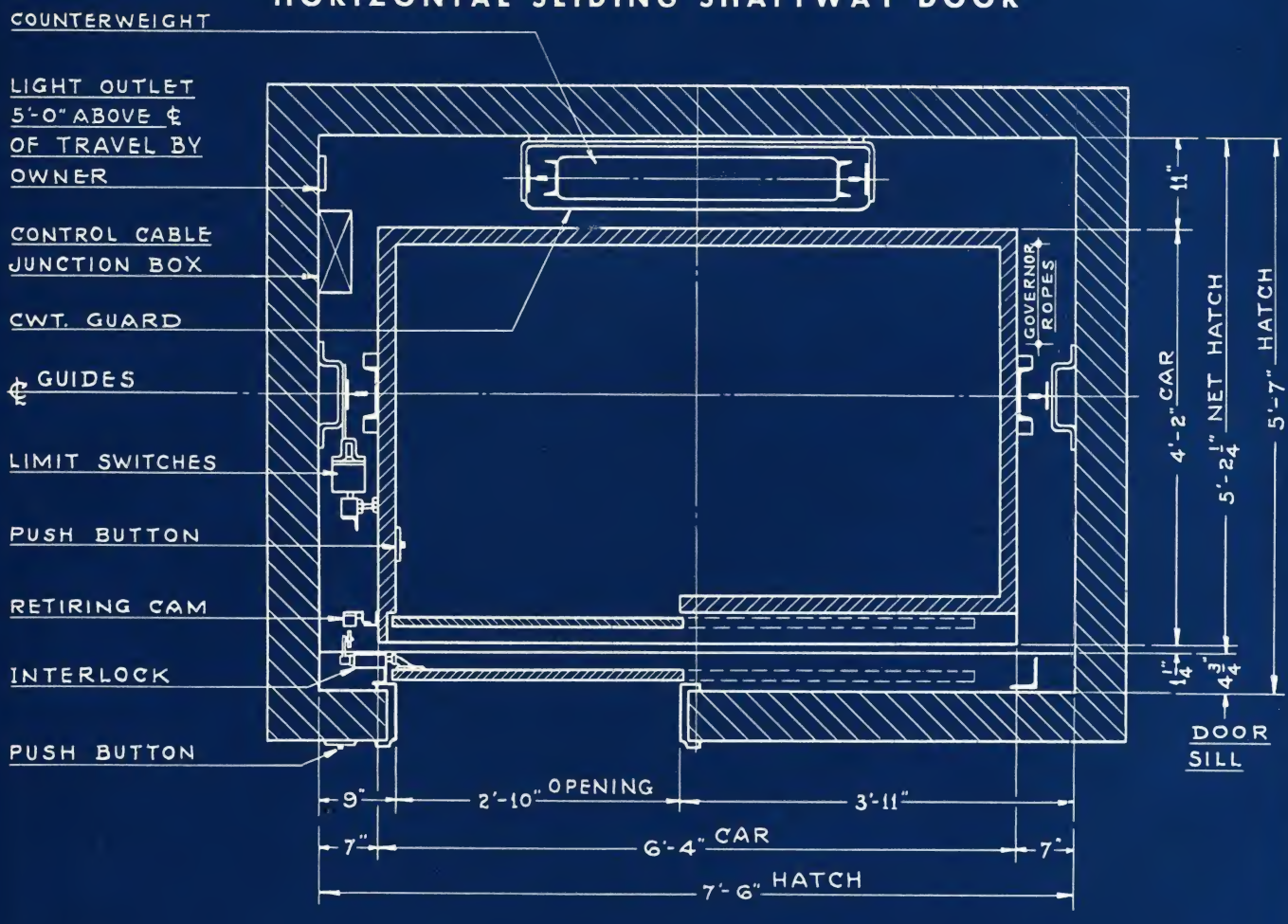
Another advantage of this standard size hatchway is that it will permit a well-engineered elevator layout as shown on the accompanying drawings. All of the overhead machinery may be placed in a penthouse area of the same dimensions as the shaftway, thus the shaft walls may be extended straight up above the roof without any further penthouse supports being required. Also, the elevator engine may be so located that its cables lift direct from the elevator car and counterweight. Architects incorporating this standard size hatchway in their building drawings will be assured of the obvious benefits derived from standardization. For the convenience of architects and engineers desiring to specify this standard size elevator, there follows on page 6 a set of Master specifications on which competitive bids can be obtained from any recognized manufacturer.

STANDARD PASSENGER ELEVATOR

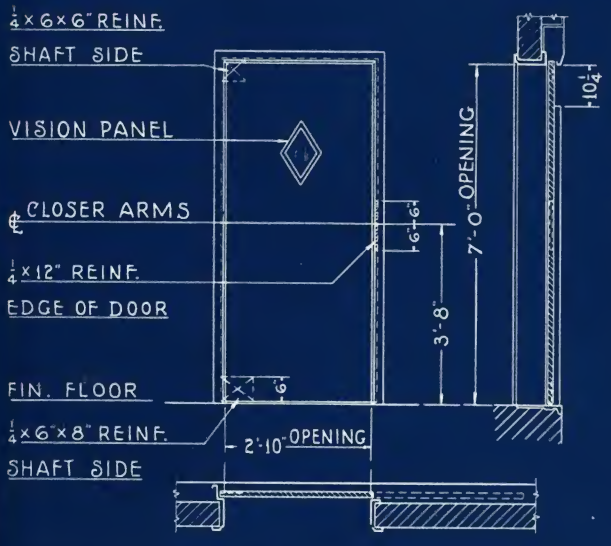
SHAFTWAY PLAN

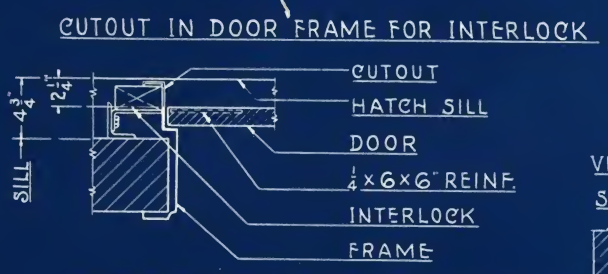
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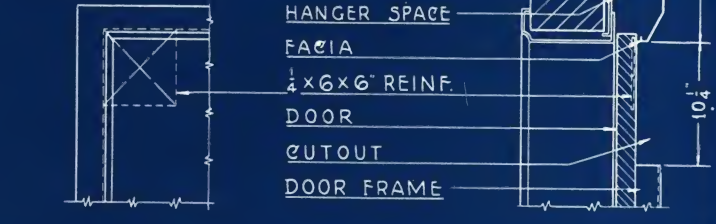
HORIZONTAL SLIDING SHAFTWAY DOOR



DOOR DETAILS







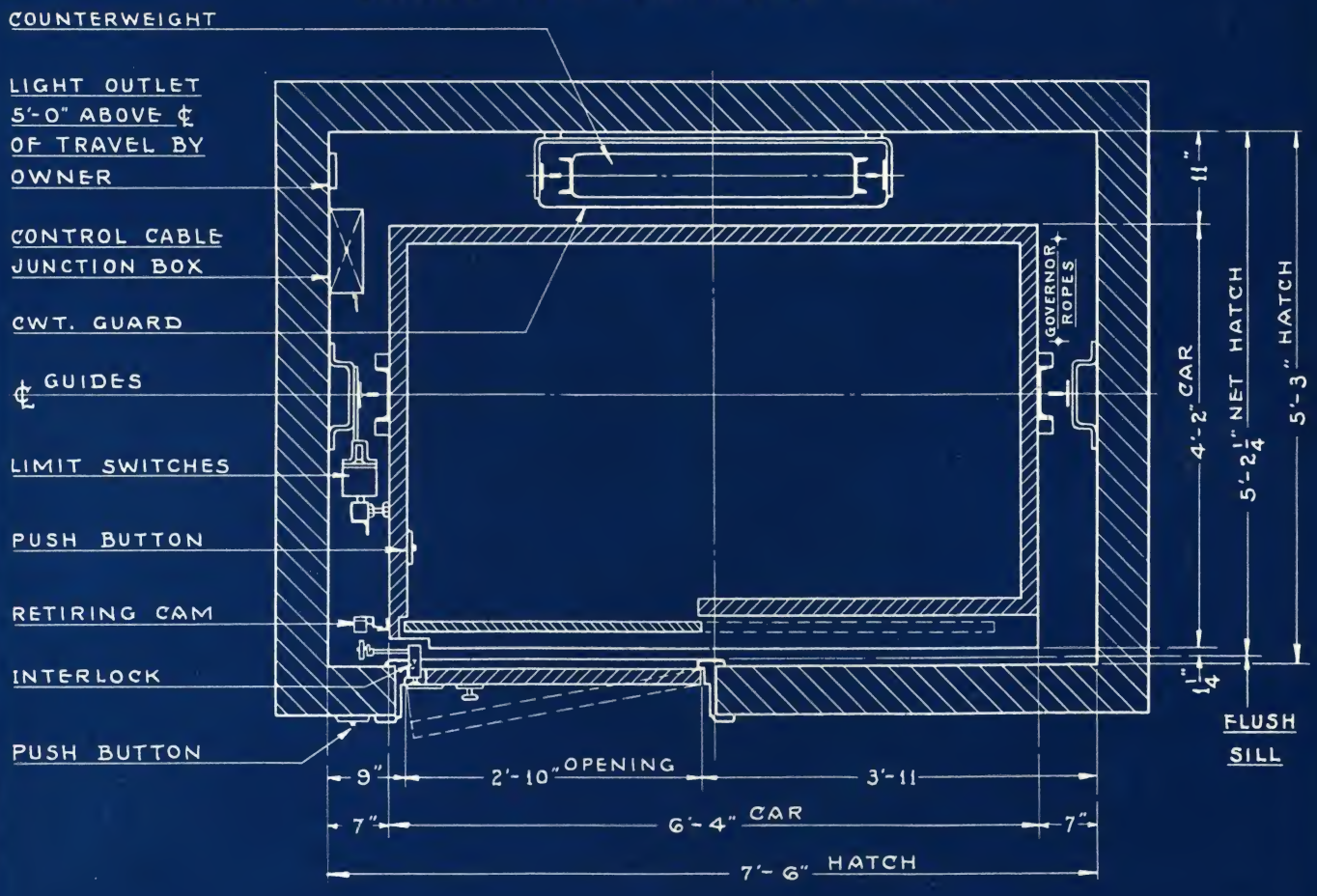
THE WARNER ELEVATOR MFG. CO.
EST. 1860
CINCINNATI

STANDARD PASSENGER ELEVATOR

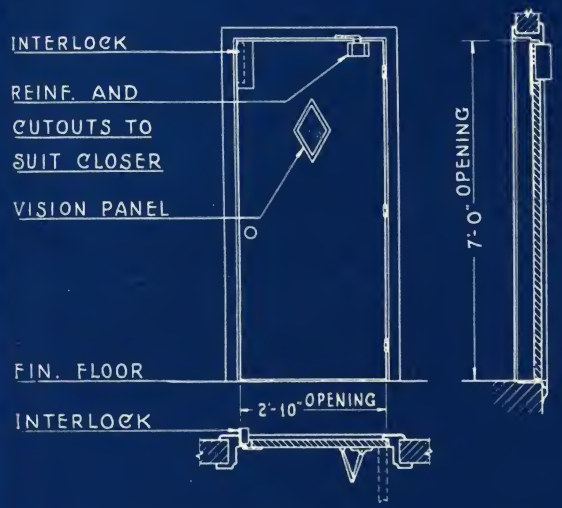
SHAFTWAY PLAN

WITH

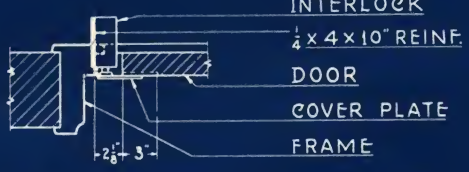
SWING TYPE SHAFTWAY DOORS



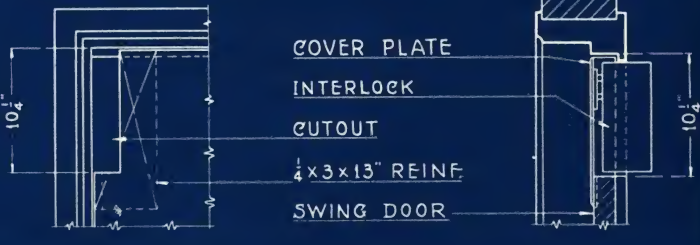
DOOR DETAILS



REINFORCEMENT IN DOOR FRAME FOR INTERLOCK



CUTOUT IN DOOR FOR INTERLOCK



MASTER SPECIFICATIONS FOR STANDARD SIZE PASSENGER ELEVATOR

GENERAL:
It is the intent of this specification to cover the furnishing and installing of elevator equipment as hereinafter specified and as shown on the accompanying drawings, in a first-class and workmanlike manner. The installation shall be in accordance with the American Standards Safety Code for Elevators, or any local codes which may govern the requirements of the installation, and shall also conform to the requirements of the National Board of Fire Underwriters and The National Electrical Code.

DRAWINGS:
Before beginning work, the elevator contractor shall prepare all drawings necessary to show the general arrangement of the elevator equipment. These drawings must be properly approved by owner before commencing fabrication of the elevators.

PERMITS AND INSPECTION:
The elevator contractor shall obtain and pay for the necessary permit and inspection as required by local regulations, also make such tests as called for by such authorities.

CAPACITY AND SPEED:
The elevator is to lift a load of 1500 lbs. in addition to the weight of the car, and with 1500 lbs. is to travel at a speed of 100 feet per minute with a constant potential at the motor of 220 volts, 3 phase, 60 cycles, alternating current. (Substitute for any change in available current supply.)

TRAVEL:
The car is to travel from.....to.....floor, about.....feet, stopping at.....floors and serving.....openings.

DIMENSIONS:
Size of car is to be 6'4" by 4'2" outside dimensions of the platform.

OPERATION AND CONTROL:
The elevator shall be operated by Automatic Push Button (single call type) Control consisting of a panel of sending buttons in the car, numbered to correspond with the floors to be served, and a single push button panel with "In Use" light signal at each floor landing. Momentary pressure from either car or floor button, provided the doors are closed and the elevator is not already in use, shall start the car to that floor. An emergency stop button shall be provided in the car to stop the car at any point in the shaft.
The controlling device shall be so arranged to give the person in the car complete and uninterrupted use of the elevator until the car has reached the desired floor and the car door had been opened and closed.
A hall time relay shall be provided, designed to render the car inoperative from the hall buttons for a predetermined period of time after the car has stopped to give waiting passenger time to open the door and enter car.

CAR:
The car shall be constructed of not less than No. 14 gauge polished furniture steel, of modern design, and provided with a 5 coat baked enamel finish of color as selected, including a different color canopy. All car fixtures and trim shall be furnished in a similar metal finish as selected. The car paneling shall be reinforced with vertical stiffening angles on not more than 12" centers, a separate base or kick plate being furnished below the paneling. The car shall be provided with a top exit, proper ventilators, flush type light fixture, and the platform shall be covered with rubber tile flooring of design selected.

CAR DOOR AND AUTOMATIC CLOSING DEVICE:
The car door shall be of the horizontal sliding type, finished to match the car, constructed of metal clad laminated wood with reinforcements for hangers, floor guides, closer arms and other hardware, and provided with sheave type hangers. The door shall be equipped with an automatic electric closing device which will cause the door to close automatically upon the pressure of any car or hall button providing the enclosure doors are closed and locked.

INTERLOCKS:
Car door contacts shall be furnished and installed so the car cannot move until the car door is closed. Automatic door locks and contacts shall be furnished and applied to all the enclosure doors by this contractor, so that the car cannot move until all enclosure doors are closed and locked.

PLATFORM:
The platform to be steel framed and fireproofed on underside. The floor shall consist of 7/8" matched wood on 2" yellow pine sleepers laid over a heavy underfloor.

CAR SUPPORTING FRAME:
The car supporting frame shall be made of structural steel, arc welded and bolted together, of sufficient strength to meet the requirements of the A. S. S. Code, rule 210-B. It shall be provided with adjustable, swiveling guide shoes and adjustable spring cushioned cable hitch to give uniform tension to the cables and reduce the strain of acceleration. It shall have mounted under platform, a safety device which is self-setting when tripped by the governor.

ADJUSTABLE STAY RODS:
Adjustable stay rods shall be provided at the corners of the platform.

GOVERNOR:
An overhead governor with 1/2" flexible steel operating cable shall be provided and set to trip the safety when the car descends at 40% overspeed. The governor shall also be provided with a contact to open the control circuit and stop the motor when or before the safety operates.

MACHINE LOCATION:
The elevator machine shall be located over the hatchway on suitable steel beams furnished in place by the elevator contractor.

MACHINE:
The machine shall be of the single wrap traction worm geared type with motor, brake, gearing and driving sheave mounted on a welded structural steel bed plate of ample stiffness to prevent misalignment in service.

SOUND REDUCING:
Necessary rubber cushioning blocks, properly enclosed with steel caps, shall be provided under the elevator machine to effectively isolate the machine from the building.

WORM GEAR:
The worm gear and traction sheave shall be mounted with approved Timken Roller Bearings on a fixed axle. The two Timken bearings shall both be mounted in the hub of the spider avoiding the possibility of misalignment. The gear shall consist of a bronze ring flange bolted to a heavy cast iron spider for easy renewal. The worm shall be a steel forging integral with its shaft and accurately finished. Both worm shaft and traction sheave axle shall be provided with leather cup seals to retain lubrication and keep dust from the bearings.

TRACTION SHEAVE:
The traction sheave shall be of tough cast steel to support high grade steel lifting cables without undue wear of the sheave. It shall have undercut grooves to maintain the 30 degree wedging action throughout the life of the sheave. It shall be demountable for easy renewal.

BRAKE:
The brake shall be spring applied, electrically released, so designed that it will be applied in the event of failure of power supply from any cause. It shall be of the D. C. magnet type.

MOTOR:
The motor shall be of the induction type especially designed for this service. It shall give high starting torque and uniform speed with economy. The motor shaft to be heavy to maintain the close clearance demanded by economy and good regulation. The bearings shall be of the renewable, ring-oiling type, of phosphor bronze.

CONTROLLER:
The controller shall consist of magnet switches mounted on heavy ebony asbestos panels to govern all the functions of starting, stopping, and reversing the elevator motor in response to control push buttons or automatic stops. These contactors shall be quiet and cool in operation, free from arching, sturdy and dependable. Automatic devices shall be provided to prevent damage to motor by overload or excess current. Controller frame shall be built up of angles mounted over the motor on the steel bed plate of the engine.

RECTIFIERS:
Dry type rectifiers shall be furnished to provide direct current for the operation of brake and controller magnets.

SAFETY SWITCHES:
A dependable phase reversal relay shall be provided to open control circuit in case of phase reversal. Thermal cutout shall be provided to open the control in case of the stalling of the motor by failure of one phase. The failure of the supplied current or the opening of any door or other safety switch shall in any case open the control contactors disconnecting motor and brake, stopping the car.

NON-INTERFERENCE:
The controller includes a non-interference system whereby all other buttons are inoperative while one is in use.

CAR HOLDING FEATURE:
When the car is operated from the elevator platform, the control shall be so arranged that after a stop, the elevator cannot be started from the hallway until the hatchway door has been opened and closed.

GUIDES:
Finished steel tee guides shall be furnished for the car and counterweight.

GUIDE LUBRICATORS:
Wick and Wipe type guide lubricators shall be furnished and mounted on the car and counterweight.

ROPES:
The elevator shall be provided with four 1/2" flexible steel cables of 8-19 Seale Patent Construction.

COUNTERBALANCE:
The counterbalance shall be mounted in a structural steel frame and all filling blocks secured by two through-bolts clamping them in place. The counterbalance shall be provided with four adjustable slides. A counterbalance guard shall be provided in the pit.

TERMINAL BUFFERS:
Helical spring buffers shall be provided as a means of bringing the car and counterweight to a gradual and positive stop at the extreme limits of travel should the car for any reason run by the final limit switches.

WORK NOT INCLUDED:
(a) Preparation of legal hoistway properly framed and enclosed, suitable pit of proper depth with drains and waterproofing if necessary. Machine room and penthouse properly lighted and ventilated, including suitable penthouse floor, adequate access doors, ladders and guards, as required.
(b) Proper electric feed wires with required main line switches, circuit breakers or fuses. These feeders will be brought to the terminals of the elevator control panel, also furnish necessary hoistway outlets for car lights, and machine room outlet for elevator signal equipment. The required electric power will be furnished for necessary testing and adjusting of the elevator and signal equipment.
(c) Furnish in place all hoistway entrances, including sills and frames.
(d) All cutting and patching of beams, walls and masonry work required, including repairs to plaster, also all chases and openings as required by the elevator contractor and shown on these drawings.

GUARANTEE:
The elevator contractor shall guarantee that the materials and workmanship of the apparatus installed by him under these specifications, shall be first class in every respect, and that he will make good any defects not due to ordinary wear and tear or improper use, which may develop within one year from date of completion of the equipment.

HATCHWAY DOORS (Optional)

HORIZONTAL SLIDING DOORS:
Furnish and install a total of.....sets hollow metal hatchway entrances complete, including horizontal single sliding flush type doors for clear openings approximately..... feet wide by..... feet high, and bucks, frames, trim, sills, hangers, hanger covers and hardware, including oil cushioned automatic closers. Doors shall be constructed of polished furniture steel, finish to be selected, and provided with vision panel.

SWING TYPE DOORS:
Furnish and install a total of.....sets of hollow metal hatchway entrances complete, including single swing flush type door for clear openings approximately..... feet wide by.....feet high, and bucks, frames, trim, sills, and hardware including oil cushioned automatic closers. Doors shall be constructed of polished furniture steel, finish to be selected, and provided with vision panel.



Layout for Standard Size Freight Elevator

A STANDARD SIZE FREIGHT ELEVATOR

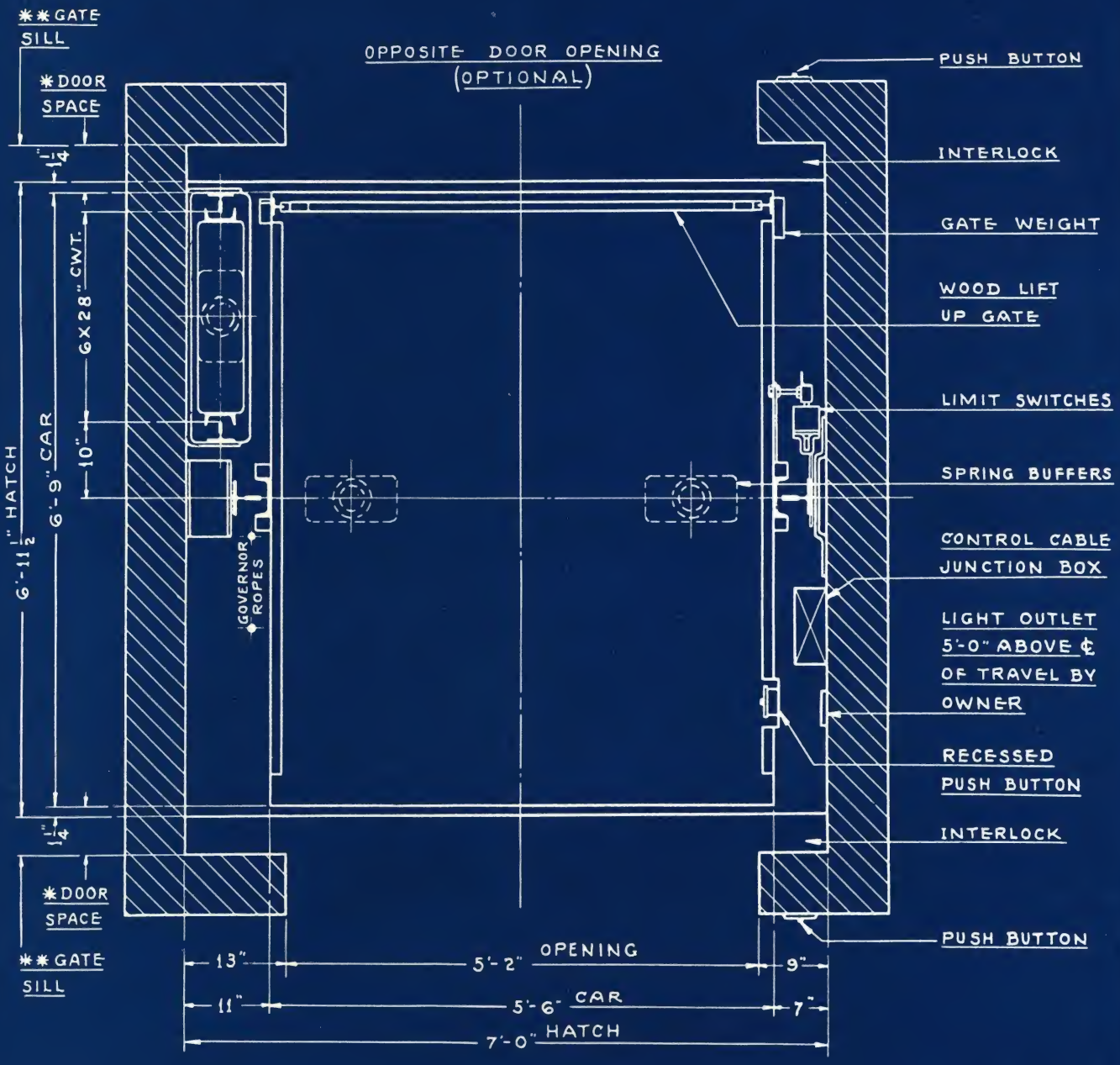
The following described freight elevator is based on a standard size platform adopted by the National Elevator Mfg. Industry, Inc. The elevator is recommended for moderate capacity, slow speed freight elevator work. A duty of 2500 pounds at 50 feet per minute is usually applicable for such requirements. This type of elevator is used extensively in many manufacturing enterprises, warehouses, wholesale and retail stores, in fact for any freight job obviously requiring more time to load and unload the platform than could possibly be gained through any increase in the car speed.

The platform size was established after extensive research and analysis of existing freight elevator installations. The study revealed that a remarkable number of elevators of this class had similar platform area requirements. Under the conditions it seemed reasonable that the buyer should be afforded the benefits accruing to the purchaser of a standard size truck body, for example, as compared with one custom-built. The greatest variable was the question of loading from one end as against both ends, or from opposite ends at different floors. The layout on the following page provides for optional requirements in this respect as well as the option of using bi-parting fireproof hatchway doors required by many building codes as against hatchway gates.

The architect will benefit by choosing a standard elevator, because he will have much necessary information at hand and can specify an elevator of the correct size and type with a minimum of office work. Also probability of complaints after the job is completed are reduced, because the standard elevator has been selected only after a careful study of the best features of thousands of existing elevators.

STANDARD FREIGHT ELEVATOR

PLAN (Shaft)



*DOOR OPENINGS TO FREIGHT ELEVATORS ARE USUALLY 7'-6" HIGH. THE SPACE REQUIRED FOR VERTICAL SLIDING FIREPROOF DOORS FROM THE CAR TO THE WALL IS 4¾" FOR FLOOR HEIGHTS 11'-9" OR MORE, AND 6½" FOR FLOORS LESS THAN 11'-9".

**THE SPACE REQUIRED FOR SLAT TYPE GATES OR HORIZONTAL SLIDING DOORS IS 6¼" ALLOWING 5" FOR A SILL INSIDE THE ENCLOSURE WALL.

MASTER SPECIFICATIONS FOR STANDARD SIZE FREIGHT ELEVATOR

GENERAL:

It is the intent of this specification to cover the furnishing and installing of elevator equipment as hereinafter specified and as shown on the accompanying drawings, in a first-class and workmanlike manner. The installation shall be in accordance with the American Standards Safety Code for Elevators, or any local codes which may govern the requirements of the installation, and shall also conform to the requirements of the National Board of Fire Underwriters and The National Electrical Code.

DRAWINGS:

Before beginning work, the elevator contractor shall prepare all drawings necessary to show the general arrangement of the elevator equipment. These drawings must be properly approved before the installation of the elevators.

DIMENSIONS:

Size of the car is to be 5'6" x 6'9" outside dimensions of the platform.

TRAVEL:

The car is to travel from.....to.....floor, about .....feet, stopping at.....floors and serving .....openings.

OPERATING DEVICE:

The operating device shall consist of a panel of "Up" and "Down" push buttons in the car and at each floor landing.

LOAD AND SPEED:

The elevator is to lift a load of 2500 lbs. in addition to the weight of the car, and with 2500 lbs. is to travel at a speed of 50 feet per minute with a constant potential at the motor of 220 volts, 3 phase, 60 cycles, alternating current. (Substitute for any change in available current supply.)

CAR:

The car shall be wainscoted 6'0" high with not less than No. 14 gauge sheet steel neatly paneled and stiffened with vertical angles on 10" centers. The top of the car and the sides above the wainscoting shall be enclosed with No. 7 wire screen or perforated metal.

CAR GATE:

If there are two entrances to the car, the one fartherest from the operator shall be protected by a manually operated counter-balanced vertical rising wood gate. The gate shall be equipped with an electric contact connected in the operating circuit to prevent the movement of the car while the gate is open.

PLATFORM:

The platform shall consist of a steel frame with plank under-flooring and either maple or beech top floor.

CAR SAFETY FRAME:

The car supporting frame shall be made of structural steel, arc welded and bolted together of sufficient strength to meet the requirements of the American Standards Safety Code. It shall be provided with adjustable guide shoes. It shall have mounted under the platform a safety device which is self-setting when tripped by the governor. The safety device shall be arranged to bring the descending car to a stop on the guide rails, and provision made to shut off the power supply to the elevator motor.

GOVERNOR:

An overhead governor with ½" flexible steel operating cable shall be provided to trip the safety and clamp the car to the guide rails in case of excessive descending speed. Both the governor and its tension sheave shall have Timken roller bearings to insure permanency and quietness. All pivots not in continuous motion shall be of brass to avoid corrosion.

TRACTION SHEAVE:

The traction sheave shall be of tough cast steel to support high grade steel cables without undue wear of the sheave. Both the traction sheave bearings shall be mounted in the hub of the spider on a fixed assembly which insures the permanent alignment of the bearings.

BRAKE:

The brake shall be of the three-phase magnet opened type with leather lined shoes applied by a powerful helical spring to the coupling pulley of the worm shaft.

MOTOR:

The motor shall be of the induction type especially designed for elevator service. It shall give high starting torque and uniform speed with economy. The motor shaft shall be heavy to maintain the close clearance demanded by economy and good regulation. The bearings shall be of the renewable, ring-oiling type, of phosphor bronze.

BED PLATE:

The base shall be built up of structural steel members, arc welded together to give the utmost stiffness and avoid misalignment either from settlement or tightening of anchor bolts.

GUIDES:

Finished steel guides not less than 14 lbs. per foot shall be furnished for the car and similar guides not less than 7 lbs. for the counterweight.

GUIDE LUBRICATORS:

Wick and Wipe type guide lubricators shall be furnished and mounted on car and counterweight.

ROPES:

The elevator shall be provided with five ½" flexible steel cables of 8-19 Seale Patent Construction.

COUNTERBALANCE:

The counterbalance shall be mounted in a structural steel frame and all filling blocks secured by two (2) through-bolts clamping them in place. The counterbalance shall be provided with four adjustable slides.

TERMINAL AND FINAL LIMITS:

The car will be stopped automatically at the terminal floors. Should the car travel beyond the terminal floors, the final limit switches will automatically prevent the car from proceeding beyond its normal limits of overtravel.

TERMINAL BUFFERS:

Helical spring buffers shall be provided as a means of bringing the car and counterweight to a gradual and positive stop at the extreme limits of travel, should the car for any reason run by the final limit switches.

OPERATION:

Continuous pressure on the "Up" or "Down" dispatching buttons in the car or at the floor landing, unless the car is already in motion or an enclosure door or gate is open, shall cause the car to travel in the desired direction until the button is released. An emergency switch shall be provided in the car to interrupt the power supply, thus applying the brake and stopping the car, independently of the regular operating device.

OPEN DOOR SIGNAL:

A bell shall be provided in the car and so connected that it will ring when pushing any of the control buttons, if an enclosure door or gate has been left open.

EMERGENCY CALL BELL:

Button marked "emergency" shall be mounted in the car to be connected to a call bell in shaft.

CONTROLLER:

The controller shall consist of magnet switches mounted on ebony asbestos panels to govern all the functions of starting, stopping and reversing the elevator motor in response to control push buttons or automatic stops. These contactors shall be quiet and cool in operation, free from arcing, sturdy and dependable. Automatic devices shall be provided to prevent damage to motor by overload or excess current. (Controller frame shall be built up of angles mounted over the motor on the steel bed plate of the engine.)

SAFETY SWITCHES:

A dependable phase reversal relay shall be provided to open control circuit in case of phase reversal. Thermal cutout shall be provided to open the control in case of the stalling of the motor by failure of one phase. The failure of the supplied current or the opening of any door or other safety switch shall in any case open the control contactors disconnecting motor and brake, stopping the car.

NON-INTERFERENCE:

The controller includes a non-interference system whereby all other buttons are inoperative while one is in use.

CAR HOLDING FEATURE:

When the car is operated from the elevator platform the control shall be so arranged that after a stop, the elevator cannot be started from the hallway until the hatchway door has been opened and closed,

MACHINE LOCATION:

The elevator machine shall be located over the hatchway on suitable steel beams furnished in place by the elevator contractor.

MACHINE:

The machine shall be of the single worm geared traction type with motor, brake, gearing and driving sheave mounted in proper alignment on a structural steel bed plate.

WORM GEAR:

The worm gear shall be of bronze accurately cut from a ring which is flange bolted to a heavy cast iron spider. The worm shall be cut from a solid steel forging integral with the worm shaft. The thrust shall be carried on ball bearings easily accessible for repair or renewal. This equipment shall have a second reduction by means of an internal gear and pinion driven by the worm gear shaft. The worm gear shaft and the internal gear, which also carries the traction sheave, will be mounted on TIMKEN bearings with suitable grease seals and provisions for alemite lubrication.

*HATCHWAY GATES:

Furnish and install a total of..... oak counterbalanced lift up gates complete with columns, hardware, pulleys, counterbalance, rope, and electro mechanical interlocks to prevent operation of the elevator until the gates are closed and prevent the opening of any gate until the car is at that landing. The gates are to conform to the American Safety Standards Code or local regulations.

WORK NOT INCLUDED:

(a) Preparation of legal hoistway properly framed and enclosed, suitable pit of proper depth with drains and waterproofing if necessary. Machine room and penthouse properly lighted and ventilated, including suitable penthouse floor, adequate access doors, ladders and guards, as required.
(b) Proper electric feed wires with required main line switches, circuit breakers or fuses. These feeders will be brought to the terminals of the elevator control panel, also furnish necessary hoistway outlets for car lights, and machine room outlet for elevator signal equipment. The required electric power will be furnished for necessary testing and adjusting of the elevator and signal equipment.
(c) Furnish in place all hoistway entrances, including sills and frames.
(d) All cutting and patching of beams, walls and masonry work required, including repairs to plaster, also all chases and openings as required by the elevator contractor and shown on these drawings.

OPTIONAL

*HATCHWAY DOORS:

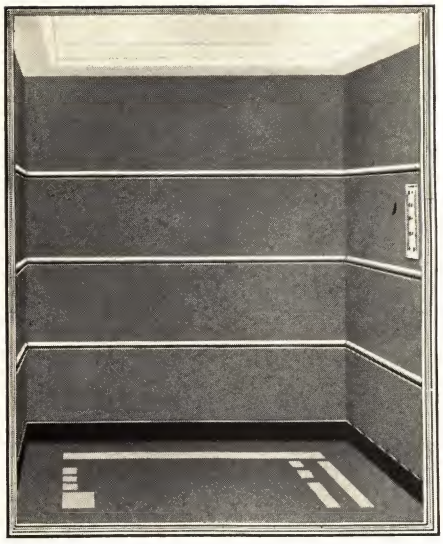
Furnish and install a total of.....manually operated counter-balanced bi-parting hoistway doors of....., ... or equal manufacture, equipped with electro-mechanical interlocks and wired glass vision panel in the upper section. Doors shall be equipped with suitable hand latches operated from both car and floor for manual closing. The doors shall be given a prime coat of paint at the factory, and the final painting after erection will be done by the purchaser. Door sills and frames are to be installed by owner in accordance with elevator layout.
*Substitute in lieu of hatchway gates.

GUARANTEE:

The elevator contractor shall guarantee that the materials and workmanship the apparatus installed by him under these specifications, shall be first class in every respect, and that he will make good any defects not due to ordinary wear and tear or improper use, which may develop within one year from date of completion of the equipment.

UNDIVIDED

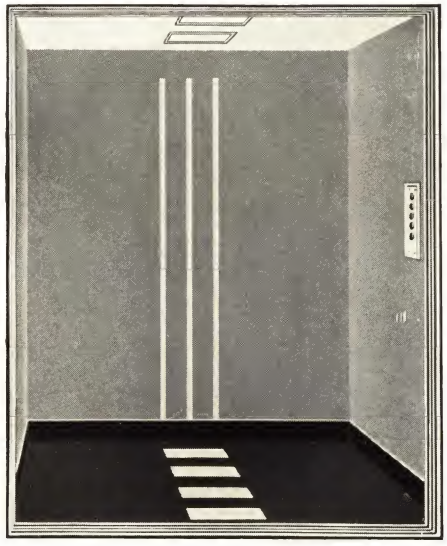
The electric elevator today is the product of a successful combination of electrical and mechanical mechanisms requiring close synchronization. It is the combination of the motor, controller, brake, and other parts of the elevator that spell success or failure for the installation, and not the degree of excellence of the individual parts. Parts assembled from different manufacturers make it difficult not only to place responsibility for failure, but also to obtain prompt and proper replacements when trouble does occur. The Warner Elevator Mfg. Company manufactures the complete elevator, including the electrical units, such as both alternating and direct current motors, motor generators, controllers, interlocks, safety devices, as well as all other mechanical parts. No radical experiments have been sold — our customers have simplified equipment well made, which requires little attention or upkeep expense. We assume the undivided responsibility for the satisfactory operation of the complete elevator.



1. Warner Design WAJ with Indirect Lumiline Lighting

MACHINES

WARNER machines are of liberal proportions for duties required, manufactured on a precision tool basis, all parts being standard and interchangeable. Similarity of design and features of development are apparent throughout the entire WARNER line and gives it an indelible stamp of quality.



2. Warner Design WAK with Flush Type Lighting

ELEVATOR CARS

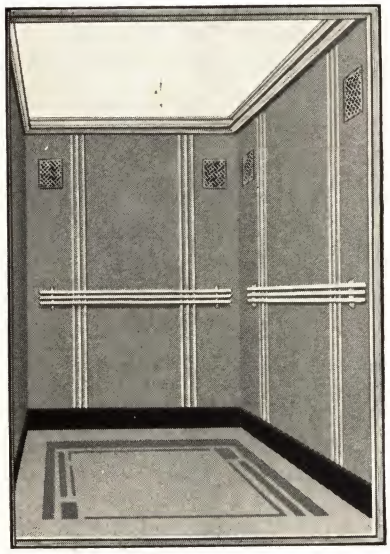
WARNER elevator cars of our own manufacture are of the highest standard of quality in both design and workmanship. Limited space prevents the illustrating of more than a few suggestions. Numerous designs are available within different price ranges.

BUFFERS

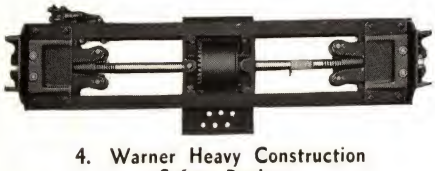
Safety codes permit spring buffers on elevators running not over 200 feet per minute, but oil buffers are required for higher speeds. The WARNER oil buffer, illustrated below, has been tested and approved as meeting all requirements of the U. S. Bureau of Standards.

MOTORS—CONTROLLERS

WARNER motors and controllers are manufactured in our own shops. Through years of experiment and careful attention to details and operation, we have developed combinations that will withstand the heavy duties imposed upon them by elevator service. To attain the greatest degree of success in operation the controller must be designed and adjusted to work in conjunction with the motor.



3. Warner Design WAI with Indirect Lumiline Lighting



4. Warner Heavy Construction Safety Device



5. Warner Approved Type Oil Buffer



6. Warner Steel Driving Sheave with Its Timken Bearing Shaft

RESPONSIBILITY

TIMKEN ROLLER BEARINGS

Plate (6) below illustrates standard bearing construction on WARNER geared elevators. The drum shaft is fixed, and the spider bearing the worm gear and driving sheave rotate on suitable approved Timken Roller Bearings. This eliminates most of the starting friction and wear that sooner or later calls for expensive repairs on other types of bearings.

MICRO ADJUSTMENT

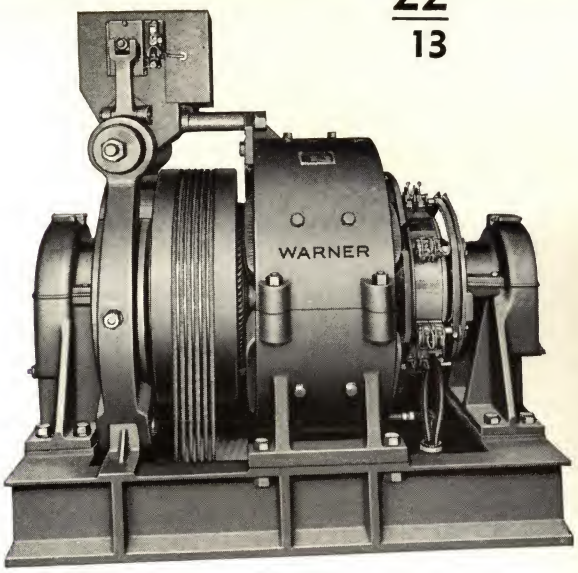
Another vulnerable point in elevator construction where wear is likely to occur is at gear centers. Through the use of an eccentric shaft (7) on each end of the fixed axle, the gears may be raised or lowered into closer mesh. This device permits both initial and later adjustments and adds years of service to the elevator.

STEEL BED PLATE

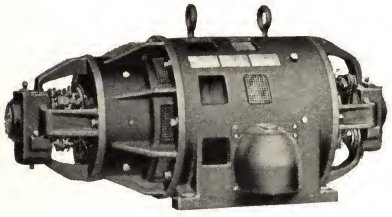
For greater strength and rigidity, WARNER uses deep steel ship channel sections, arc welded, with planed bearing pads for housing and motor. This bed plate maintains factory alignment of all parts so necessary for continued good service (7).

STEEL DRIVING SHEAVE

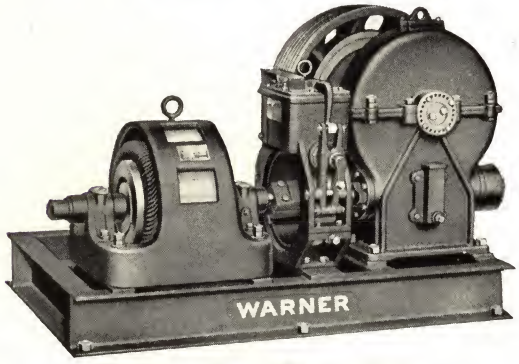
The driving sheave illustrated (6) carries the entire weight of car, load and counterbalance. WARNER uses the best steel casting or hammered steel forgings available for this sheave, instead of cast iron or semi-steel, as is sometimes used to save in cost. It has the hardness and toughness necessary to give traction and little wear with highest quality steel cables. It is also demountable for easy and less costly replacement should wear occur.



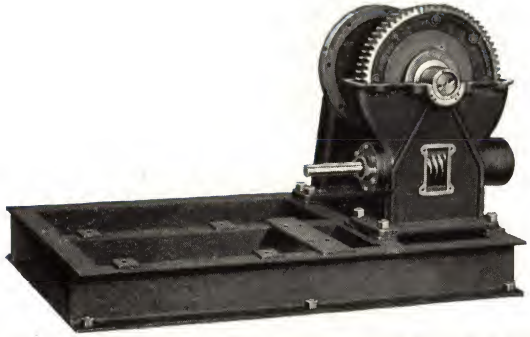
12. Warner High Speed Gearless Traction Engine



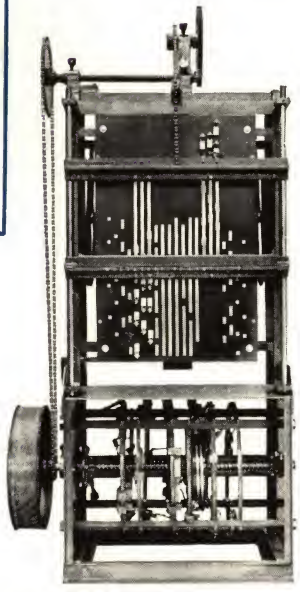
11. Warner Motor Generator Set



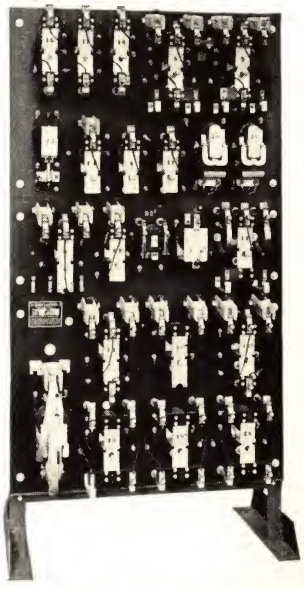
10. Warner Geared Traction Engine



7. Warner Micro Worm Gear Adjustment and Steel Bed Plate



8. Warner Automatic Push Button Selector for Collective Control



9. Warner Controller for Variable Voltage and Automatic Leveling

THE COMPANY AND ITS FACILITIES

The WARNER ELEVATOR MFG. COMPANY was established in Cincinnati in 1860, at that time operating under the name of Warren Warner, the founder. Many give Warren Warner the credit of building the first hydraulic elevator; certainly the firm was one of the first to go into the business of building vertical lifts for the moving of passengers and freight from one floor to another. The company was incorporated under its present name in 1887 and has been engaged exclusively in elevator work since its origin. As a result of a good reputation and good management, the company has had a normal growth through the years; it enjoys the highest financial rating and is regarded one of the strongest of the independent manufacturers. Since it is not a result of combinations of other companies, but has continued under one management throughout its life, it is able to render prompt service from accurate records on all equipment bearing its name.

MANUFACTURING FACILITIES

The largest and most modernly equipped factory devoted exclusively to the manufacture of elevators west of New York, manufacturing elevator equipment on a modern precision tool basis. Expert individual attention by skilled workmen is given to each installation, and at the same time the production facilities are such that the benefits of quantity production may be obtained. All new devices are thoroughly tested in the Company's own 100-foot Test Tower.

Main Assembly Floor, The Warner Elevator Mfg. Co.



THE KAWNEER COMPANY

Electric Stairway and Escalator Balustrades, Elevator Doors In Aluminum, Bronze or Nickel Silver

NILES, MICHIGAN

BRANCHES: NEW YORK, CHICAGO, BERKELEY, CALIF.

For Catalog on Kawneer Store Fronts—see File Index

Kawneer

For Catalog on Kawneer Windows, Doors, Metal Work—see File Index

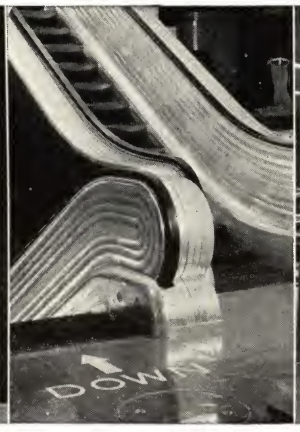
THE KAWNEER COMPANY fabricates and installs Escalator (Electric Stairway) Balustrade cover trim—both interior and exterior—in aluminum (Satin, Polished or Alumilite finish) bronze (Satin, Polished or Statuary finish), nickel silver or other non-ferrous metals. Close cooperation with the architect and with the electric stairway manufacturer is assured.

The few examples pictured here reveal the variety and rich beauty of Kawneer non-ferrous metal balustrade work—which becomes a distinct decorative feature of the store or building. This is especially true of the exterior treatment, which makes an asset instead of a liability of masses which are hard to handle satisfactorily in any other way. Nothing equals the life lustre and lasting beauty of modern non-ferrous metal for this purpose. Complete information will be furnished on inquiry.

Typical Kawneer installations: Chrysler Building, Rockefeller Center Buildings 5 and 7, Theme Building, N. Y. World's Fair (world's longest and highest electric stairway); Marshall Field & Co., Mandel Bros., Sears Roebuck, Chicago; J. N. Adams Store, Buffalo; Famous Barr Store, St. Louis; Hudson Bay Company, Winnipeg; Newark Transit Station; Los Angeles Post Office; DuPont Bldg., Miami, Florida; and Dept. of Interior Bldg., Washington.



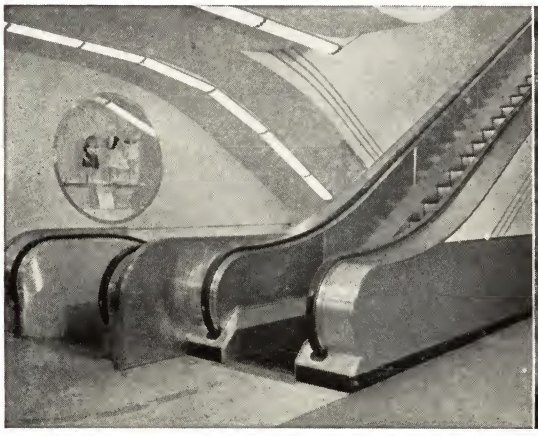
FULL STREAMLINE—Note the graceful moulded form of this full streamline metal escalator balustrade furnished for Rockefeller Center Building No. 5, Radio City, N. Y. Satin finish bronze



★ Detail of Kawneer Aluminum Balustrade for Mandel Brothers, Chicago



STREAMLINE—Escalator Balustrade for Chrysler Building, New York, is distinguished by simplicity and streamlined form of base. Nickel-Silver



MITRE TYPE—Kawneer installation in J. N. Adams Store, Buffalo, N. Y., illustrates the standard Mitre Type. Bronze



★ Elevator Doors are also furnished by Kawneer



KAWNEER BALUSTRADE—For Mandel Brothers Department Store, Chicago. Note lustre and rich detail, and interesting treatment of exterior metal surface. Aluminum

THE W. S. TYLER COMPANY

CLEVELAND, OHIO

BRANCHES

NEW YORK BOSTON PHILADELPHIA CHICAGO LONDON, ENGLAND ST. CATHARINES, CANADA

TYLER ELEVATOR CARS AND ENTRANCES

The Final Complement to the Modern Elevator Plant. To the Tenant and Visitor They Evidence the Best in Transportation. When Selecting Elevator Equipment, Architects and Engineers Should Consider the Source of These Facilities.

SEE TYLER CATALOG, SECTION 14 (SEE FILE INDEX)

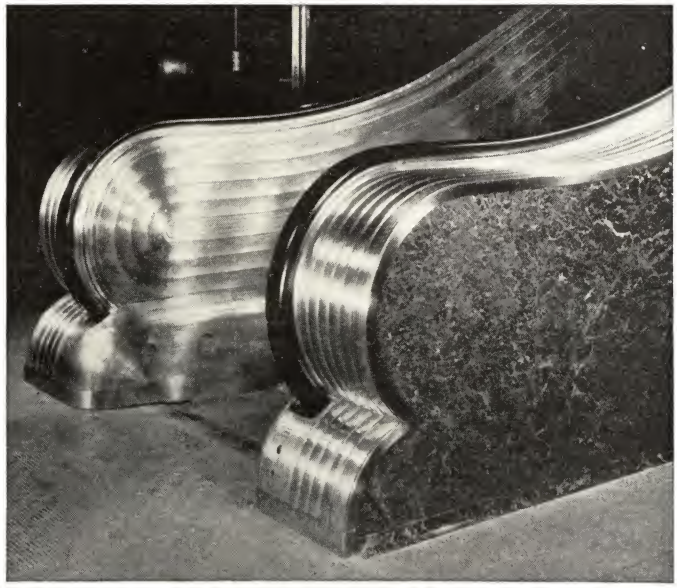
EXAMPLES OF ELEVATOR INSTALLATIONS WITH TYLER EQUIPMENT

Commercial Buildings

Aetna Life Insurance Company, Hartford, Conn.
Chicago Board of Trade Building, Chicago
Chrysler Building, New York
Empire State Building, New York
Fisher Building, Detroit
Insurance Company of North America, New York
Lincoln Building, New York
Metropolitan Life Insurance Co., New York
New York Central Building, New York
New York Life Insurance Co., New York
Rockefeller Center, Inc., New York
Terminal Tower Bldg., Cleveland
Tribune Tower Bldg., Chicago
United Shoe Machinery Company, Boston

Hospitals

Alleghany General Hospital, Pittsburgh, Pa.
Bellevue Hospital, New York
Boston City Hospital, Boston
Hospital for Chronic Diseases, Welfare Island, N. Y.
Kings County Hospital, Brooklyn
Lakeside Hospital, Cleveland
New York Hospital and Cornell Medical School, New York



Tyler Escalator Balustrades
International Building, Rockefeller Center

Department Stores

Wm. H. Block Company, Indianapolis
Carson Pirie Scott and Company, Chicago
Marshall Field and Company, Chicago
Forbes and Wallace Company, Springfield, Mass.
G. Fox and Company, Hartford, Conn.
Halle Bros. Co., Cleveland
The Higbee Company, Cleveland
J. L. Hudson Company, Detroit
James McCreery and Co., New York
The May Company, Cleveland
Rike-Kumler Store, Dayton, Ohio
Stewart and Company, Baltimore
Wm. Taylor Son and Co., Cleveland
Wanamaker's, Philadelphia and New York
H. P. Wasson and Company, Indianapolis
Woodward and Lothrop, Washington, D. C.

Hotels

Book-Cadillac Hotel, Detroit
Haddon Hall, Atlantic City
Hotel Cleveland, Cleveland

Tyler Elevator Entrance, Watts Building



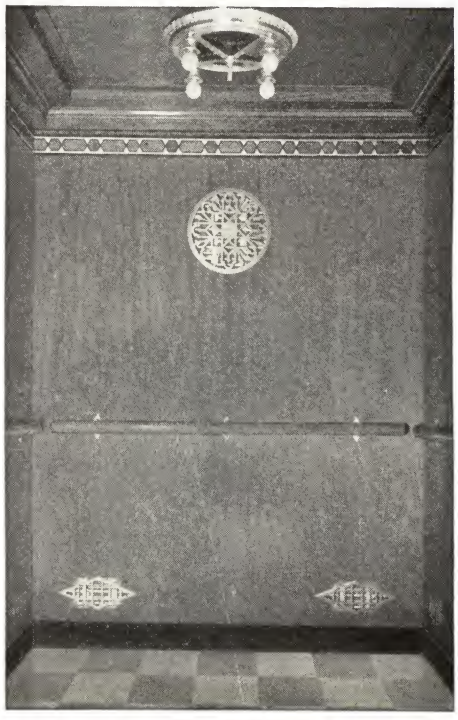
Banks

American Bank Building, Portland, Ore.
Bankers Trust Company Building, New York
Central National Bank, Cleveland
Chase National Bank, New York
Fidelity-Philadelphia Trust Building, Philadelphia
First National Bank, Memphis, Tenn.
Irving Trust Company, New York
Bank of Manhattan Company, New York
Mellon National Bank, Pittsburgh
National City Bank, Cleveland

Modernization

Hotel Astor, New York
Elliott Square Building, Buffalo, N. Y.
The Genesee Building, Buffalo, N. Y.
Hume Mansur Co. Building, Indianapolis
Insurance Building, Omaha, Nebr.
LaSalle Hotel, Chicago
Mallers Building, Chicago
Muncipal Building, New York
The Park Building, Pittsburgh
Philadelphia Bourse, Philadelphia
Rookery Building, Chicago
The Seelbach Hotel, Louisville, Ky.
Stroh Building, Detroit
David Whitney Building, Detroit

Tyler Elevator Car, Bank of Manhattan Co.



ELEVATOR SUPPLIES COMPANY, INC.

Manufacturers of ES Products of Quality

EXECUTIVE AND SALES OFFICES:
420 Lexington Avenue, NEW YORK, N. Y.

WORKS:
RAHWAY, N. J.

DISTRICT OFFICES

BOSTON, MASS., 143 Federal Street
CHICAGO, ILL., 111 So. Jefferson Street
CLEVELAND, OHIO, 1114 Fidelity Building, 1940 E. 6th Street
LOS ANGELES, CAL., 1829 Vassar Street, Glendale
SAN FRANCISCO, CAL., 186 Fifth Street
PHILADELPHIA, PA., 927 Sansom Street

CANADIAN REPRESENTATIVE: Canadian Elevator Equipment Co., Ltd., TORONTO, ONT.

MORE THAN 45 YEARS OF EXPERIENCE INSURE THE QUALITY OF ES PRODUCTS

This experience is available, for the asking, to those seeking a solution to the problems that constantly arise in the modernization of vertical traffic.

The following is but a generalized list of ES products. Space does not permit a detailed account of design, materials, construction, operation and adaptability.

Such information, however, will be gladly furnished to anyone interested upon request to any of the offices listed above.

ELEVATOR DOOR OPERATING EQUIPMENT

Electric Door Operators for Passenger and Freight Elevators

Type "M"—Used on elevators for opening and closing car and hatchway doors. It is a unit mechanism located above elevator car at front of car. The car door panels are operated by an electric motor which rotates a drive nut on a threaded driving shaft, thus converting the rotary movement of the motor to a straight line horizontal movement of the driving shaft. The drive shaft transmits the power to the car door panels through a multiplying lever or levers. A built-in, positive acting electric eddy current brake automatically cushions the doors and prevents them from slamming in either direction. The eddy current brake also serves to hold the doors in position at either limit of travel. A clutch mechanism is mounted on one of the car doors which transmits movement to the hatchway doors so the car and hatchway door panels open and close simultaneously. However, the clutch is disengaged while the car is in motion.

Type "PB"—A small compact unit mounted on top of the car at the front and, by power operation, opens and closes collapsible car gates (or light weight sliding car doors).

Sensitive Door Edge—This device will cause closing doors to reopen, either completely or partially, if they touch an alighting passenger, and, when the passenger is clear of the doors, they automatically close.

Pneumatic Door Operators

Type "B"—A single-acting air-operated cylinder by means of which the door is opened, and within which is a helical spring for closing the door and locking it in closed position. To prevent door from slamming open or shut, a double-acting oil check unit is coupled to the door operator arm.

Double Acting Type "B"—Same construction and dimensions as Type "B", but used for doors in excess of 450 lbs. total weight. Employs two adjustable check connecting links in the oil check unit instead of one, so that stresses of operation may be equally divided between them.

Overhead Type "B"—Consists, briefly, of lever arms on the doors, connected to two opposed pneumatic cylinders in turn connected to a common valve chest which alternately turns air pressure into one cylinder for opening stroke and into the other cylinder for the closing stroke. Single double-acting oil check unit.

Manually Operated Door Closers

Single Cushioning Type—A simple cylinder-unit device designed to close and lock doors automatically, quietly and rapidly. Has a single adjustable check unit to prevent door from slamming during *closing* motion only.

Double Cushioning Type—Same as Single Cushioning Type except that Cushioning adjustment is provided to prevent door from slamming *open and closed.*

Interlock Equipment

Interlocks prevent the movement of the elevator while any door is open, thereby reducing to a minimum the possibility of accidents to passengers entering or leaving car. Our years of experience in the manufacture and installation of thousands of interlocks under all manner of conditions and codes are your assurance of the safety and efficiency of operation of ES Interlocks.

Sheave Type Hangers

A careful study of the stresses and strains set up in hangers used for fast power operated doors has resulted in the development of a complete line of hangers, especially designed to meet the requirements of such service. These hangers are available in two classes, Type "A" and Type "BB". Type "A" Hangers are larger and have carrying capacities up to 1000 lbs. per panel. Type "BB" are recommended for usage under conditions requiring carrying capacities not more than 250 lbs. per panel.

ELEVATOR SIGNAL SYSTEMS FOR ALL TYPES OF BUILDINGS

It is the height and character of a building, plus the degree of efficiency desired of the elevator service, that determine which type of major and auxiliary elevator signaling systems shall be used. This company is especially fitted, through experience, to act in an advisory capacity as to which systems shall be used, and, through its extensive facilities, to provide promptly such systems as might be decided upon. In the following we merely list the systems that are most generally used. Complete details of operation and equipment will be furnished on request.

Major Signal Systems

Pre-Registering Signal System.
Complete or Full Flashlight Signal System.
Flashlight Annunciator System.
Locdrop Annunciator.
Flash-Set Annunciator System.
Combination Push Button and Illuminated Signal Panel System.
Department Store Signal System.

Supplementary Signal Devices

Automatic Dispatching Systems.
Car Position and Motion Indicator.
Tell-Tale Annunciator.
Car Position Indicator.
Mechanical Indicator.
Vertical Mechanical Indicator.
Electric Position Indicators.
Fadelite Indicator.
Starter's Call Back.

OTHER ES PRODUCTS

Elevator Accessories—A complete line of elevator service-improving equipment such as, Illuminated Thresholds, Guide Lubricators, Collapsible Car Gates, Curtain Gate Fenders, Directional Signs, Travel Recorders, Reverse Phase Relays, Stop Recorders, Telephone Systems, etc.

Electric Dumbwaiters—For all types of buildings and service.

Televeyors—Continuous duty electric tray conveyors entirely self-contained in portable, vertical cabinets for service between two connecting floors.

Televators—Complete electric push button dumbwaiters entirely self-contained in portable steel cabinets for service between two connecting floors.

Steel Fireproof Theatre Curtains—A fireproof, rigid steel theatre curtain that meets local ordinances and the requirements of Section 237 of the Building Code recommended by the National Board of Fire Underwriters.

Orchestra Platform and/or Organ Console Lift—Permits entire floor of orchestra pit or organ console platform to be raised or lowered at will.

Special Purpose Machinery—Our engineering experience and factory facilities are ideally coordinated to produce machinery of all kinds for special purposes.

Machinery for the Wire Industry—Such items as Continuous Wire Drawing Machines, High Speed Twisters, Reelers and Spoolers, Continuous Coiling Machines. Also Impregnating and Waxing Equipment for flame-stop wire and non-metallic sheathed cable.

GRANT ELEVATOR EQUIPMENT CORP.

33-36 57th Street, WOODSIDE, LONG ISLAND, N. Y.

CALIFORNIA REPRESENTATIVE: W. H. Steele Co., 443 South San Pedro Street, LOS ANGELES, CAL.

AGENCIES IN PRINCIPAL CITIES

PRODUCTS

Gem Ball Bearing Grille Gate Hangers.

Gem Ball Bearing Grille Gate Hangers (cantilever type).

Gem Ball Bearing Elevator Door Hangers.

Grant Combined Grille Gate Hangers (cantilever type) with Liquid Closer.

Grant Ball Bearing Elevator Door Hangers.

Grant Ball Bearing Grille Door Hangers (overhead type).

Grant Elevator Door Bar Locks.

Grant Dial Indicators.

Grant Ball Bearing Drawer Slides.

Grant Self-closing Door Hangers, consisting of a ball bearing door hanger combined with a liquid type closer check into one single unit.

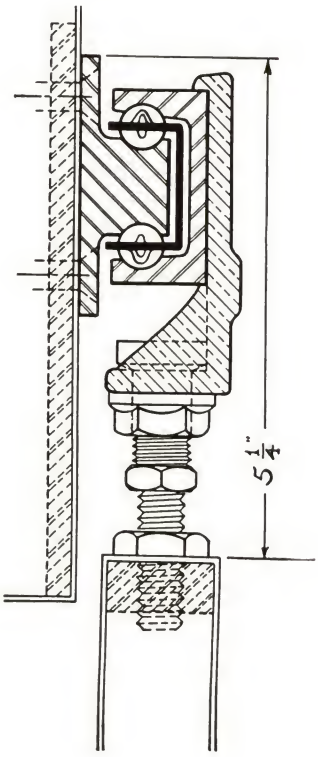
Grant Gate Operators for sliding gates in low type bank partitions.

Grant Bronze Bushed Elevator Door Closers.

Grant Approved Type Door Closer Interlocks.

For Sash Pulley, Window Hardware, etc., see page of Grant Pulley and Hardware Company as listed in File Index

GRANT BALL BEARING ELEVATOR DOOR HANGERS



Fabricated from *high carbon content steel* formed to the required shape and size by the *cold drawn* process which provides a hard and wear resisting surface.

The continuous mounting backplate is combined with the stationary center track into one solid unit assuring greater strength and rigidity.

Easy and noiseless operation is provided by means of an upper and lower row of case hardened steel balls interposed between the traveling and stationary members.

Two *drop forged steel brackets* are securely riveted to the traveling channel. Brackets are forged with a U slot which allows for ample lateral adjustment of the pendant bolts.

Two-point suspension is secured by the use of *patented pendant bolts* which fit into the U-shaped slots of the hanger brackets and are locked in position by special jamb nuts after the door has been properly adjusted.

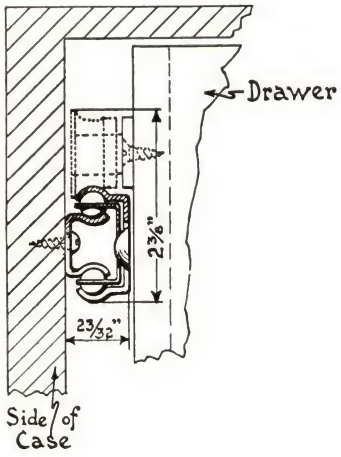
Lateral or vertical adjustments can be made at any time without removing the door from the hanger.

Drilling templets, giving all necessary information for installing, are furnished with all orders for hangers.

Illustration at right shows half full size section of the Grant No. 2 Ball Bearing Hanger for single door.

GRANT IMPROVED BALL BEARING DRAWER SLIDES

Designed for use in connection with built-in linen drawers, cedar drawers, kitchen cabinet drawers, etc., which contribute much to the modern residence conveniences. Also especially suitable for drawers in banks, libraries, post offices, hospitals and other large institutions where quick response to a slight pull is desirable.



Slides are fabricated from electro zinc plated steel with brass rollers which assures protection against rust and corrosion.

Drawers can be pulled out the full length so that all contents may be easily reached. Rubber stops are provided so that the drawer cannot be accidentally pulled entirely out of the case but the entire drawer with its contents may easily be removed at any time by merely tilting up the front edge of the drawer and lifting out.

In operation, the drawer pulls out four-fifths of the full length on the ball bearings while the balance of the travel is taken care of by the brass rollers.

Made in all sizes — easily installed. Full size detail sent on request. Measurement for slides is taken on outside of drawer from back of front panel to rear end of drawer.

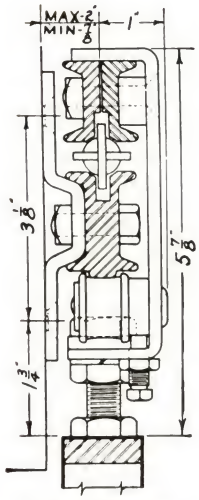
Write for prices and discounts.

WAGNER MANUFACTURING COMPANY

Manufacturers of Elevator Door Hangers and Operators

MAIN OFFICE AND WORKS
CEDAR FALLS, IOWA
SALES AGENCIES IN ALL LARGE CITIES

Wagner Ball Bearing Elevator Door Hangers



Type 100 Section Single Sliding Hanger

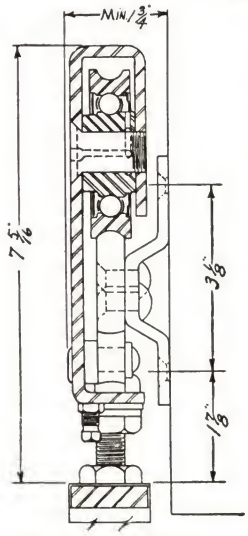
Hanger tracks are machined from a one-piece high carbon special I-beam section. Hanger bars are made from high carbon channel sections.

Ball raceways, track, hanger bars, and guide roller rails are milled, insuring true surfaces and smooth raceways. 5/8-in. diameter chrome nickel balls, spaced to provide at least a five-point bearing under the hanger bar at any point of its travel, are held in place by a heavy steel floating retainer bar.

Flanged adjustable guide rollers prevent derailing and absorb upthrust.

Guide thrust roller treads and guide roller rails are machined to a radius to coincide with distance from ball centers, which permits the hangers to automatically adjust themselves to irregularities in the enclosure construction.

Atlas Sheave Hangers



Atlas Type "B-1" Sheave Hanger

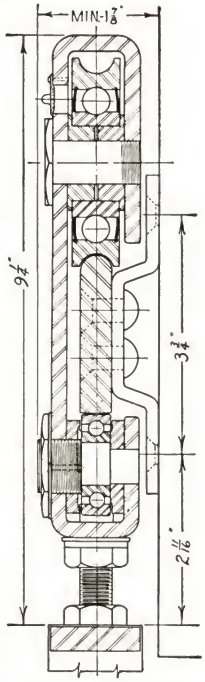
Atlas Type A-1 Sheave Hangers are intended for use with power door operators. Track is drawn from a special analysis high carbon steel. Both sheaves and stay rollers are equipped with high grade ball bearings, with provision for pressure lubrication.

Atlas Type A-1 Sheave Hangers are furnished with continuous or unit housings; one for each door panel, which are fastened to the top of the door panel by two pendant bolts. Vertical and lateral adjustment is provided.

The Atlas Type B-1 Sheave Hangers are intended for use in connection with manually operated door closers, and for other purposes where the heavier type is not required. These hangers are equipped with large sheaves and ball bearings to insure easy operation and long life. Provision is made for pressure gun lubrication. The track is drawn from high carbon steel.

Atlas Type B-1 Sheave Hangers are furnished with continuous or unit housings; one for each door panel, which are fastened to the top of the door panel by two pendant bolts. Vertical and lateral adjustment is provided.

Wagner Elevator Door Closer and Check



Atlas Type "A-1" Sheave Hanger

The Wagner Elevator Door Closer insures automatic, noiseless and positive closing and locking of sliding elevator doors.

Wagner Car Door or Gate Closers for push button controlled elevators are of the counterweighted type and can be furnished with electric interlocks and electrically released hold open devices.

Wagner Electric Safety Interlocks, used in conjunction with Wagner Closers, insure the closing and locking of elevator enclosure doors before the car can be started.

Wagner Door Closers and Interlocks can also be provided with cam operated mechanical lock for push button operation.

Wagner Electric Mechanical Barlock Interlock

The Wagner Electric Mechanical Barlock Interlock provides positive locking of sliding elevator doors where a door closer is not required. Doors must be locked before interlock circuit is closed and car can be started.

Wagner Power Elevator Door Operators

Vertical Type—Air opening, spring closing.

Overhead Type—Air opening and closing.

Master Pneumatic Operator—Master air power unit on car, enclosure doors and car doors operated simultaneously, power opening, spring closing.

Master Electric Operator—Master electric power unit on car, enclosure doors and car doors operated simultaneously, power opening, spring closing, high speed or slow speed operation.

Electric Car Gate or Door Operators—For push button elevators.

Underwriters' Labeled Hardware

Elevator Door Hangers, Closers and Power Operators can be furnished with Underwriters' Laboratories labels.

Wagner Elevator Signal Equipment

Flashlight signal systems. Flashlight annunciator signal systems. Restrictive signal systems. Mechanical reset target type annunciator signal systems. Waiting passenger lanterns, mechanical and electric indicators.

Boardman Elevator Traffic Control

The Boardman Elevator Traffic Control is an elevator dispatching system of the selective type, which, when applied to an elevator system, increases elevator efficiency and improves the elevator service.

Wagner-Boardman Traffic Engineers make a specialty of elevator traffic control and the results of years of study and experience are available to building owners and builders.

Also Manufacturers of Wagner Glideover Overhead Doors and Hardware and Wagner Canopy Overhead Door Hardware

MEMORANDA

ELECTRICAL SUPPLIES AND EQUIPMENT 23

- SECTION -

Section Number 1/5 Catalog Number

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THIS INDEX INCLUDES ONLY MANUFACTURERS WHOSE CATALOGS ARE FILED IN THIS SECTION

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Anaconda Wire & Cable Co. 23/1
Arrow-Hart & Hegeman Electric Co. 23/7
Boston Lightning Rod Co. 23/17
Bryant Electric Co. 23/8
Burkett Lightning Rod Co. 23/18
Dahlstrom Metallic Door Co. 23/3
General Electric Co.
Motors, Generators, Switchboards, etc. 23/13
Wiring Devices and Cables 23/9
Hart Mfg. Co. 23/14
Hazard Insulated Wire Works, Div. of Okonite Co. 23/2
Hubbell, Harvey, Inc. 23/10
Jones, Harold K., Co. 23/19
Pass & Seymour, Inc. 23/11
Robertson, H. H., Co. 23/4
Steel and Tubes, Inc. 23/5
Trumbull Electric Mfg. Co. 23/15
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Wiremold Co. 23/6

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THIS INDEX INCLUDES ADDITIONAL INFORMATION WHICH IS FILED IN OTHER SECTIONS

Products described or illustrated in manufacturers' catalogs are indexed by section and catalog numbers. All names are listed alphabetically under each product heading.

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BASE
Combined with Electrical Distribution System—Metal
See Conduit — Electrical — Combined with Base

BATTERY
Charging Equipment
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See Eliminators—Battery

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See Lightning Rods—Installing and Repairing

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Steel and Tubes, Inc...... 23/5

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Knapp Bros. Mfg. Co...... 9/6
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Fretz-Moon 23/5
G-E 23/9
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ANACONDA
from mine to consumer
REG. U.S. PAT. OFF.

Handbook OF ELECTRICAL WIRE AND CABLE

All materials and recommendations in this handbook conform to the National Electrical Code. Where local regulations are in excess of the National Electrical Code, consult local inspection authorities.

ANACONDA WIRE & CABLE COMPANY

GENERAL SALES DEPARTMENT • 25 BROADWAY, NEW YORK • • • CHICAGO • 20 NORTH WACKER DRIVE

ANACONDA WIRING MATERIALS
Recommended for Service Conditions

The following tables present a means of selecting the proper wire or cable for service conditions encountered in all types of buildings. All recommendations are based upon requirements of the National Electrical Code. Where code requirements are a minimum, a choice of more desirable materials is also given. Local authorities should be consulted in all cases.

CONDITION	KIND OF JOB	ANACONDA PRODUCT
1. SERVICE ENTRANCE Overhead	Best	**Service Entrance Cable;** Types SC, SCF, SC-100, SCF-100 (without conduit; may be run through to range.)
	Desirable	**Service Drop Cable;** Types C, CF, (with conduit protection down wall of house to meter.)
	Inexpensive	**Weatherproof Wire;** Type URC.
Underground	Commercial, Industrial	**Lead-sheathed Cable;** Types RL or VC, in conduit or duct.
	Residences, other small buildings	**Duraseal Cable;** Type T if buried entire length; Type D if extended up to overhead lines.
2. RUNS TO OUTBL'D'GS, GARAGES, GROUNDS Overhead	Desirable	**Service Drop Cable;** Types C, CF, (with conduit protection down wall of building to meter.)
	Inexpensive	**Weatherproof Wire;** Type URC.
Underground	Residences, other small buildings	**Duraseal Cable;** Type T if buried entire length; Type D if extended up to overhead lines.
3. OPEN WIRING Industrial Installations, Residences, etc.	Dry Locations Normal conditions	**Rubber-insulated Braid-covered Wire;** Type R single conductors, solid or stranded. (Code, Intermediate, 30%, Duracode or Special Grades.)
	Dry Locations Liable to mechanical injury	Same; but protect by running in boards or in either Anaconda Flexible Steel Conduit or Duraduct Flexible Nonmetallic Conduit.
	Damp or Wet Locations	**Lead-sheathed** or **Rubber-jacketed Wire** or **Cable.**
	Corrosive Locations	**Weatherproof** or **Rubber-jacketed Wire** or **Cable** as directed by local authorities.
	Hazardous Locations	**Open Wiring not Permitted.**
	Hot Locations	**Rubber-insulated Braid-covered Wire;** Type R (spec. rubber compound) **Asbestos Wire and Cable;** Type AVC.
4. CONCEALED KNOB-AND-TUBE WORK	Dry Locations Normal conditions	**Rubber-insulated Braid-covered Wire;** Type R single conductors, solid or stranded. (Code, Intermediate, 30%, Duracode or Special Grades.)
	Dry Locations Liable to mechanical injury	Same; but protect by running in boards or in either Anaconda Flexible Steel Conduit or Duraduct Flexible Nonmetallic Conduit.
	Damp or Wet Locations	**Rubber-jacketed Wire or Cable.**
	Corrosive Locations	**Rubber-jacketed Wire or Cable.**
	Hazardous Locations	**Open Wiring not Permitted.**
	Hot Locations	**Rubber-insulated Braid-covered Wire;** Type R (special rubber compound) **Asbestos-covered Wire and Cable;** Type AVC.

CONDITION	KIND OF JOB	ANACONDA PRODUCT
5. CONDUIT WORK AND ELECTRICAL METALLIC TUBING WORK (Conductors larger than No. 0 shall not be used in electrical metallic tubing work.)	Dry Locations	**Rubber-insulated Braid-covered Wire;** Type R single conductors, or Type RD duplex conductors.
	Wet or Damp Locations	**Rubber-insulated Braid-covered Wire;** Type R conductors may be used only if conduit system is water-tight; otherwise, **Lead-sheathed Wire and Cable;** Type RL.
	Corrosive Locations	**Rubber-insulated Braid-covered Wire;** Type R conductors may be used, but conduit should be corrosion-resisting, and system vapor-tight.
	Hazardous Locations	**Rubber-insulated Braid-covered Wire;** Type R conductors may be used, but conduit system must be installed with suitable protective equipment.
	Hot, Dry Locations Conduit work in boiler rooms, bakeries, steel mills, steam tunnels, etc.	**Rubber-insulated Braid-covered Wire;** Type R (special rubber compound) **Asbestos-covered Wire and Cable;** Type AVC.
6. SURFACE METAL RACEWAY SYSTEMS	Dry Locations	**Rubber-insulated Braid-covered Wire;** Type R conductors, not larger than No. 8 AWG.
7. ARMORED CABLE WORK Dry Locations	Exposed or concealed; buried in plaster	**Armored Cable;** Type AC (May be fished.)
Wet Locations	Underground runs, imbedded in masonry, concrete or fill in buildings under construction or exposed to moisture or destructive vapors	**Armored Leaded Cable;** Type ACL.
Hot or corrosive locations		**Armored Cable not Used.**
8. UNDERFLOOR RACEWAYS	Open-bottom Types	**Rubber-insulated Braid-covered Wire;** Type RD, or Type R, with double braid. If open-bottom pads are imperfect, Type AC **Armored Cable** or **Durax Non-metallic Sheathed Cable** must be used. Conductors shall be not larger than No. 8, AWG.
	Fully enclosed Types	**Rubber-insulated Braid-covered Wire,** Type R or Type RD.
	Wet Locations	Underfloor raceways should exclude moisture. If in doubt, **Rubber-insulated Lead-covered Wire,** Type RL, or **Armored Leaded Cable,** Type ACL, should be used.
9. NON-METALLIC SHEATHED CABLE SYSTEMS	Dry Locations Exposed or concealed	**Durax Non-metallic Sheathed Cable;** (May be fished.)
	Wet, hot hazardous or corrosive locations	**Non-metallic Sheathed Cable Not Permitted**

Material originally prepared for and issued as Time Saver Standards

ANACONDA WIRE & CABLE COMPANY

General Offices: 25 Broadway, New York ***20 North Wacker Drive, Chicago***

CONDITION	KIND OF JOB	ANACONDA PRODUCT
10. CAST-IN-PLACE RACEWAY WORK	Dry Locations	Rubber-insulated Braid-covered Wire; Type R or Type RD wires or cables.
	Wet Locations	Rubber-insulated Lead-covered Wire; Type RL, or Armored Leaded Cable; Type ACL should be used.
	Hot, Dry Locations	Rubber-insulated Braid-covered Wire; Type R, or Type RD (special rubber compound.)
11. UNDER-PLASTER EXTENSIONS	Conduit, Flexible Conduit, Armored Cable	If runs are in conduit, follow rules under section 5 for "conduit work". If flexible conduit is used, specify "Anaconda" Flexible Steel Conduit, and follow wire rules under" conduit work". If armored cable is used, follow rules under Section 7 for "armored cable".
12. WIREWAYS	For distribution to motors, lighting, etc.	Rubber-insulated Braid-covered Wire or Cable; Type R. Not more than 30 conductors allowed in one wireway, except where all in excess of 30 are for signalling circuits or are control wires between a motor and its starter. No conductor larger than 500,000 c.m. shall be used.
13. FIXTURE APPLIANCE AND PORTABLE TOOL WIRING Dry Locations	Chain-drop fixtures	Flexible Cord; Type FF - Single conductor.
	Portable Lamps, Clocks, etc.	Twisted Pair Lamp Cord; Type C, or Parallel Lamp Cord; Type P O.
	Portable Tools, Drop-cord fixtures (Subject to hard usage)	Two-conductor Reinforced Cord; Type P.
	Portable Lamps, Drop-cord fixtures (Not subject to hard usage)	Two-conductor Cord with Overall Braid; Type PD.
	Portable Tools, Lamps, Pendants and Stage Applications (Normal conditions)	Two-conductor or Multi-conductor Heavy-duty Cords; Type K.
	Portable Tools, Lamps, Pendants and Stage Applications (Severe Service or where long life is essential	DURACORD, SECURITYFLEX, or All-rubber Cords; Type S or SJ.
	Radios, Portable Lamps (Appearance dominating factor)	All-rubber Cord; Type PO-SJ.
Damp Locations	Pendants (Not subject to hard usage)	Reinforced Cord; Type PWP.
	Portable Tools, Lamps, Pendants and Stage Applications (Normal conditions)	Heavy-duty Cord; Type K.
	Portable Tools, Lamps, Pendants and Stage Applications (Severe Service or where long life is essential)	DURACORD, SECURITYFLEX, or All-rubber Cords; Type S or SJ. Brewery Cord and Deck Cable are also designed for these applications.
Corrosive Locations	Portable tools, etc. (exposed to vapors, gasolene, etc.)	Always use DURACORD.

CONDITION	KIND OF JOB	ANACONDA PRODUCT
13. (Continued) FIXTURE APPLIANCE AND PORTABLE TOOL WIRING Hazardous Locations	Fixture Wiring in Class I, II, III Locations	Rubber-insulated Braid-covered Wire, Type R, with 3/64" insulation installed in conduit hangers.
	Portable Lamps or Tools in Class I, II, III, IV Locations	DURACORD or All-Rubber Cord, Type S with extra ground conductor.
	Fixture Wiring in Class IV Locations	Rubber-insulated Braid-covered Wire, Type R, enclosed in conduit, size not less than No. 14, AWG.
	Garages: Portable Lamps, Tools, Charging Cables, etc.	DURACORD, SECURITYFLEX, or All-Rubber Cords, Type S.
Hot, Dry Locations (Where fixtures will be heated by lamps)	Chain or Pipe-stem Fixtures	Cotton-braid Cord, Type CF, or Asbestos-insulated Cord, Type AF.
	Pendants	Twisted, Braided Cord, Type CFPD.
Motion Picture Studios and Projection Rooms	Portable Tools, Lamps, etc.	DURACORD, SECURITYFLEX, or All-rubber Cords, Type S. Heavy-duty Cord Type K or Stage Cable.
	Pendant Lamps	Reinforced Cord, Type P, or Armored Cord, Type CA.
Theatres	Border Cables	DURACORD, All-rubber Cords, Type S, Heavy-duty Cords, Type K.
	Pendants in Dressing Rooms	Reinf'd Cord, Type P, Arm'd Cable, Type AC, or Arm'd Cord, Type CA.
	General Stage Portable Use	DURACORD, All-rubber Cords, Type S, Heavy-duty Cord, Type K.
14. LOW-TENSION SIGNALLING CIRCUITS In residences, low-cost apartments and small stores	Best	Rubber-insulated Braid-covered Wire, Type R, in conduit Armored Cable, Type AC, or Durax Non-metallic Sheathed Cable.
	Desirable	Rubber-insulated Telephone Wire; Series 7560.
	Inexpensive	Annunciator or Damp-proof Office Wire; Series 9260 or 9270.
	Long Runs	Rubber-insulated Braid-covered Wire; Type R, or Armored Cable; Type AC.
	Outdoor Runs	Outside Twisted Distributing Drop Rubber-insulated Telephone Wire; Series 7562.
In fine residences, apartments, office buildings, industrial plants, institutions, etc.	In Conduit or Underfloor Raceways	Rubber-insulated Braid-covered Wire; Type R.
	Inexpensive Non-fireproof Const.	Armored Cable; Type AC.
	Underground Runs	Rubber-insulated Lead-covered Wire; Type RL, or Parkway Cable.

ANACONDA WIRING MATERIALS
for Typical Occupancies

PURPOSE

The following tabulations indicate the selection of wire and cables to be used under all conditions met in bank buildings and residences. Where a choice of materials is involved, the considerations governing their choice are outlined. Products are identified both by general type and specific Anaconda designation. Wire sizes and number of conductors available for each are also listed. All recommendations conform to the National Electrical Code. Local authorities should also be consulted.

Materials for use in apartment houses, hospitals, and monumental structures, such as cathedrals, auditoria, memorials, etc., are similarly tabulated on pages 6 and 7.

Anaconda Wiring Materials are manufactured in several grades, to meet all conditions encountered in all types of construction.





BANKS					
Utility	Requirements	Kind of Wire or Cable	ANACONDA Designation	Available in Sizes	No. Conductors
SERVICE ENTRANCE	2, 3 or 4 wire underground, in conduit or duct.	Rubber-insulated lead-covered, or varnished cambric lead-covered cable.	RL - Better than Code Grade desirable. See Page 8.	#14 to 2,000,000 C.M.	1
				#14 to #4/0	2 (Twin)
				#14 to 500,000 C.M.	3
INTERIOR LIGHTING MAINS AND BUILDING POWER FEEDERS	a. Wiring fully protected in conduit.	Rubber-insulated building wire or cable.	R - Better than Code Grade desirable. See Page 8.	#14 to 2,000,000 C.M.	1
	b. Ditto - wet locations.	Rubber-insulated lead-covered cable.	RL - Better than Code Grade desirable. See Page 8.	#14 to 2,000,000 C.M.	1
				#14 to #4/0	2
				#14 to 500,000 C.M.	3
	c. Ditto - hot locations.	Slow-burning wire. Asbestos.	SB, AVC.	#14 to 2,000,000 C.M.	1
BRANCH CIRCUITS Light and Power	a. Wiring in conduit, normal conditions.	Rubber-insulated building wire.	R-Better than Code Grade desirable. See page 8.	#14 to 2,000,000 C.M.	1
	b. Ditto - wet locations.	Rubber-insulated lead-covered cable.	RL - Better than Code Grade desirable. See Page 8.	#14 or larger	2 to 3
	c. Ditto - hot locations.	Slow-burning wire. Asbestos.	SB, AVC.	#14 to 2,000,000 C.M.	1
	d. Vault lighting - in conduit.	Rubber-insulated lead-covered cable.	RL - Better than Code Grade desirable. See Page 8.	#14 or larger	1 to 3
LOW VOLTAGE SYSTEMS Feed for Vault; Hold-up Alarm and Vault Alarm	Wiring must be foolproof, and installed in conduit.	Rubber-insulated lead-covered wire or cable.	RL - Better than Code Grade desirable. See Page 8.	#14 or larger	1 to 3
Interior Telephones; Bell or Annunciator Systems and other low-voltage Signalling Systems. Watchman's Patrol System	Wiring in conduit, with minimum break-down risk.	Rubber-insulated building wire.	R.	#14 or larger	1 or 2
OUTSIDE LIGHTS, SIGNS	Water-tight wiring in conduit.	Rubber-insulated lead-covered wire.	RL - Better than Code Grade desirable. See Page 8.	#14 or larger	1 to 3

ANACONDA WIRE & CABLE COMPANY
General Offices: 25 Broadway, New York
20 North Wacker Drive, Chicago

RESIDENCES

Utility	Requirements	Kind of Wire or Cable	ANACONDA Designation	Available in Sizes	Available in No. Conductors
SERVICE ENTRANCE	a. Overhead 2 or 3 wire service; weather-resistant; mechanically strong.	Service drop cables.	C, CF.	#12 to #2	2 or 3
		Service entrance cables.	SC, SCF, SC-100, SCF-100	#12 to #2	2 or 3
		Armored service entrance cables.	ASEC.	#12 to #2	3
	b. 2 or 3 wire service for burial directly in ground.	Underground service entrance cable.	Type T Duraseal if buried for entire length.	All	2 or 3
			Type D Duraseal if part of cable will be run up pole.	All	2 or 3
	c. 2, 3 or 4 wire service installed in conduit or duct underground.	Rubber-insulated lead-covered cable.	RL.	#14 to 2,000,000 C.M.	1
				#14 to #4/0	2
				#14 to 500,000 C.M.	3 or 4
INTERIOR LIGHTING MAINS AND POWER MAINS	a. Inexpensive wiring, "Knob and tube," in non-fireproof buildings.	Rubber-insulated building wire or cable.	R.	#14 to 2,000,000 C.M.	1
	b. Ditto, where metal protection is desired.	Armored cable.	AC - for dry locations.	#14 to #2	1 to 4
		Armored leaded cable.	ACL - in wet locations, or if buried in masonry.	#14 to #4	2 or 3
	c. Ditto, where metal-protected covering is not required.	Non-metallic sheathed cable.	Durax.	#14 to #4	2 or 3 with or without ground wire
	d. For wiring fully protected in conduit.	Rubber-insulated building wire or cable.	R.	#14 to 2,000,000 C.M.	1
			RD.	#14 to #6	2
BRANCH CIRCUITS Light and Power	a. Inexpensive wiring, "Knob and tube," in non-fireproof buildings.	Rubber-insulated building wire or cable.	R.	#14 to 2,000,000 C.M.	1
	b. Ditto, where metal protection is desired.	Armored cable.	AC - for dry locations.	#14 to #2	1 to 4
		Armored leaded cable.	ACL - in wet locations, or if buried in masonry.	#14 to #4	2 or 3
	c. Ditto, where metal protection is not desired, and the "Knob and tube," system is not desired.	Non-metallic sheathed cable.	Durax.	#14 to #4	2 or 3 with or without ground wire
	d. For wiring fully protected in conduit.	Rubber-insulated building wire or cable.	R.	#14 to 2,000,000 C.M.	1
			RD.	#14 to #6	2
OUTDOOR RUNS To Garages, Driveway Lights, etc.	a. Inexpensive overhead wiring - with conduit protection up sides of buildings.	Rubber-insulated building wire or cable.	R.	#14 to 2,000,000 C.M.	1
	b. Ditto - for overhead span only, not inside of conduit.	Weatherproof wire or cable.	URC.	All	Single
	c. For wiring buried directly in ground.	Duraseal cable.	Type T Duraseal	All	Multiple
	d. For wiring in conduit or duct.	Rubber-insulated lead-covered cable.	RL.	#14 to 2,000,000 C.M.	1
				#14 to #4/0	2 (Twin)
				#14 to 500,000 C.M.	3
LOW VOLTAGE SYSTEMS Interior Telephones, Bell Wiring, Signalling Systems, etc.	a. Low-cost wiring; dry locations only; concealed.	Annunciator wire.	Annunciator wire. Series 9260	#14 to #24	1
	b. Ditto - but damp-resistant.	Damp-proof office wire.	Damp-proof office wire. Series 9270	#14 to #20	1 or 2
	c. Long-life service, in conduit or unprotected; also, for exposed wiring.	Rubber-insulated telephone wires.	Rubber-insulated telephone wires. Series 7560-7562	#14 to #22	Twisted pair
	d. Long-life service, non-metallic.	Non-metallic sheathed cable.	Durax.	#14 or larger	2 or 3
	e. Maximum protected wiring, in conduit.	Rubber-insulated building wire.	R.	#14 or larger	1
Antenna System	a. For outside antenna.	Antenna wire.	Antenna wire. Series 1510	#12 to #15	Bare, tinned or enameled
	b. For lead-in, preferably in conduit.	Rubber-insulated building wire.	R.	#14 or larger	1

ANACONDA WIRING MATERIALS
for Typical Occupancies

The following tabulations indicate the selection of wire and cables to be used in apartment houses, hospitals and monumental structures.

Materials for use in bank buildings and residences are similarly tabulated on pages 4 and 5.

APARTMENTS					
Utility	Requirements	Kind of Wire or Cable	ANACONDA Designation	Available in Sizes	No. Conductors
SERVICE ENTRANCE	a. Overhead 2 or 3 wire service; weather-resistant.	Service drop cables.	C, CF.	#12 to #2	2 or 3
		Service entrance cables.	SC, SCF, SC-100, SCF-100.	#12 to #2	2 or 3
		Armored service entrance cables.	ASEC.	#12 to #2	3
	b. 2 or 3 wire service for burial directly in ground.	Underground service entrance cable.	Type T Duraseal if buried for entire length.	All	2 or 3
			Type D Duraseal if part of cable will be run up pole.	All	2 or 3
	c. 2, 3 or 4 wire service for installation in conduit or duct underground.	Rubber-insulated lead-covered cable.	RL - Better than Code Grade desirable. See Page 8.	#14 to 2,000,000 C.M.	1
				#14 to #4/0	2
				#14 to 500,000 C.M.	3 or 4
INTERIOR LIGHTING MAINS AND BUILDING POWER Elevators, etc.	a. Inexpensive wiring; in non-fireproof buildings; where metal protection is desired.	Armored cable.	AC - in dry locations.	#14 to #2	1 to 4
		Armored leaded cable.	ACL - in wet locations, or if buried in masonry.	#14 to #4	2 or 3
	b. Ditto, where metal protective covering is not required.	Non-metallic sheathed cable.	Durax.	#14 to #4	2 or 3 with or without ground wire
	c. For rigid conduit wiring in fireproof buildings.	Rubber-insulated building wire or cable.	R - Better than Code Grade desirable. See Page 8.	#14 to 2,000,000 C.M.	1
BRANCH CIRCUITS Light and Power	a. Inexpensive wiring; in non-fireproof buildings; where metal protection is desired.	Armored cable.	AC - in dry locations.	#14 to #2	1 to 4
		Armored leaded cable.	ACL - in wet locations, or if buried in masonry.	#14 to #4	2 or 3
	b. Ditto, where metal protective covering is not required.	Non-metallic sheathed cable.	Durax.	#14 to #4	2 or 3 with or without ground wire
	c. For rigid conduit wiring in fireproof buildings.	Rubber-insulated building wire or cable.	R - Better than Code Grade desirable. See Page 8.	#14 to 2,000,000 C.M.	1
	d. For wiring in hot locations - in conduit.	Slow-burning wire, Asbestos.	SB, AVC.	#14 to 2,000,000 C.M.	1
OUTDOOR RUNS To Garages, Driveway Lights, etc.	a. For wiring buried directly in ground.	Duraseal cable.	Type T Duraseal.	All	Multiple
	b. For wiring in conduit or duct.	Rubber-insulated lead-covered cable.	RL.	#14 to 2,000,000 C.M.	1
				#14 to #4/0	2 (twin)
				#14 to 500,000 C.M.	3
LOW VOLTAGE SYSTEMS Interior Telephones, Door Opener, Bells, Signalling Systems, etc.	a. Low-cost wiring; dry locations only; concealed.	Annunciator wire.	Annunciator wire. Series 9260	#14 to #24	1
	b. Ditto - but damp-resistant.	Damp-proof office wire.	Damp-proof office wire. Series 9270	#14 to #20	1 or 2
	c. Long-life service, in conduit or unprotected; also for exposed wiring.	Rubber-insulated telephone wires.	Rubber-insulated telephone wires. Series 7560-7562	#14 to #22	Twisted pair
	d. Maximum protected wiring, in conduit.	Rubber-insulated building wire.	R.	#14 or larger	1
Antenna System	a. For antenna.	Antenna wire.	Antenna wire. Series 1510	#12 to #15	Bare, tinned or enameled
	b. For lead-in, preferably in conduit.	Rubber-insulated building wire.	R.	#14 or larger	1

ANACONDA WIRE & CABLE COMPANY
General Offices: 25 Broadway, New York 20 North Wacker Drive, Chicago

MONUMENTAL STRUCTURES - CATHEDRALS, AUDITORIUMS, MEMORIALS

Utility	Requirements	Kind of Wire or Cable	ANACONDA Designation	Available in Sizes	Available in No. Conductors
SERVICE ENTRANCE	a. 2, 3, or 4 wire underground, in conduit or duct.	Rubber-insulated lead-covered cable, or varnished cambric, lead-covered.	RL - Better than Code Grade desirable. See Page 8.	#14 to 2,000,000 C.M.	1
				#14 to #4/0	2 (Twin)
				#14 to 500,000 C.M.	3
INTERIOR LIGHT AND POWER MAINS	a. For circuits which will operate for many years, in conduit.	Rubber-insulated lead-covered wire or cable.	RL - Better than Code Grade desirable. See Page 8.	#14 to 2,000,000 C.M.	1
				#14 to #4/0	2 (Twin)
				#14 to 500,000 C.M.	3
BRANCH CIRCUITS Light and Power		Varnished cambric lead-covered cable. Note: Lead-covered cable should be thoroughly greased before pulling in, to permit easy removal after many years in conduit.	Varnished Cambric Cable.	All	Multiple
LOW VOLTAGE SYSTEMS Interior Telephones, Signalling Systems, etc.					
Loud Speaker Systems	b. For circuits, wiring of which will be replaced in a relatively few years. (In conduit).	Rubber-insulated building wire or cable.	R - Better than Code Grade desirable. See Page 8.	#14 to 2,000,000 C.M.	1
OUTDOOR RUNS To Driveway Lights, etc.	a. For wiring buried directly in ground.	Type T Duraseal cable.	Type T Duraseal.	All	Multiple
	b. For wiring in conduit or duct.	Rubber-insulated lead-covered cable.	RL - Better than Code Grade desirable. See Page 8.	#14 to 2,000,000 C.M.	1
				#14 to #4/0	2 (Twin)
				#14 to 500,000 C.M.	3

HOSPITALS

Utility	Requirements	Kind of Wire or Cable	ANACONDA Designation	Available in Sizes	Available in No. Conductors
SERVICE ENTRANCE	a. 2, 3, or 4 wire underground, in conduit or duct.	Rubber-insulated lead-covered or varnished cambric lead-covered cable.	RL - Better than Code Grade desirable. See Page 8.	#14 to 2,000,000 C.M.	1
				#14 to #4/0	2 (Twin)
				#14 to 500,000 C.M.	3
INTERIOR LIGHTING MAINS AND BUILDING POWER FEEDERS	a. Wiring fully protected in conduit.	Rubber-insulated building wire or cable.	R.	#14 to 2,000,000 C.M.	1
	b. Ditto - hot locations.	Slow-burning wire. Asbestos.	SB, AVC.	#14 to 2,000,000 C.M.	1
	c. Ditto - wet locations.	Rubber-insulated lead-covered cable.	RL - Better than Code Grade desirable. See Page 8.	#14 to 2,000,000 C.M.	1
				#14 to #4/0	2 (Twin)
				#14 to 500,000 C.M.	3
BRANCH CIRCUITS Light and Power	a. Wiring in conduit, normal conditions.	Rubber-insulated building wire	R - Better than Code Grade desirable. See Page 8.	#14 to 2,000,000 C.M.	1
	b. Ditto - hot locations.	Slow-burning wire. Asbestos.	SB, AVC.	#14 to 2,000,000	1
	c. Ditto - wet locations.	Rubber-insulated lead-covered cable.	RL - Better than Code Grade desirable. See Page 8.	#14 or larger	1 to 3
LOW VOLTAGE SYSTEMS Bell or Annunciator Systems; Interior Telephones	a. Wiring in conduit.	Rubber-insulated building wire.	R.	#14 or larger	1
		Multiple conductor cable.	Series 7560	#19 and larger	Multiple
Nurses Call System; Fire Alarm System	a. Wiring in conduit.	Rubber-insulated building wire.	R.	#14 or larger	1
OUTSIDE LIGHTS, SIGNS	a. Water-tight wiring in conduit.	Rubber-insulated lead-covered cable.	RL - Better than Code Grade desirable. See Page 8.	#14 or larger	1 to 3

ANACONDA WIRE & CABLE
TYPES and SIZES

TYPES OF INSULATION

The following types of insulation, having flame-retarding finish standards, are for use under normal building conditions.

Minimum Standard — National Electrical Code Standard Rubber Insulation; acceptable where only minimum requirements must be met.

25% Grade or "Intermediate" (Rubber Insulation) — next higher quality; contains at least 25% new rubber; has longer life, greater resistance to abuse and improved electrical value.

30% Grade — at least 30% new rubber; superior to the 25%.

DURACODE Grade — special Anaconda specifications, designed to resist deterioration from heat, oxidation or moisture; possesses great durability; for high class construction.

Wire and cables with insulation for special requirements are supplied as follows:

TYPE ACR — high-voltage type for lighting and power service; ozone resistant; lasting physical and electrical properties.

TYPE ANW — for low-voltage network cables and special industrial uses; highly resistant to moisture, acids and alkalies; low susceptibility to combustion and explosion.

TPYE AHR — a heat-resisting long-aging compound for lighting, power, signaling and control cables operating in high temperature locations.

PERFORMITE — a high-grade compound for service such as fire alarm, signal and control cables, high insulation resistance, good aging and physical properties.

Varnished Cambric Cable — for generator leads, motor leads, bus structures, industrial power and lighting, etc.

Asbestos Wire and Cable — for use under exposure to excessive heat as in fixture wiring, boiler rooms, switchboards, etc.

In addition to the above types of insulation, Anaconda wire and cables are manufactured with insulation meeting Federal Specification Board Specifications JC-101a and JC-106.

ANACONDA SERVICE

The Anaconda Wire & Cable Company maintains engineering and research laboratories to assist in solving difficult or unusual problems relating to wire and cable. The services of these staffs are available at all times for the solution of technical problems or for the development of special cables.

In addition to the general offices listed below, the Anaconda Wire & Cable Company maintains 22 district sales offices and 11 manufacturing plants, located throughout the country. Addresses of these local offices as well as assistance with special problems may be had by writing to the general offices.

RUBBER INSULATED WIRES and CABLES

RUBBER-INSULATED AND BRAID-COVERED WIRE AND CABLE. Type R—600 volts—Single conductor. Solid or stranded.

Code, Intermediate, 30%, Duracode or special grades of rubber compound.



Used for building light and power wiring in dry, protected locations. This includes wiring in conduit, underfloor duct or other raceways; knob and tube wiring; open wiring with porcelain cleats along ceilings or walls; also desirable for long, low-tension or signalling circuits.

RUBBER-INSULATED AND BRAID-COVERED CABLE. Type RD—600 volts—Duplex conductors. Solid or stranded.

Code, Intermediate, 30%, Duracode or special grades of rubber compound.



Used for interior wiring in conduit or other metal raceways, but applications limited to circuits using wire sizes No. 14 to No 6. Also used for streamers for temporary light and power on construction jobs.

RUBBER-INSULATED, LEAD-COVERED WIRE AND CABLE. Type RL—600 volts—Single, duplex or three conductor. Solid or stranded.

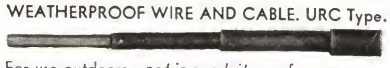
Code, Intermediate, 30%, Duracode or special grades of rubber compound.



For use in moist locations where installed in raceway or otherwise protected from mechanical damage. Particularly useful for wiring in laundries, dye housing, dairies, creameries and in locations liable to be flooded. Also used for underground runs in conduit or other raceway to outlying buildings, yard lights, gasoline pumps, etc.

SERVICE ENTRANCE CABLES

WEATHERPROOF WIRE AND CABLE. URC Type.



For use outdoors—*not in conduit*—or for open wiring in buildings where corrosive vapors exist.

NON-METALLIC ARMORED CABLE. Type T Duraseal. Made in any number of conductors and in all sizes. 30% or special grades of rubber compound.



For power lighting or control circuits and for underground service entrance cable. No conduit needed.

SERVICE DROP CABLES. Types C, CF. Two and three conductors, No. 12 to No. 2 with 30% rubber compound. For services up to 150 volts to ground.



For service run from pole line to house. May also be run in conduit from weatherhead to meter (in some localities conduit is not required).

SERVICE ENTRANCE CABLE. Types SC, SCF, SC-100, SCF-100. Two and three conductors with 30% rubber compound. For services up to 150 volts to ground.



For service runs from pole to meter. Also for run direct to electric range. No conduit necessary.

TYPE ASEC—Armored Service Entrance Cable for unprotected locations. For services up to 150 volts to ground.

UNDERGROUND SERVICE ENTRANCE CABLE. Types T and D Duraseal. Single and multiple conductors in all sizes. For services up to 600 volts to ground.



For service runs from pole, or from transformers vault, underground to house, and into house to meter. Type T is intended to be buried for its entire length. Type D may be run up pole to overhead lines.

ARMORED & SHEATHED CABLES

ARMORED CABLES. Type AC—600 volts. Single, two, three and four conductors—solid or stranded.



For general light and power wiring in non-fireproof homes, industrial plants and other buildings. May be run either concealed or exposed, in dry locations. Very useful for fishing work on remodeling jobs.

Type ACL—600 volts. Two and three conductors.



For use same as above, except that this cable resists moisture. It may therefore be used for connections to outdoor signs, runs up poles to floodlights and in any damp indoor location.

DURAX NON-METALLIC SHEATHED CABLE — 600 volts. Made with or without ground wire, in two or three conductors, sizes No. 14 to No. 4.



Widely used for interior concealed or exposed jobs, where moisture is not present and where there is no danger of mechanical injury. This cable may be fished. Particularly adapted to residential jobs.

ARMORED GROUND WIRE—Series 6040. No. 8 or No. 6 AWG, single conductor, solid.



Used for grounding interior wiring systems, where armor is required to protect the copper conductor from mechanical injury.

ANACONDA WIRE & CABLE COMPANY

General Offices: 25 Broadway, New York — *20 North Wacker Drive, Chicago*

FLEXIBLE CONDUIT

FLEXIBLE STEEL CONDUIT. Inside diameter from 5/16" to 3"



For use in place of rigid conduit and for short runs where bends must be sharp or irregular; also for connections between motors and control devices. If used in damp locations, wires must be lead-sheathed.

DURADUCT FLEXIBLE NON-METALLIC CONDUIT. Inside diameter from 7/32" to 2½"



For protection of open wires in knob-and-tube or cleat work. Also used to protect wires which must be fished in a partition or ceiling.

WIRES and CABLES for SPECIAL USES

ANTENNA WIRE. Solid or flexible, bare, tinned or enameled.



Used for radio receiving or transmitting antennas.

SLOW BURNING WIRE AND CABLE Type SB—Single conductor.



For use in switchboards, in wire towers, in hot locations generally. May be installed in conduit if location is permanently dry.

SIGNAL AND CONTROL CABLE. Multi-conductors sizes No. 19 to No. 8 AWG. Solid or stranded. 30%, Duracode or special grades of rubber compound. Weatherproof braided, rubber-jacketed or lead-sheathed.



For use in any type of signal or control circuits within or between buildings, in elevators, etc.

NEON SIGN AND OIL BURNER IGNITION CABLE. Single conductor.



For use with Neon signs and connections for oil burner ignition systems.

VARNISHED CAMBRIC CABLE. Made in single, two, three and four conductors in all sizes. Furnished with weatherproofed or flameproofed braid or lead sheath.



For inside power wiring; high-tension primary lines or low-voltage distribution. For damp locations use lead-sheathed cable only.

WIRES for LOW-TENSION TELEPHONE & SIGNAL SYSTEMS

ANNUNCIATOR WIRE. Single conductor, or twisted pair wire. Cotton covering, saturated with paraffin.



For low-tension circuits, usually run unprotected in walls and ceilings. Not adapted for pulling into conduit or other raceways. Not serviceable in damp locations.

RUBBER-INSULATED TELEPHONE WIRE. Outside Twisted. Distributing Drop wire twisted conductors.



Particularly adapted for overhead telephone or other signalling runs between buildings.

INSIDE WIRE. Twisted conductors. Furnished with rubber insulation on each conductor and can be obtained in one or more pairs with weather proofed braid or lead sheath.



A most satisfactory wire for interior telephone systems, code calling systems, annunciator or bell systems.

FIXTURE WIRES

RUBBER-COVERED FIXTURE WIRE. Type RF—300 volts—Single conductor. Solid or stranded.

Code, Intermediate, 30%, Duracode or special grades of rubber compound.



Used on fixtures, where operating temperature is not excessive.

FLEXIBLE CORD. Type FF—Single conductor.

Code, Intermediate, 30% or special grades of rubber compound.



For use on chain-drop fixtures, in dry locations.

FLEXIBLE HEAT RESISTING. Type CF—Cotton braid. Single conductor Fixture Wire.



For use on fixtures in dry places, operating at not over 300 volts.

Type CFPD—Two or three conductors. Twisted, braid overall.



For pendants not subject to hard usage.

PORTABLE CORDS and LAMP CORDS

BRAID OVERALL. Type PD—Two conductor. Code grade.



For use on portable lamps, clocks, or for drop-lights, will not stand hard usage, or moisture.

REINFORCED CORD. Type P—Two conductor. Code grade.

REINFORCED CORD. Type PWP—Two conductor. Code grade.



Type P for use on portable tools, drop-cord fixtures, etc., where subject to hard usage in dry locations only. Type PWP for use on pendants not subject to hard usage. May be used in damp places.

ALL-RUBBER CORDS. Type S or SJ—Two or three conductor. 30% insulation, 40% jacket.

ALL-RUBBER CORD. Type PO-SJ—Two conductors-parallel. Furnished in Black, Green, Brown and Ivory-colored Rubber Jacket.

SECURITYFLEX CORDS. Single, two, three and four conductor; heavy duty or light-duty. 60%. Mold-cured.



Type PO-SJ for use on portable lamps, radios, clocks, etc. not subject to hard use. Others for use on all portable electric machines, cord fixtures, etc. subject to hard usage and dampness.

HEAVY-DUTY CORDS. Type K—Two conductor and three-conductor. Code grade.



For use on portable tools, lamps, pendants, and general stage use—Border Light Cable. Particularly designed to withstand hard usage and dampness.

ARMORED LAMP CORD. Type CA—Two conductors. Code grade.



For pendants in dry places where subject to hard usage, and in some hazardous locations. Also, for pendants in show windows.

DURACORD WIRE AND CABLE. Made in single, two, three and four conductors, in all sizes.



For heavy-duty portable cord service where extremely hard service is encountered, in industrial plants, mines, etc. such as connections to dental and medical equipment, tools, machines, stage applications, etc.

ANACONDA
from mine to consumer
REG U.S. PAT. OFF.

DETERMINING WIRE SIZES

PURPOSE

Sizes of conductors used in all normal electrical circuits in buildings may be determined from data presented on this and the following page, either on the basis of National Electrical Code requirements or on the basis of voltage drop and operating efficiency. In addition, conduit sizes, and the spaces required for conduits in chases or channels are given.

For the selection of wires and cables for any type of service condition in buildings, see pages 2 and 3. For selection of conductors according to service conditions, see pages 2 and 3. For recommended uses of Anaconda wires and cables in different types and occupancies of buildings, see pages 4 to 7. For data on specific Anaconda wiring materials, see pages 8 and 9.

WIRE SIZES

National Electrical Code requirements as to wire sizes are founded wholly upon safety: that is, minimum sizes are established to keep temperatures within safe limits as a precaution against fire and destruction of insulation.

Since the larger the wire size in relation to the current carried, the less resistance and loss of power, it is normally advantageous to exceed N.E.C. requirements in order to minimize voltage drop and waste of current. An economic balance must be obtained between initial cost and loss of power due to inadequate wire sizes.

SELECTION BASED ON N.E.C.

If minimum permissible wire sizes are desired, without regard for voltage drop or loss, select conductor sizes from Table I for circuits of any length.

SELECTION BASED ON VOLTAGE DROP

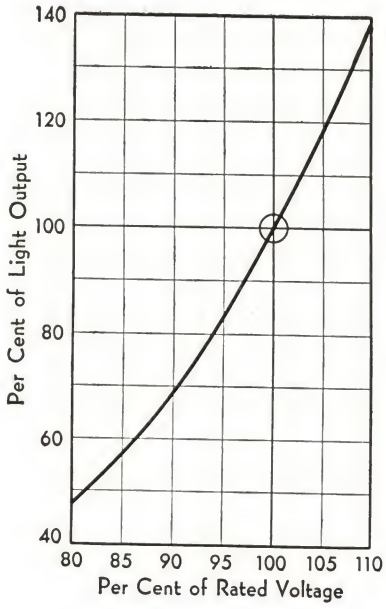
When economic factors, such as operating costs, performance of lighting and power equipment at rated capacities, and reserve capacity for temporary overloads govern design, select wire sizes from Table II according to length of circuit and permissible voltage drop. Use values in this table as follows:

(a) Measure length of circuit from distribution center to point of load along one side of circuit only; i. e., circuit length—not total wire length. In the case of branch circuits serving multiple outlets, measure from distribution center to center of load.

(b) Determine per cent permissible voltage drop for the circuit under consideration. The Industry Committee on Interior Wiring Design, in its handbook (1937) recommends the following voltage drops be considered minimum good practice: feeder currents for lighting, 2%; branch circuits 2%; circuits serving motors, overall from distribution center, 5%.

(c) Express the total allowable drop in volts and multiply the known circuit length by this figure. Example: Voltage supplied 115 v.; permissible drop 1½%; circuit length, as measured 72 ft. Then allowable volts lost equals $115 \times .015 = 1.725$ v. Circuit length equal to one volt drop is then $72 \times 1.725 = 124.2$ ft.

(d) In Table II find the smallest wire size (No. 12 or larger) which will carry the known load in amperes the distance thus found. (Note that Table II gives lengths for a 1 volt drop only.) Example, as above except load assumed to be 15 amps.: In column for 15 amps. note that No. 4 wire will serve 130 feet and No. 6 only 82 feet. Specify No. 4 wire or redesign circuit for shorter run or lighter load.



The economic value of adequate wire sizes is best demonstrated by the effect of subnormal voltages on the performance of lamps. For each drop of 1% in delivered voltage below the rating of a lamp there is a loss of about 3% or more in light emitted. If wire sizes are too small to deliver rated voltage to lamps, motors and appliances, building owners face very unsatisfactory performance of electrical equipment as well as excessive line losses.

ANACONDA
from mine to consumer
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I - Wire Sizes Based on Safety Only (N.E.C.)

Condr. Size		Max. Load in Amp's		
Awg.	Circ. Mils	Rubber Insulation	Varnished Cambric	Other Insul. or Bare
14	4,107	15	18	20
12	6,530	20	25	30
10	10,380	25	30	35
8	16,510	35	40	50
6	26,250	50	60	70
4	41,740	70	85	90
3	52,630	80	95	100
2	66,370	90	110	125
1	83,690	100	120	150
0	105,500	125	150	200
2/0	133,100	150	180	225
3/0	167,800	175	210	275
4/0	211,600	225	270	325
	350,000	300	360	450
	500,000	400	480	600

ABOVE CURRENTS ARE MAXIMUM allowed by National Electrical Code. For high ambient temperatures or more than one cable in a conduit these values should be reduced. Sizes measured in circular mils are incomplete above 4/0 Awg.

II - Wire Sizes Based on Performance - Lengths of A-C Circuits Permissible for Drop of One Volt

Size Awg. or C.M.	Permissible Length of Run in Feet for Drop of One Volt Varying Loads in Amperes as Indicated											
	3 Amp	5	10	15	20	25	30	40	50	60	80	100
14	65	39	19	13								
12	103	62	31	21	15							
10	164	98	49	33	25	20						
8	258	155	78	52	39	31	26					
6	410	246	124	82	62	49	41	31	25			
4	650	390	195	130	98	78	65	49	39	32		
3	815	488	245	163	122	98	81	60	49	41	31	
2	1020	612	306	204	153	122	102	76	61	51	38	
1	1270	762	380	254	191	153	127	95	76	64	48	38
0	1570	940	470	314	236	188	157	118	93	78	59	47
2/0	1930	1150	580	385	289	231	193	145	115	96	72	58
3/0	2340	1400	700	468	351	281	234	176	140	117	88	70
4/0	2800	1680	840	561	422	336	280	210	168	140	105	84
*350 M	3770	2270	1130	755	567	453	377	283	227	188	142	113
*500 M	4400	2640	1320	882	661	528	440	331	264	220	165	132

Table applies to single-phase, two-wire, 60 cycle A-C circuits in standard rubber and braid-covered wire and cable - 600 volt class and complies with N.E.C. requirements as to maximum allowable loads.

For other voltage drops, multiply above distances by desired drop. For other currents, multiply the distances in the table by the ratio of the current in the table to the new current. Example: The table shows a permissible circuit length of 561 feet for a 4/0 cable carrying 15 amperes. If it is desired to carry 150 amperes on the circuit the permissible length would be 561 feet times the ratio of 15 amperes to 150 amperes, or 56 feet.

* 350 M = 350,000 C.M.; 500 M = 500,000 C.M.

CALCULATING WIRE SIZES

When it is desired to calculate wire size directly from known length, voltage drop and load in amperes, use the following rule: Multiply length of circuit in feet by load in amperes and this result by 21.5. Divide by allowable drop in volts. The quotient will be wire size in circular mils. Consult Table I for partial list of wire sizes expressed in circular mils and specify Awg. size equal to or larger than the computed size.

CONDUIT SIZES

In the "Handbook of Interior Wiring Design," noted above, it is recommended that all circuits subject to possible increases in load or length of run should be installed in conduit or ducts having an ultimate carrying capacity substantially in excess of initial requirements. Alternative is to install feeders with capacity 50% in excess of initial requirements.

Allowable conduit capacities are given in Table III for wire sizes shown.

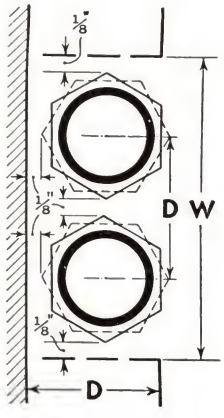
CONDUIT SPACING

When two or more conduits are installed in chases, channels, pipe shafts or other constricted spaces, clearances must be allowed between conduits for using wrenches and other tools on couplings. These clearances have been computed in Table IV for two conduits with 1/8" minimum spacing. For single conduits dimension D equals dimension W. Clearances for any number of conduits can be found from these data.

III - Minimum Conduit Sizes - (N.E.C.; Varnished Cambric or Rubber Insulated and Braid Covered Wire)

Size of Conductor Awg. or C.M.	Number of Conductors in One Conduit								
	1	2	3	4	5	6	7	8	9
	Minimum Size of Conduit in Inches								
14	1/2	1/2	1/2	1/2	3/4	3/4	3/4	1	1
12	1/2	1/2	1/2	3/4	3/4	1	1	1	1 1/4
10	1/2	3/4	3/4	3/4	1	1	1 1/4	1 1/4	1 1/4
8	1/2	3/4	1	1	1 1/4	1 1/4	1 1/4	1 1/4	1 1/2
6	1/2	1	1 1/4	1 1/4	1 1/2	1 1/2	2	2	2
4	3/4	1 1/4	1 1/4	1 1/2	2	2	2	2	2 1/2
3	3/4	1 1/4	1 1/4	1 1/2	2	2	2	2 1/2	2 1/2
2	3/4	1 1/4	1 1/2	1 1/2	2	2	2 1/2	2 1/2	2 1/2
1	3/4	1 1/2	1 1/2	2	2	2 1/2	2 1/2	3	3
0	1	1 1/2	2	2	2 1/2	2 1/2	3	3	3
2/0	1	2	2	2 1/2	2 1/2	3	3	3	3 1/2
3/0	1	2	2	2 1/2	3	3	3	3 1/2	3 1/2
4/0	1 1/4	2	2 1/2	2 1/2	3	3	3 1/2	3 1/2	4
350,000	1 1/4	2 1/2	3	3 1/2	3 1/2	4			
500,000	1 1/2	3	3	3 1/2	4	4 1/2			

IV - Space Requirements for Conduits - Dimensions in Inches



Conduit Sizes →	1/2"		3/4"		1"		1 1/4"		1 1/2"		2"		2 1/2"		3"		3 1/2"	
↓	D	W	D	W	D	W	D	W	D	W	D	W	D	W	D	W	D	W
1/2"	1 1/4	2 5/8	1 3/8	2 7/8	1 1/2	3 1/8	1 11/16	3 1/2	1 13/16	3 3/4	2 1/8	4 3/8	2 7/16	5	2 3/4	5 5/8	3 1/8	6 3/8
3/4"	1 3/8	2 7/8	1 1/2	3 1/8	1 5/8	3 3/8	1 13/16	3 3/4	1 15/16	4	2 1/4	4 5/8	2 9/16	5 1/4	3	6 1/8	3 1/4	6 5/8
1"	1 1/2	3 1/8	1 5/8	3 3/8	1 3/4	3 5/8	1 15/16	4	2 1/16	4 3/8	2 3/8	4 7/8	2 11/16	5 1/2	3	6 1/8	3 3/8	6 7/8
1 1/4"	1 11/16	3 1/2	1 13/16	3 3/4	1 15/16	4	2 1/8	4 3/8	2 1/4	4 5/8	2 9/16	5 1/4	2 7/8	5 7/8	3 1/4	6 5/8	3 9/16	7 1/4
1 1/2"	1 13/16	3 3/4	1 15/16	4	2 1/16	4 1/4	2 1/4	4 5/8	2 3/8	4 7/8	2 11/16	5 1/2	3	6 1/8	3 3/8	6 7/8	3 11/16	7 1/2
2"	2 1/8	4 3/8	2 1/4	4 5/8	2 3/8	4 7/8	2 3/8	4 7/8	2 11/16	5 1/2	3	6 1/8	3 5/16	6 3/4	3 5/8	7 3/8	4	8 1/8
2 1/2"	2 7/16	5	2 9/16	5 1/4	2 11/16	5 1/2	2 7/8	5 7/8	3	6 1/8	3 5/16	6 3/4	3 5/8	7 3/8	3 15/16	8	4 5/16	8 3/4
3"	2 3/4	5 5/8	3	6 1/8	3	6 1/8	3 1/4	6 5/8	3 3/8	6 7/8	3 5/8	7 3/8	3 15/16	8	4 7/16	9	4 3/4	9 5/8
3 1/2"	3 1/8	6 3/8	3 1/4	6 5/8	3 3/8	6 7/8	3 9/16	7 1/4	3 11/16	7 1/2	4	8 1/8	4 5/16	8 3/4	4 3/4	9 5/8	5	10 1/8

Write for More Detailed Information on Products of Particular Interest

ANACONDA WIRE & CABLE COMPANY

General Offices: 25 Broadway, New York *20 North Wacker Drive, Chicago*

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from mine to consumer
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WIRE & CABLE COMPANY

ENGINEERING SERVICES

At various district sales offices and at our engineering and research laboratories at Hastings-on-Hudson a staff of engineers is maintained who are qualified to give immediate assistance to specification writers having difficult or unusual problems in the design or application of wire and cable. The services of this engineering and research staff are available at all times for assistance in the solution of technical wire problems or for the development of special cables.

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Kansas City, Mo. . . 106 West 14th Street	Seattle, Wash. . 914-920 First Avenue, South
Los Angeles, Cal. . . . 430 Colyton Street	Washington, D. C. . . . Investment Building

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Kenosha, Wis. : Marion, Ind. : Muskegon, Mich. : Oakland, Cal. : Orange, Cal.
Pawtucket, R. I. : Sycamore, Ill.

HAZARD INSULATED WIRE WORKS

DIVISION OF THE OKONITE COMPANY

WORKS

WILKES-BARRE, PA.

SALES OFFICES

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SEATTLE, WASH.
WASHINGTON, D. C.

For many years there have been three grades of electrical building wire:

(1) "Code" Wire, the rubber insulating compound containing about 20% of rubber. "Code" is the minimum grade that may be used under the rulings of the National Board of Fire Underwriters.

(2) "Intermediate" Wire, with insulation compounded with about 25% of rubber. A little higher in quality than "Code" wire.

(3) "30%" or "Performance Grade" Wire—the insulation containing 30% of pure rubber—used extensively in large office buildings, high class residences and other structures where the best type of electrical wires and cables are desired.

PERFORMITE INSULATION

Now there is available a higher type of rubber insulation which affords longer life and greater safety. *Performite* rubber insulation is tougher and stronger than any in common use heretofore, and has greater life, making it preferable for monumental buildings, public institutions and high class residences.

It is generally accepted that oxidation is the principal cause of the deterioration of rubber compounds. *Performite* is made highly resistant to oxidation by limiting the sulphur content and by adding certain other ingredients. Working along the lines of the mechanical goods manufacturers and particularly automobile tires, new complex chemical ingredients are employed in *Performite* to prolong the life of the insulation with, of course, proper regard for maintaining the necessary electrical properties.

Performite Building Wires and Cables with braided coverings are always made with the well-known "Firekrome" weatherproof and flame-retarding finish.

Specification—To insure the use of this safer, better and more durable wire, it should be specified as follows:

All electrical conductors shall have standard Performite rubber insulation. Braided wires and cables shall have "Firekrome" weatherproof and flame-retarding finish.

Wires and cables shall also meet all requirements of the National Electrical Code.

HAZARD ARMORED CABLE, TYPE AC

Distinction for Hazard Armored Cable is gained by the use of flame-resisting moisture-proof paper sheath between the conductors and spiral interlocked steel armor; by the ripcord underneath the paper which facilitates installation, and by the double protection afforded by the insulating bushing which is inserted at the cut ends *over* the paper sheath instead of removing the paper as is ordinarily done.

These things make Hazard Armored Cable better and safer.

HAZARD SERVICE ENTRANCE CABLES, TYPE SE

Type SE with uninsulated neutral conductor makes possible low cost service entrances because the cable may be strapped to the house—no conduit required—a weathercap attached at top end where drop cable or wires are joined to it, and the lower end led directly through the foundation to the entrance switch,—or, if an outdoor meter is used, cable goes into the meter case through an approved watertight connector.

These modern cables with covered neutral conductor especially fit in with the new sequence arrangement of meter, switch and fuse. Their low cost, ease of installation, insurance against current diversion and practically zero maintenance cost, make them particularly attractive.

TRIAL INSTALLATION CABLE FOR INTERIOR WIRING SYSTEMS

CNX Covered Neutral Cable is designed for use in houses, buildings of frame construction, and all types of farm buildings, including barns, garages, stables, etc.

The rules which govern the installation of non-metallic sheathed cable also apply in a general way to the installation of CNX Covered Neutral Cable.

HAZARD PERMEX MULTI CONDUCTOR CABLES

Thin-wall rubber insulation provides a means of constructing cables containing a maximum number of separately insulated conductors with minimum diameter and weight. It finds wide use for multi-conductor telephone cables, for supervisory control, fire alarm, police signal or other low voltage circuits requiring many conductors in small compass because of limited duct space or other considerations.

TAPES

Okonite Rubber Tape and Manson Friction Tape are highest quality tapes. These tapes make the ideal materials when a perfect splice is desired that will last as long as the insulation itself.

MEMORANDA

DAHLSTROM METALLIC DOOR COMPANY

EXECUTIVE OFFICES AND FACTORIES

JAMESTOWN, N. Y.

REPRESENTATIVES IN PRINCIPAL CITIES

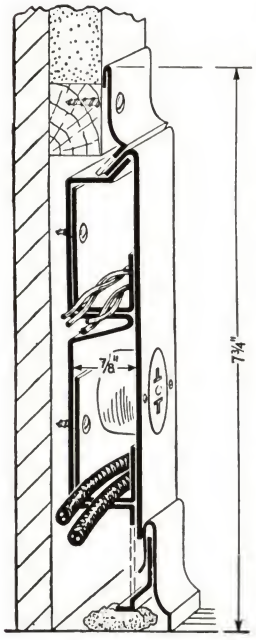
For Dahlstrom Elevator Entrances, Metal Doors, and Adjustable Steel Partitions, see File Index

DAHLSTROM CONDUO BASE

Dahlstrom Conduo Base is a combination base and wire raceway for the distribution of telephone, signal and light wires.

It is manufactured in three standard types: Junior, Senior and Bank Counter Top—each displacing the necessity of running exposed wires along walls at ceilings, etc.

Special types are designed to meet unusual conditions and requirements.



Junior Conduo Base

Plain baseboard members (minus wire raceways) of a profile to match the Conduo Base Designs are also available.

Every modern building should be equipped with Dahlstrom Conduo Base and plain base to match (where raceways are not required), not alone from a service standpoint and low initial costs, but also for permanency and pleasing appearance.

Features

(1) A Two-purpose Base—A combination base and wire raceway.

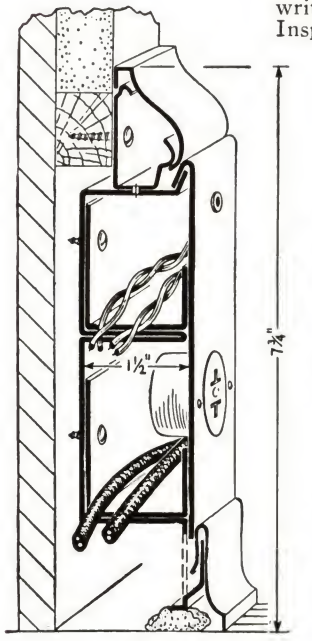
(2) A permanent wiring necessity—Meeting the variable demands for electrical service.

(3) Convenience—Ready access to all wires by removal of face plate only.

(4) Flexibility in Design — Three different designs to suit the needs for maximum as well as minimum service requirements.

(5) Economical — Eliminates cutting of floors and walls for wired conduits otherwise necessary when change-overs are made to meet the electric service demands.

(6) Underwriters' Label—Each respective base section bears the Underwriters' Laboratories, Inc. Label of Inspection.



Senior Conduo Base

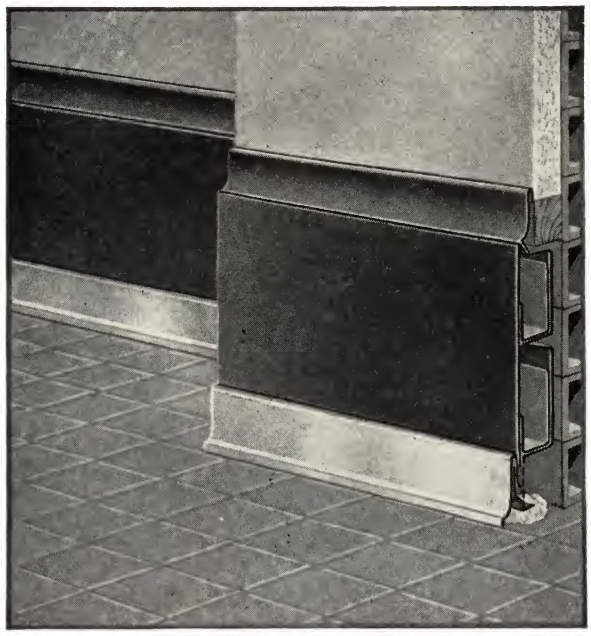
Specifications For Conduo Base

The following specification should be incorporated under the "Electric Wiring" section, inasmuch as Conduo Base is primarily an extension to the electrical distribution system.

This Contractor shall furnish and install all (either Junior or Senior) Conduo Base complete with all necessary appurtenances, such as junction boxes, inside and outside raceway corners bonding clips, alignment plates, receptacle sections, bushed telephone sections, etc., in all rooms throughout the building where designated on Architect's plans. Base shall be DAHLSTROM METALLIC DOOR COMPANY's standard "Conduo Base", each section bearing Underwriters' Label.

Conduit Connections—Furnish and install and connect all conduits of proper size as indicated on electrical plans. These cover requirements of home-run feeder conduits for light or signal, and door jumper or floor outlet conduits as indicated. All such conduits shall terminate in junction boxes.

The Conduo Base junction boxes, floor type, shall have knockouts provided for both ¾ and 1-in. conduits into each respective compartment from front, rear, or ends, enabling ready access for conduit connections.



Conduo Base

(*Note*: It is recommended that the above junction boxes and conduits be located at columns, outside walls, or permanent partitions, where they are not likely to be removed by changes or re-arrangements of office areas.)

At each door opening or low set radiator and all other points where a continuous run of Conduo Base is intercepted, connect both raceways of Conduo Base with ¾-in. conduits across the opening or obstruction terminating each end of conduit in a standard Conduo Base junction box, so isolated runs of Conduo Base in all rooms are properly connected with the section of Conduo Base equipped with the feeder conduits.

Wiring—All sub-feeds shall be of size stipulated on plans terminating in Conduo Base junction boxes and subsequently connected to circuits feeding receptacles, ceiling and wall outlets as indicated.

Finish—All concealed raceway members shall be finished with rust-inhibiting pigment and painted a second coat of solid color, oven baked. All exposed members, i.e., the face plate and plaster moulding shall be finished to Dahlstrom Standards of (solid or grained colors) to match the trim as specified elsewhere. The bronze mop mould shall be pumice-cleaned.

(*Note*: Shallow receptacles must be used with Junior Conduo Base. These can be Bryant Electric Co. receptacles No. 790 and No. 792 or No. 4831 and 4832 or any make of receptacle that is less than ⅞ in. in depth.)

Dahlstrom Conduo Base Catalog has complete construction and wiring data. It's yours on request.

H. H. ROBERTSON COMPANY

Robertson World-Wide Building System

PITTSBURGH, PA.

FACTORIES: AMBRIDGE, PA.; SARNIA, ONT., CANADA; ELLESMERE PORT, CHESHIRE, ENG.

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ST. LOUIS, MO., H. H. Robertson Company, 1218 Olive St.
SALT LAKE CITY, UTAH, L. Brandenburger Co., 153 W. Second South St.
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FOR CANADA: H. H. ROBERTSON CO., LTD.

TORONTO (MAIN OFFICE), 611 Metropolitan Building — MONTREAL OFFICE, 526 Confederation Building

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Products

ROBERTSON CELLULAR STEEL FLOOR WIRING METHOD.

For Robertson Protected Metal (RPM), corrugated roofing, siding, building trim and steel decks; Robertson Steel Floor; Robertson Ventilators, gravity and fan types; Robertson Louvers, Hoods and Ducts, and Robertson Weatherproof Skylights and Sash (puttyless type), see File Index.

TRADE-MARK

Patents: Robertson Steel Floor is protected by United States Patents Nos. 1,855,082; 1,867,433; 1,986,121; 1,986,122; 1,994,113; 2,029,393; 2,041,965; 2,065,511; 2,065,546; and 100,082. Other United States and foreign patents pending.

ROBERTSON CELLULAR STEEL FLOOR WIRING METHOD

The basic element of these systems is Robertson Steel Floor, which acts as the load-carrying member of the building in which it is installed. For structural details, see File Index for pages on Robertson Cellular Steel for Floors, Walls and Roofs. When installed, this floor provides a steel enclosed raceway or wiring channel every 6 in. across its entire area. To gather up wiring installed in the cells and terminating at various outlets, a member (header) is installed at right angles to the run of the cells. Provision is made for connections to panel, cabinet or other wire center, as conditions require.

Robertson Cellular Steel Floor Wiring Method can be laid out by the electrical engineer to fit individual requirements as to density, load, number of distribution systems, etc., in an economical manner. System is installed as a whole and wire is pulled in after mechanical work is completed. In use, outlets are cut in at desired locations and the necessary wire installed. Only needed outlets are placed in the original installation. Thus, in contrast to conventional fixed outlet systems, a small proportion of possibly unused wiring is installed originally.

The two available headers are known as "Topside Header" and "Underside Header." The former is used on top of units RK and K (see pages on Robertson Steel Floor) and the latter is used on the flat underside of the inverted FK unit, where a flat steel ceiling is desired. Both systems have the same ultimate end, the provision of complete electrical availability. Typical installations are shown on the following page.



A Desk Installation

With the Robertson System of distribution, outlets may be under the drawer portion of the desk and out of the way. These outlets are rugged, neat and inexpensive

Advantages of the Robertson Cellular Steel Floor Wiring System

Safety—It is, first of all, a form of steel construction and possesses all the advantages inherent in the steel.

When installed on the structural steel frame, an integrated steel mass results that provides adequate grounding. The ample internal area of the cells discourages the use of lubricants that are often harmful to wire insulation and provides for the use of relatively large size cables. The large surface area of the floor units in place dissipates heat.

Economy—There is available a steel enclosed wiring member every 6 in. across the entire floor area. These members can be segregated for different systems and any or all made available for wiring. These steel enclosed wiring members also constitute a load-bearing floor, and as such add no cost to the building wiring system.

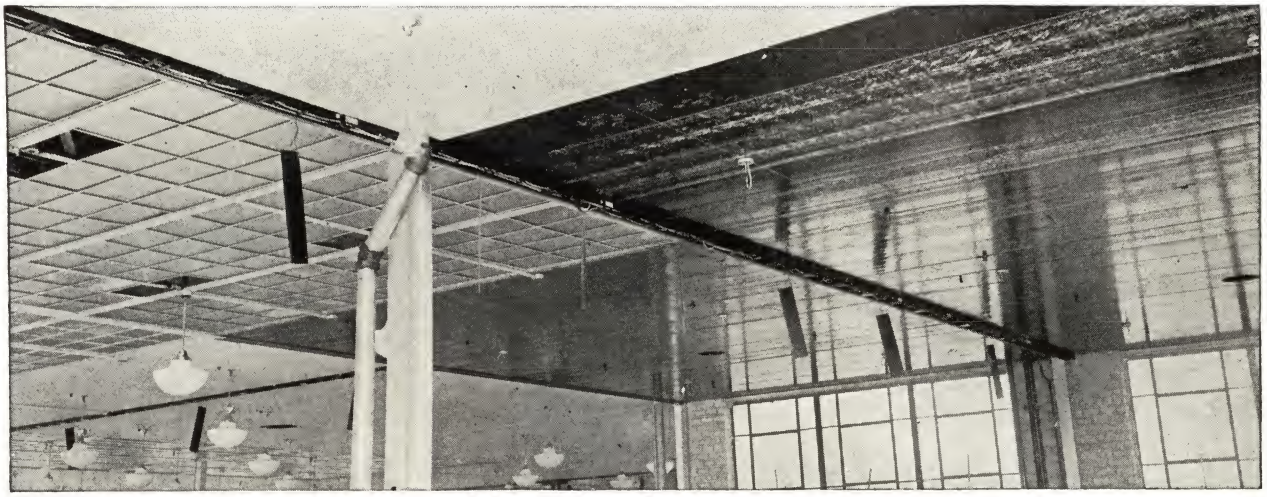
Availability for Future Changes—Modern occupancy practice shows need for being able to obtain electrical outlets practically anywhere in floor area. Robertson Steel Floor Wiring System fully meets these requirements.

Neatness and Appearance—Wiring is installed easily in the protecting floor members, eliminating long exposed runs of wiring now common. This feature makes for permanence, safety, neatness and less maintenance cost.

Typical Examples of Robertson Cellular Steel Floor Wiring Method



This view of part of the office area of a large office and service building erected for the Scranton Electric Co. (American Gas & Electric Co.), Scranton, Pa., shows floor outlets installed under the drawer portion of desks, to give telephone service. Outlets for 110-v. service may be installed when required. The "Topside Header" method is used in this installation.



Part of ceiling of third floor of large office building of a prominent automobile manufacturer, in which Robertson Steel Floor (FKX with flat underside) was used throughout. Note the "Underside Header" which feeds cells. It was painted later to match acoustical tile applied directly to the underside of the Robertson Floor.



View of second floor of B. & O. R.R., Keeshin Motor Lines Terminal, Chicago, Ill. Robertson Steel Floor was used for first, second, third floors and roof, made electrically available with the Robertson Underside Header System. Wiring for floor outlets and ceiling lighting fixtures is carried in the cells of the floor units.

Write for free booklet "Wiring Robertson Cellular Steel Floor"

STEEL AND TUBES, INC.

SUBSIDIARY OF REPUBLIC STEEL CORPORATION

224 East 131st Street, CLEVELAND, OHIO

SALES OFFICES

ATLANTA, GA., 210 Haas-Howell Bldg.—Walnut 9300
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CINCINNATI, OHIO, 2701 Carew Tower—Main 3965
DENVER, COLO., Continental Oil Bldg.
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ELECTRUNITE STEELTUBES

Reg. U. S. Patent Office

ELECTRUNITE Steeltubes is the original and pioneer low cost threadless steel raceway for electrical wiring. It was designed to provide sound, lasting protection for wiring systems—to afford all of the advantages of a "pull-in—pull-out" system at a cost within reach of every builder.

ELECTRUNITE Steeltubes is fully approved for open and concealed wiring—by the National Electrical Code (Article 348, 1937 issue)—and by the Underwriters' Laboratories, Inc. It is fireproof, waterproof, rodentproof and tamperproof.

With all necessary fittings, ELECTRUNITE Steeltubes costs less to buy than ordinary threaded conduit—and, because of its simplicity and ease of working, it costs less to install. It is resistant to corrosion—and lasts for the life of the building structure.

To obtain all of the advantages available today in electrical metallic tubing, be sure to specify "Genuine" ELECTRUNITE Steeltubes for industrial plant, commercial building and house wiring installations. Stocks are carried by leading electrical wholesalers. Contractors prefer to use this modern conduit.

Recommended Architects' Specifications

Electrical conductors shall be enclosed in ELECTRUNITE Steeltubes conduit, as manufactured by STEEL AND TUBES, INC., Cleveland, Ohio, sizes ½ to 2 in., inclusive. Tubing shall be made from S.A.E. 10-10 specification cold rolled open hearth strip steel, galvanized, and manufactured in accordance with Underwriters' Laboratories Standards, and so labeled.

ELECTRUNITE Steeltubes shall have electrically welded seams and shall be installed in accordance with the regulations of the National Electrical Code.

Compression couplings and box connectors shall be Underwriters approved type and so listed.

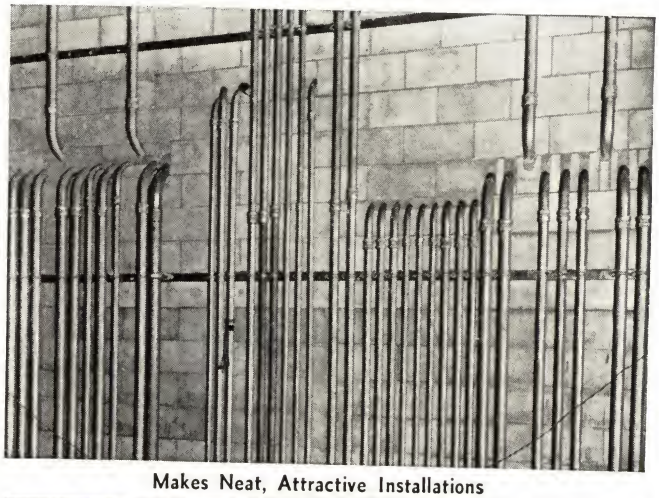
TABLE OF SIZES

Size, in.	Approx. wt. per 1000 ft. without couplings	B.W. gauge	Diameter, in.	
			Internal	External
⅜	250 lbs.	19	.493	.577
* ½	320 lbs.	19	.622	.706
* ¾	480 lbs.	18	.824	.922
*1	688 lbs.	17	1.049	1.163
1¼	1000 lbs.	16	1.380	1.508
1½	1180 lbs.	16	1.610	1.738
2	1500 lbs.	16	2.067	2.195

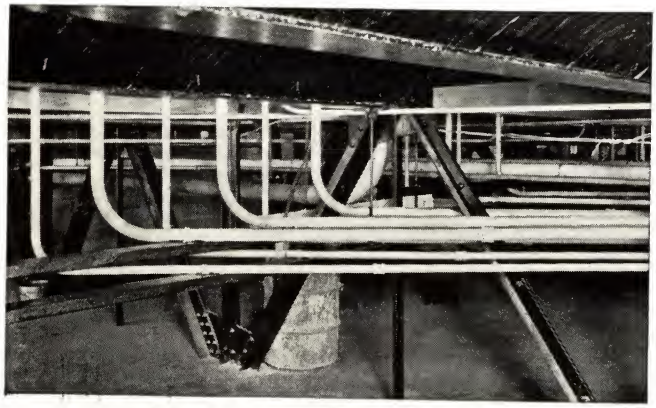
Elbows made in sizes 1, 1¼, 1½ and 2 in.
*Available with knurled inside finish.



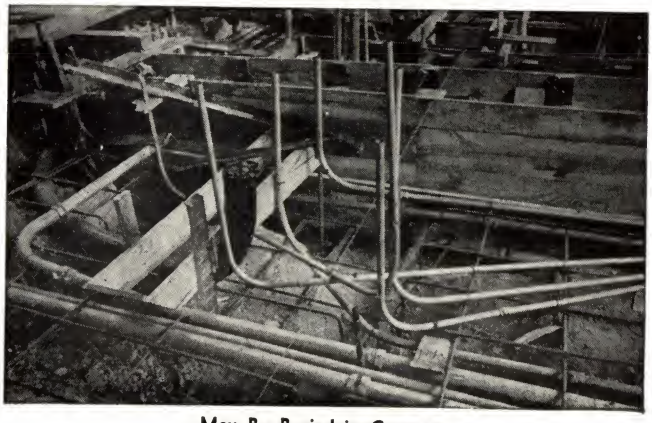
Takes Up Less Space in Partitions



Makes Neat, Attractive Installations



Ideal for All Types of Industrial Installations



May Be Buried in Concrete

STEEL AND TUBES, INC., ARE SOLE SALES AGENTS FOR FRETZ-MOON RIGID STEEL CONDUIT, COUPLINGS AND ELBOWS

Fretz-Moon Rigid Steel Conduit

Because it is made of soft, ductile steel by the exclusive, scientifically-controlled "continuous" process, Fretz-Moon Conduit offers a number of outstanding features to the architect or engineer who wishes to specify a high quality rigid steel raceway for the protection of electrical systems.

1. A high degree of uniformity not found in ordinary rigid steel conduit.
2. Extraordinarily high ductility. Laboratory tests prove that Fretz-Moon Conduit bends and threads approximately 25% easier than the average rigid steel conduit. Tests also prove that there is no distortion or flattening at bends.
3. Absolute freedom from "burnt" or hard spots in the metal that might cause cutting, threading or bending troubles.
4. Threads are unusually clean, sharp and free-running.
5. Fretz-Moon Conduit cuts and threads easily and cleanly.
6. Welds are smooth and strong, and will not open even under severe abuse.
7. The inside surface is smooth, clean and free from burrs and rough spots.
8. Hot-dipped galvanized brand is heavily galvanized inside and out. The galvanizing will not peel or flake off under severe bending, and will last for the entire life of the installation.
9. Fretz-Moon Conduit, with all these advantages costs no more than ordinary rigid steel conduit.

Finishes—Fretz-Moon Rigid Steel Conduit is available in two finishes, as follows:

"Enamelite" (orange label) is protected both inside and out by a tough coating of special baked-on black enamel.

"Galvite" (blue label) is hot-dipped galvanized both inside and out and has galvanized threads. In addition a special coating of baked-on lacquer is applied both inside and out to further insure the corrosion-resisting properties of this high quality product.

Inspection—Fretz-Moon Conduit is made under rigid control and strict supervision. Every length must not only pass close inspection and many tests (including hydrostatic test to insure perfect weld) but also inspection of Underwriters' Laboratories, Inc., before it can receive the seal of Underwriters' standard. Fretz-Moon Conduit is guaranteed to give positive satisfaction.

Couplings

Finished outside to correspond with conduit. So cleanly threaded inside that they can be spun up on the conduit with the fingers. Fretz-Moon Conduit and Couplings are noted for ease and speed in fitting.

Shipments

Fretz-Moon Conduit ¼ to 1½ in. is supplied in bundles, each piece 10 ft. long; other sizes up to 6 in. shipped loose. One end of each length is fitted with a coupling, the other end with a thread protector.

Prompt Delivery

Complete stocks of conduit, elbows and couplings are carried in all large jobbing centers making for prompt delivery.



Coil of Stock Length—Shows Easy Bending Properties



Hot Galvanized



Black Enamel



Look for the Fretz-Moon Label It Means Quality

SIZES AND DIMENSIONS OF FRETZ-MOON RIGID STEEL CONDUIT

Conduit						Couplings	Elbows		
Size, in.	Weight per foot, lb.	Diameters, in. External	Diameters, in. Internal	Thickness, in.	Threads per inch	Weight lbs. per 100	Weight lbs. per 100	Radius, in.	Offset, in.
¼	.425	.540	.364	.088	18	6.0	41	3.000	5.625
⅜	.568	.675	.493	.091	18	9.5	55	3.000	5.625
½	.852	.840	.622	.109	14	11.6	82	4.000	7.000
¾	1.134	1.050	.824	.113	14	20.9	109	4.500	7.500
1	1.684	1.315	1.049	.133	11½	34.3	201	5.750	9.500
1¼	2.281	1.660	1.380	.140	11½	53.5	313	7.250	10.875
1½	2.731	1.900	1.610	.145	11½	74.3	441	8.250	12.625
2	3.678	2.375	2.067	.154	11½	120.8	707	9.500	15.250
2½	5.819	2.875	2.469	.203	8	172.0	1411	10.500	17.375
3	7.616	3.500	3.068	.216	8	249.8	1850	13.000	19.500
3½	9.202	4.000	3.548	.226	8	424.1	2979	15.000	21.250
4	10.889	4.500	4.026	.237	8	474.1	3528	16.000	22.500
4½	12.642	5.000	4.506	.247	8	550.0	4310	18.000	24.375
5	14.810	5.563	5.047	.258	8	700.0	6575	24.000	32.000
6	19.185	6.625	6.065	.280	8	750.0	9645	30.000	39.750

Conduit is furnished in 10-ft. lengths, threaded both ends, with coupling screwed on one end.
Conduit is always designated by its nominal inside diameter. All weights and dimensions shown above are nominal.

MEMORANDA



WIREMOLD

SURFACE WIRING SYSTEM

THE WIREMOLD COMPANY
HARTFORD, • CONNECTICUT

THE WIREMOLD COMPANY

A National Organization

The Wiremold Company and its predecessors have been active in the electrical industry since 1900.

Wiremold is the trade name of a distinctive method of Surface Wiring consisting of metal raceways and fittings. The raceways with their fittings have been designed according to sound engineering principles with the view of promoting **Safe and Adequate Wiring.**

Essentially this system consists of eight sizes of raceways and fittings, designed so that each may be used independently of the others or all sizes may be interconnected to form a complete system from "Panel Box to Outlet."

Other products manufactured are:

"WIREDUCT" • NON-METALLIC FLEXIBLE CONDUIT
"WIREFLEX" • NON-METALLIC SHEATHED CABLE
"WIRE NUTS" • SOLDERLESS CONNECTORS
"WIREMOLD ARMORED BUSHED CABLE"

The company has established national distribution with Electrical Wholesalers and Electrical Dealers throughout the United States and Canada. In addition, adequate Warehouse Stocks are carried at strategic points to insure prompt delivery. The Engineering Staff at the home office in Hartford and Sales Representatives in various cities (as listed on back cover of this catalog) are at your service.

D. HAYES MURPHY
PRESIDENT-TREASURER

THE WIREMOLD COMPANY

GENERAL OFFICE AND FACTORY
HARTFORD, CONN.
U. S. A.

CABLE ADDRESS
WIREMOLD

TO USERS OF OUR PRODUCTS

EVERYWHERE

Dear Sirs:

Since we started making electrical conduits and fittings in 1900, every foot and every piece produced has been backed by

OUR GUARANTEE

and as long as we are in business we agree to continue this protection to users of our products,

Accordingly, we have authorized all Distributors of Wiremold products to replace any material of our manufacture which does not give the user complete satisfaction.

Yours very truly,

THE WIREMOLD COMPANY

President

USES OF WIREMOLD

The uses to which Wiremold Surface Wiring System can be applied are unlimited. Wiremold really satisfies the modern demand for Safe and Adequate Wiring. Some of the more common uses are:

COMMERCIAL LIGHTING

(1) Stores, Show Windows, Counter and Wall Cases
(2) Offices, Drafting Rooms and Schools
(3) Hotels, Clubs, Restaurants and Apartment Buildings
(4) Churches
(5) Theatres, Stages and Auditoriums

GENERAL INTERIOR INDUSTRIAL LIGHTING

DECORATIVE LIGHTING

OVERFLOOR OUTLET SYSTEM

(1) Telephones
(2) Power and Light

MULTI-OUTLET ASSEMBLY

(1) Homes
(2) Commercial Buildings
(3) Industrial Buildings

ADVANTAGES OF WIREMOLD

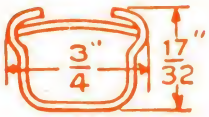
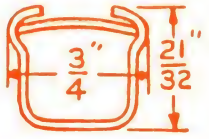
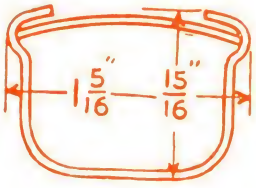
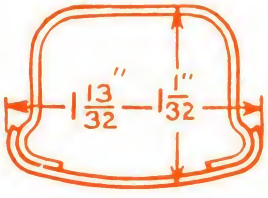
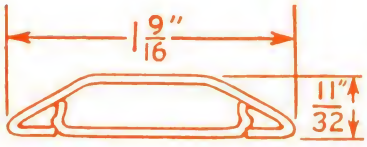
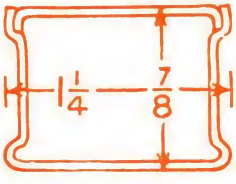
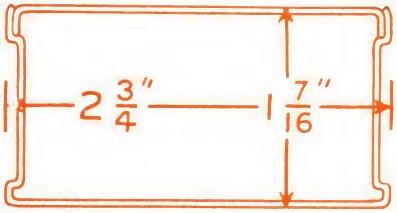
WIDE ADAPTABILITY—The Wiremold Surface Wiring System can be adapted to practically every field of wiring practice, whether in the home, store, office, institution or industrial building.

GREAT FLEXIBILITY—The Wiremold System located on the surface readily and economically lends itself to changes necessitated by the various requirements of the users of electric power. With Wiremold, surface wiring systems possess all the advantages of accessibility.

NO REDECORATING NECESSARY—Wiremold is designed specifically for the surface. When properly installed, it harmonizes with the interior trim and becomes part of it. The standard finish of Wiremold raceways and fittings is a light buff baked-on enamel which blends with practically any decorative treatment. Being neutral in tone, Wiremold is easily painted after installation—to match any particular scheme.

CODE ACCEPTANCE—Wiremold Raceways and Fittings are listed by Underwriters' Laboratories, Inc., Factory Mutual Laboratories and Hydro - Electric Power Commission of Ontario, Canada.

A COMPLETELY INTER-CONNECTED SYSTEM OF RACEWAYS

	Single Conductor (R. C.) Capacity		Twisted Pair Capacity	
No. 200	Two—14 Four—16 Four—18		Two—16 Two—18 Two—19	
See pages 4 and 5				
No. 500	Two—10 Two—12 Three—14		Two—16 Two—18 Three—19	
See pages 4 and 5				
No. 700	Two—10 Four—12 Four—14		Four—16 Four—18 Four—19	
See pages 4 and 5				
No. 1000	Five—8 Six—10 Ten—12 Ten—14		Ten—16 Ten—18 Eleven—19	
See pages 4 and 5				
No. 1100	Five—8 Eight—10 Ten—12 Ten—14		Ten—16 Ten—18 Eleven—19	
See pages 6 and 7				
No. 1500	Four—12 Four—14		Three—16 Four—18 Five—22	
See pages 8 and 9				
No. 2100	Six—12 Six—14		Eight—16 Eight—18 Twelve—22	
See pages 10 to 13				
No. 3000	Ten—12 . . . with Thermal Type Auxiliary Coil located in Raceway.			
See pages 14 and 15				

A COMPLETE SYSTEM FOR ALL TYPES OF BUILDINGS

THE Wiremold Method of wiring consists essentially of the following systems:

(1) A Surface Raceway System
(2) A Lighting Strip System
(3) An Overfloor System
(4) A Multi-Outlet System
(5) A Fluorescent Strip System

THE SURFACE RACEWAY SYSTEM — This system consists of four sizes of raceways and their related fittings. It has been adopted throughout the electrical industry as the practical method for modernizing existing inadequate wiring. For new construction, this wiring system is making great strides—because it provides a safe, economical means for the flexible application of electrical power. From the main panel board Wiremold No. 1000 Raceway carries the feeders to the floor above and terminates in the branch circuit panel. Branch circuits extend from the panel in Wiremold No. 700 Raceway to the respective offices which are wired in either Wiremold No. 500 or No. 200 Raceway.

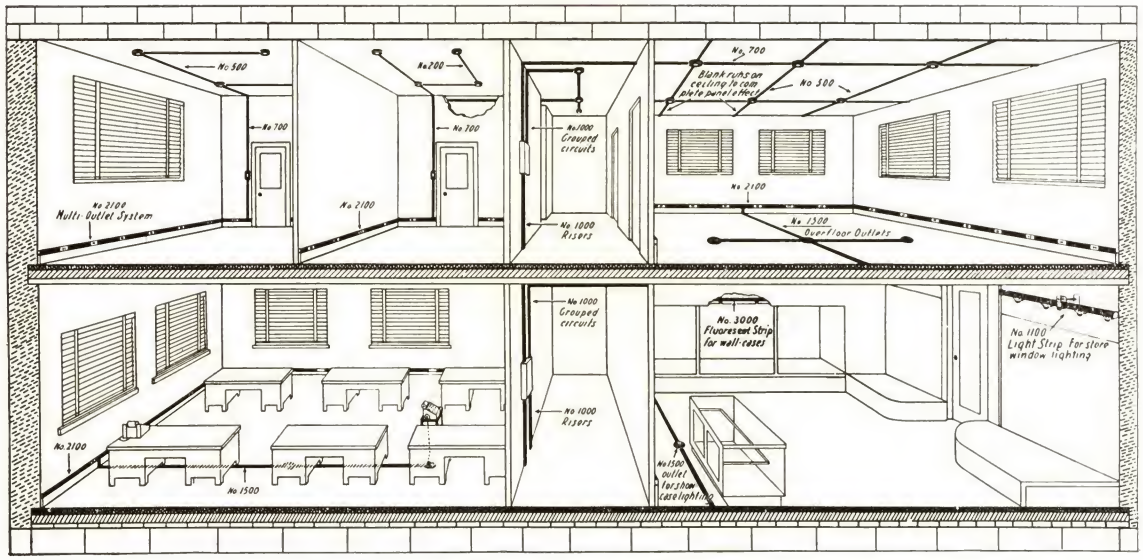
THE WIREMOLD LIGHTING STRIP SYSTEM — This system, due to its unusual advantages, has won wide recognition throughout the trade. It consists of a single raceway and related fittings and is designed especially for the following purposes:

(1) Lumiline Lighting
(2) Window Lighting
(3) Cove and Valance Lighting

OVERFLOOR SYSTEM— High cost of office space requires that office arrangements be made on the basis of efficient operation. Formerly the positions of desks, telephones and business machines were determined by their nearness to wall outlets. Today "Pancake" Wiremold permits desks and machines to be located in the positions most advantageous to efficient operation and office planning. This modern wiring system conveys electric and telephone wires on the floor surface — safely, inconspicuously, but without the nuisance and hazard of loose wires.

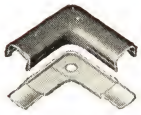
"PLUGMOLD" MULTI-OUTLET ASSEMBLY— Like all other Wiremold products, "Plugmold" is designed in accordance with sound engineering principles. This multi-outlet assembly, safe and adequate, permits outlets to be installed wherever desired, at any time—and with little effort. This raceway system consists essentially of a channel, snap-in cover and receptacle.

THE WIREMOLD FLUORESCENT STRIP—Recently introduced, this strip readily lends itself to numerous adaptations of fluorescent lamp installations. It presents an economical, flexible and thoroughly practical means of installing this new, revolutionary type of lighting. It is adaptable to commercial, industrial and residential applications.

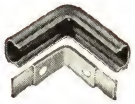


APPLICATION TO OFFICE, COMMERCIAL AND INDUSTRIAL WIRING

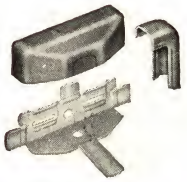
TYPICAL WIREMOLD FITTINGS



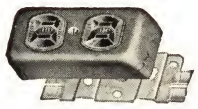
211 • 90° Flat Elbow



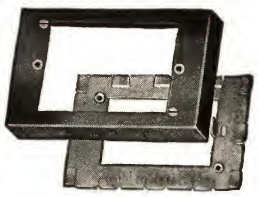
218 • External Elbow



228 • Adjustable Junction Box



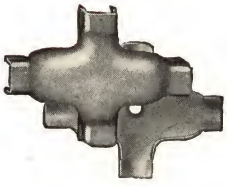
243 • Duplex Receptacle
15a, 125v; 10a, 250v



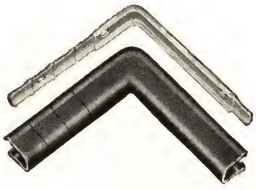
251 • Extension Adapter



515 • Tee



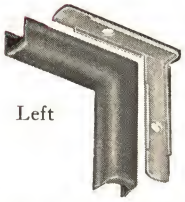
516 • Cross



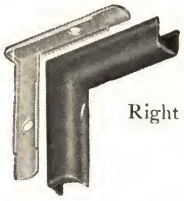
517 • Adjustable Internal Elbow



526 • Keyless Receptacle
660w, 250v



5711LH • Internal Twisted Elbow
(For 90° Twist with 90° Turn)



5711RH • Internal Twisted Elbow
(For 90° Twist with 90° Turn)



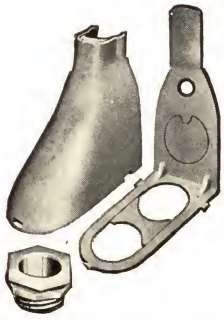
5719A • Stream Lined Corner Box



5734A • Blank Extension Box



5738A • Fixture Box



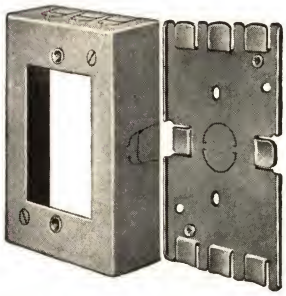
5786 • Adjustable Offset Connector



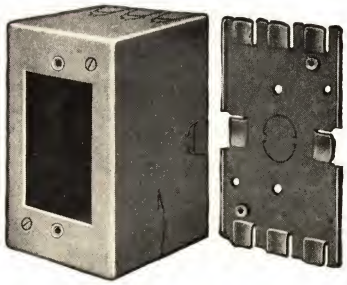
1086 • Adjustable Offset Connector



5748S • Shallow Receptacle Box

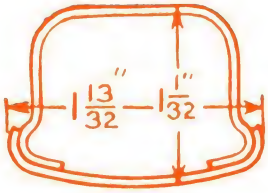


5747 • Shallow Switch and Receptacle Box

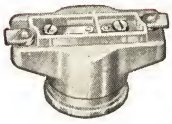


5744 • Extra Deep Switch and Receptacle Box

RACEWAY, TYPICAL FITTINGS AND REFLECTORS



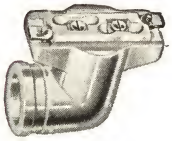




1126 • Keyless Socket, 660w, 250v



1126A • Bayonet Reflector Socket, 660w, 250v



1126B • Angle Socket, 660w, 250v



1127 • Plug Receptacle, 15a, 125v; 10a, 250v



1127A • Lumiline Duplex Receptacle, 660w, 250v



1127D • Lumiline Single Receptacle 660w, 250v

How To Install Receptacles and Sockets

1st. Wire fittings at desired distances.

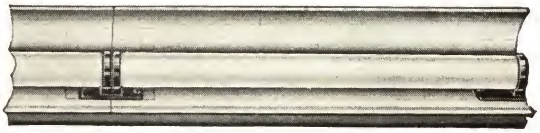


2nd. Mount fittings on 1100B Channel and fasten securely to Channel by means of the locking lugs on fittings.

3rd. Cut 1100C Cover to fit spaces between fittings and snap cover over Channel into position.



How To Install Aluminum Diffuse Reflectors Nos. 1193A and 1194A



1127A or 1127B Duplex — 1127C or 1127D Single

1st. Wire receptacles at desired distances and mount on No. 1100B Channel.

2nd. Determine direction for setting reflector. Then prepare the Reflector for mounting by breaking out three (3) adjoining twistouts in each end (see illustration below). Punch out corresponding screw knockout in center of reflector. Using reflector as a gauge, adjust receptacles to fit snugly into opening (made by removal of twistouts) in each end of reflector.

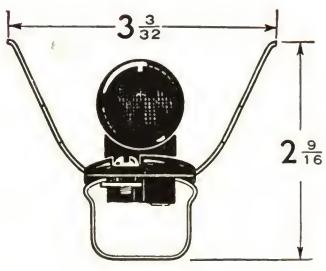


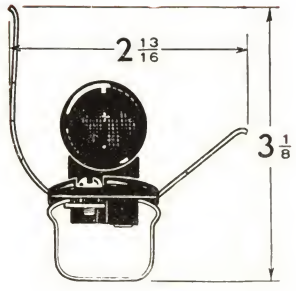
When using No. 1127C receptacle, break off three (3) inner and three (3) outer twistouts on each end of reflector.

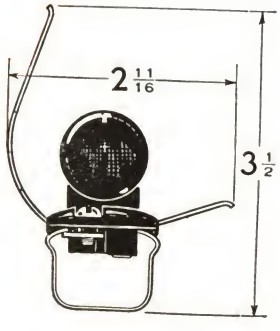
When using Nos. 1127A, 1127B or 1127D receptacles, break off three (3) outer twistouts only on each end of reflector.

3rd. Each reflector (1193A and 1194A) is furnished with a screw and lug for mounting on No. 1100B Channel. Insert screw through knockout in reflector and fasten to lug—making sure that the side of lug without letters is next to the reflector. Upset threads at end of screw by squeezing with pliers. Then lay reflector on 1100B Channel and fasten securely by turning screw.

Wiremold Reflectors may be set in any one of three positions.





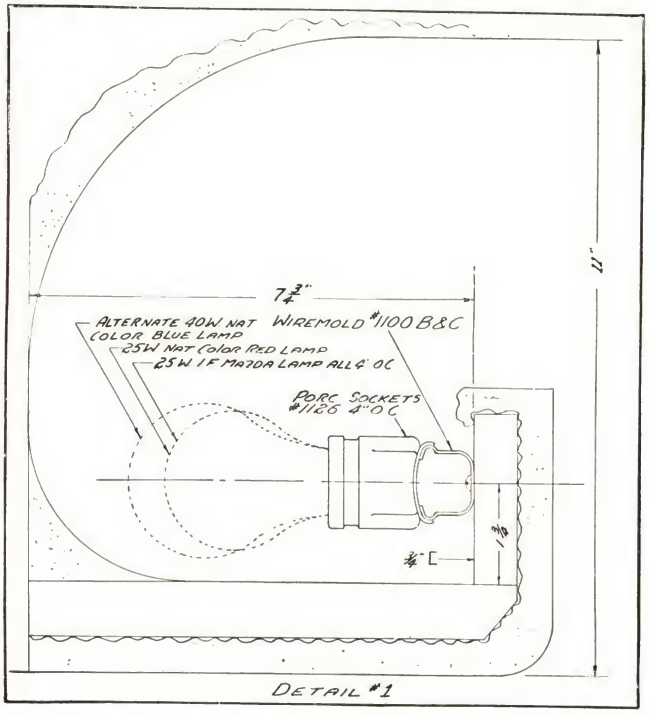


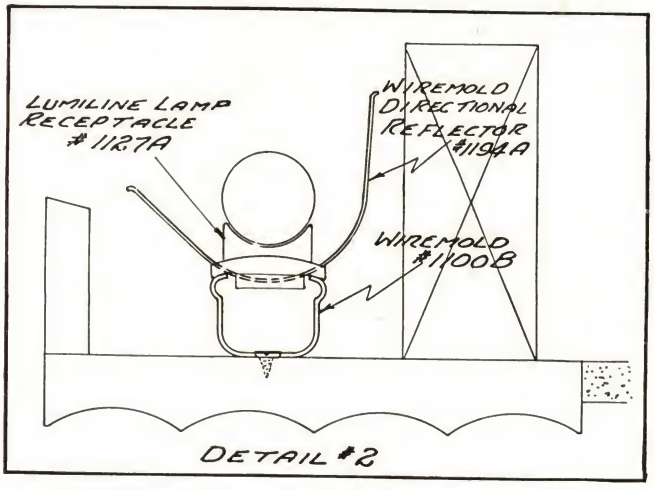
TYPICAL INSTALLATION OF No. 1100 WIREMOLD

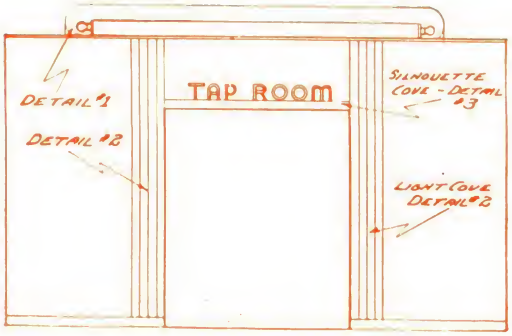


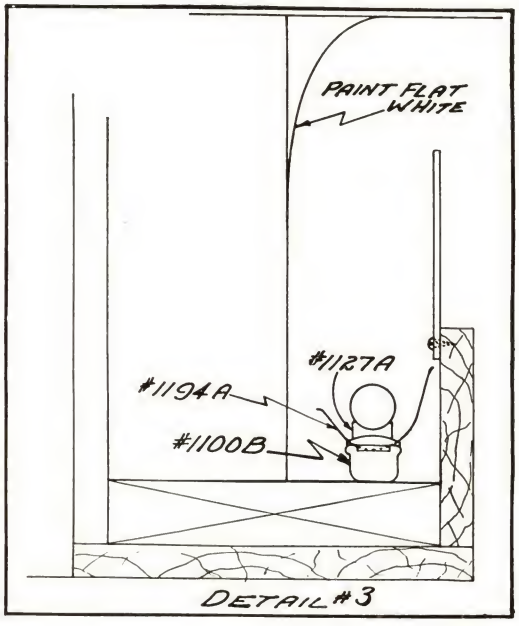
The central cove of the installation pictured is built of Wiremold No. 1100 with No. 1126 porcelain keyless sockets mounted on 4-in. centers. Every third outlet is wired on a circuit for colored lamps which are 40-watt natural colored blue, 25-watt natural colored red and 25-watt inside frosted Mazda. These are operated by banks of dimmers which allow any intensity, and blending of colors is made easily.

The vertical coves at each end are also built of Wiremold No. 1100 and with lumiline lamps as the light source. Duplex lumiline receptacles No. 1127A and single lumiline receptacles No. 1127D and Wiremold directional reflectors No. 1194A were used with 18 in. 60-watt straw colored lamps. The silhouetted cove was also designed with the same materials as the vertical coves.









WIREMOLD "Pancake" TRIP-PROOF RACEWAYS

No. 1500 "PANCAKE" WIREMOLD

The Wiremold Overfloor Raceway System is known as "Pancake" Wiremold because it "lies flat as a pancake with thin sloping edges." It consists of a rugged raceway with fittings which adapt it for two distinct purposes:

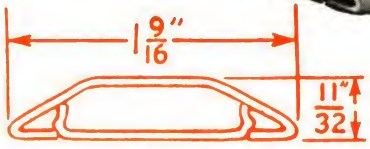
(1) For Overfloor Power and Light Circuits
(2) For Overfloor Telephone and Signal Circuits

The system is so designed that it may be installed independently of other wiring systems or may be economically connected to existing floor systems. "Pancake" Wiremold permits telephone and power outlets to be located anywhere on the floor—without the hazardous nuisance of loose wires. It provides a safe, adequate method of connecting telephones and electrically operated equipment placed at a distance from wall outlets.



For EITHER Telephone & Buzzer Wires – OR POWER and LIGHT Wires!





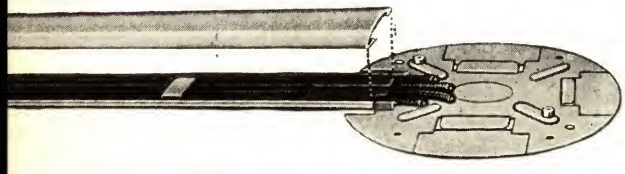
METHOD OF INSTALLING

Each length of No. 1500 "Pancake" Wiremold base is provided with screw knock-outs located approximately on 8-inch centers. To install No. 1500 "Pancake" Wiremold the following method is recommended:

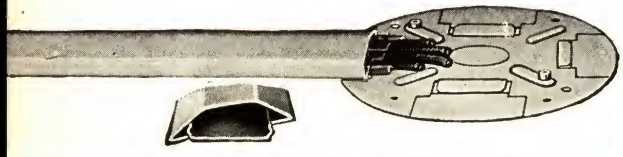
1st. Punch out sufficient knock-outs. Fasten base securely to the surface, using either No. 8 flat-head wood screws, expansion shields, toggle bolts, etc.

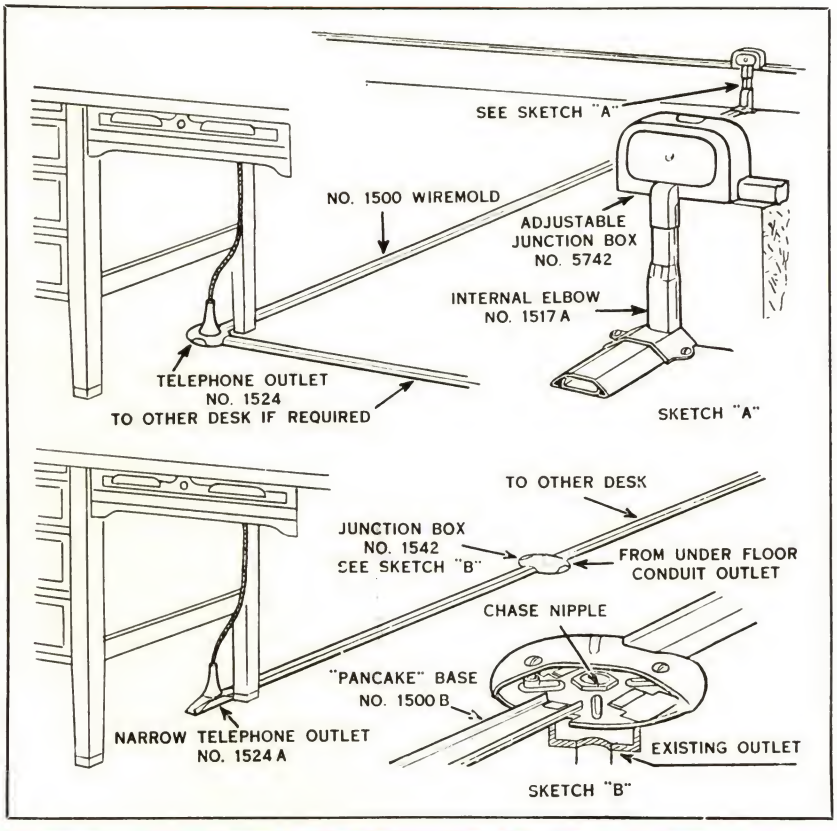
2nd. Lay conductors flat in base of raceway. When run exceeds 5 ft., use wire clips to hold conductors in place. To protect wires from abrasion when entering fitting, use No. 1502 bushing.

3rd. When entering fitting, cut cover 3/8 in. shorter than raceway base.



4th. Snap cover over base of raceway.



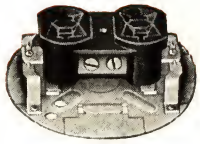




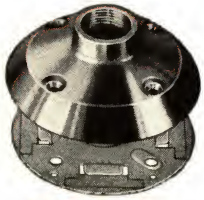
1518 • External Elbow



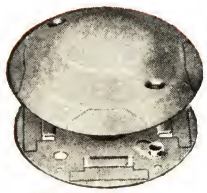
1517A • Internal Elbow



1543 • Duplex Receptacle
15a, 125v; 10a, 250v



1542B • Utility Box



1542D • Deep Junction Box

SALIENT FEATURES OF No. 1500 WIREMOLD OVERFLOOR SYSTEM

(1) The cover of "Pancake" Wiremold Raceway is held securely to the base by snapping over the bead on both sides of the base.

(2) A minimum ramp angle on the cover of the raceway provides capacity for four No. 12 rubber covered conductors.

(3) "Pancake" Wiremold fittings are durable—the twistouts are held securely in three places: at the top of twistout, and at the two points on the periphery of the fitting.

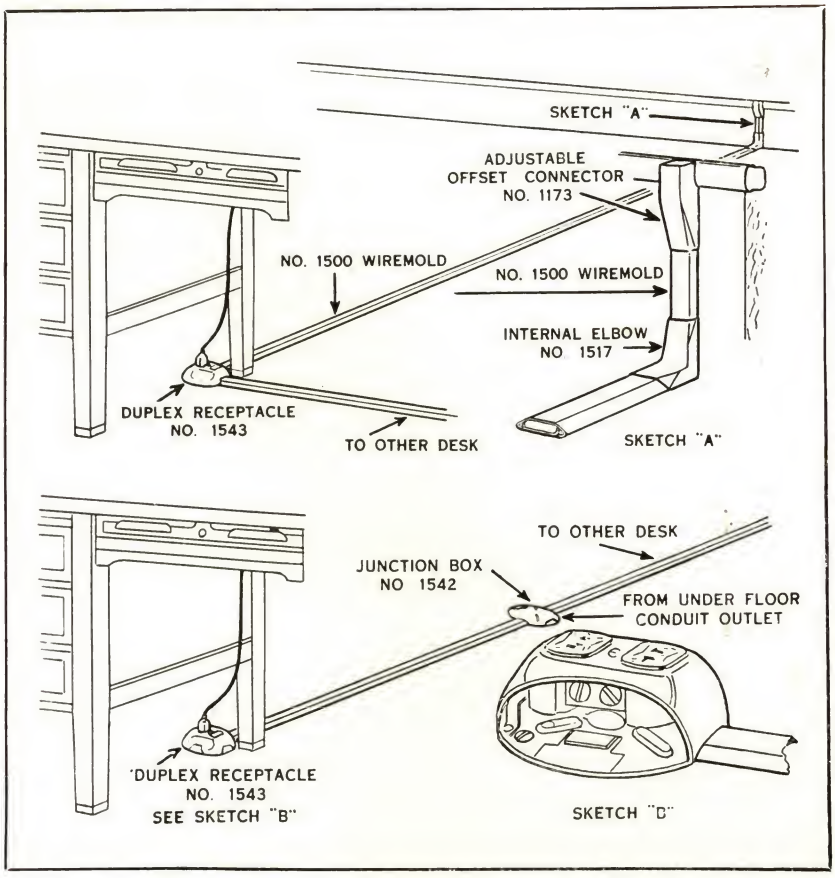
(4) "Pancake" Wiremold is manufactured in convenient ten foot lengths.

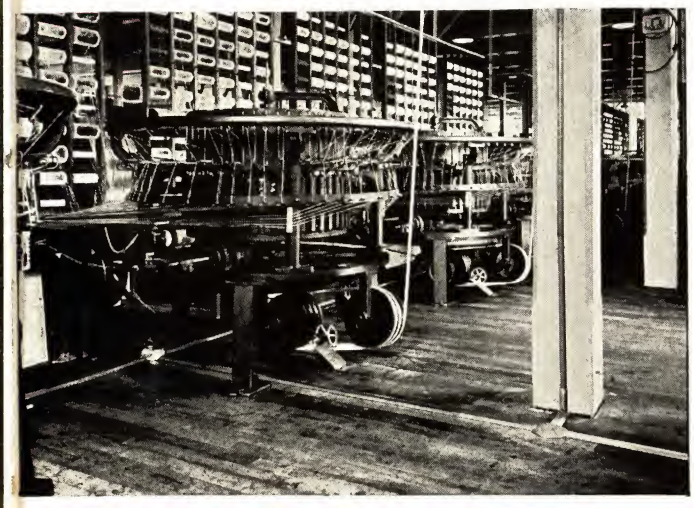
(5) The base of "Pancake" Wiremold is provided with screw knockouts located on approximately 8½ in. centers. This feature enables the base to be fastened securely to worn and uneven floors.

RECENT DEVELOPMENTS

(1) Utility Box No. 1542-B—A brass cover fitting designed primarily to be used with standard stem type telephone and convenience floor outlets. Shown on opposite page.

(2) Junction Box No. 1542-D — A deep electro-galvanized box designed primarily for connecting No. 1500 overfloor raceway system to existing under-floor or concealed systems. Shown on opposite page.

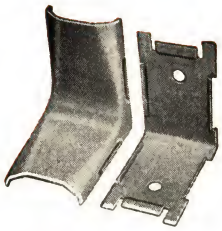








1511 • 90° Flat Elbow



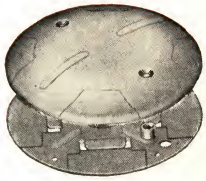
1517 • Internal Elbow



1524 • Telephone Outlet



1524A • Narrow Telephone Outlet



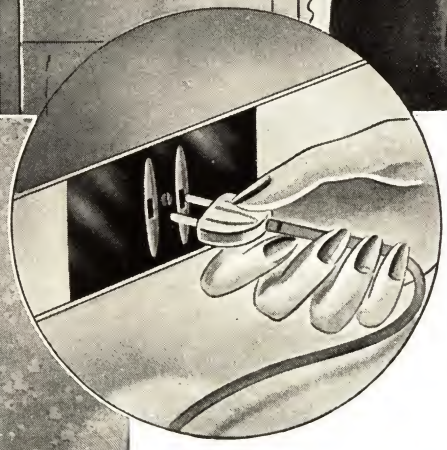
1542 • Junction Box

SPECIFY "PLUGMOLD" FOR THE HOME









THIS WIRING SYSTEM IS ADEQUATE FOR THE LIFE OF THE HOUSE

ONE of the most annoying problems in interior wiring is the correct "spotting" of electrical outlets at the time the plans are being drawn. This is evidenced by the fact that there exists comparatively few buildings of any type in which the outlets, as originally located, are in the most convenient places.

One of the fundamental changes for which "Plugmold" is largely responsible is the change in the technique of the Architect and Electrical Engineer in laying out the wiring for a building. Formerly, the procedure was to anticipate electrical requirements; outlets were then "spotted" around each room at points which were *assumed* to be convenient for the ultimate occupant. With "Plugmold", it is simply necessary to specify that the channel be installed around the entire room —either on the surface, over the baseboard or at chair rail height—or imbedded in plaster at any height to meet requirements. The actual location of outlets is left for later consideration. When the building is nearing completion, it is a simple matter to indicate the location of the outlets and have the Electrical Contractor install them where specified.

After the building is occupied, the furniture placed and new equipment added, the true value of "Plugmold" is immediately revealed. New outlets—anywhere on the "Plugmold" Strip—are easily added; the Electrical Contractor simply breaks out a 3-inch scored section

of the cover, and in its place inserts a Wiremold (No. 2127) receptacle.

In designing "Plugmold", our Engineers had the appearance of the finished installation in mind. Consequently "Plugmold", when properly installed, becomes a part of the interior trim; it tends to add to the appearance of the room.

Details showing typical installation methods are shown on page 13.

"PLUGMOLD" IS ESPECIALLY DESIRABLE IN APARTMENTS

To meet the continual change of apartment occupants—and the consequent changes in furniture, lamp and appliance arrangements — "Plugmold" demonstrates its wide versatility. It permits outlets to be added when and where needed at small cost—and without the usual inconvenience to the tenant.

ONE TO THREE CIRCUITS IN RACEWAY

The raceway, while of small size, allows the use of one, two or three 2-wire circuits. This large capacity is particularly important where an additional circuit must be added in a single raceway to handle increased current consumption. It also provides capacity for conductors required for operating floor lamps from wall switches.

"PLUGMOLD" • ENGINEERED FOR SAFETY AND ADEQUACY

PERHAPS one of the most hazardous of the unapproved wiring methods is the too-prevalent sub-standard variety of convenience outlet extension cord. Even with the close vigilance of local inspectors and the National Board of Underwriters, this initially cheap and basically unsafe wiring method finds its ways to some extent into all types of premises, particularly the home, where it is installed by the handyman.

The demand for a wiring method that would safely provide adequate numbers of convenience outlets for all time led directly to the multi-outlet assembly commonly known as "Plugmold." The design of the system was dependent upon certain contingencies which were carefully studied with the hope that the resultant method of obtaining multi-outlets would be safe, economical and practical.

The prime object of any multi-outlet assembly is to provide sufficient and adequate means for the easy attachment of numerous plug connections. For any such wiring assembly system to be universally sufficient, there must be provided ample means for connecting the outlet load in accordance with the approved standards of the code. These accepted standards, for occupancies other than dwellings, limit the branch circuit as to the number of outlets, while for dwellings the circuit is limited by the floor area that it may serve. In any case, the needed number of 15 to 20 ampere branch circuits is dependent upon the current carrying capacity of the conductors and the maximum size of over-current devices. "Plugmold," with the capacity of six No. 12 RC conductors, was designed to meet the requirements of these contingencies.

For easy attachment of plug connections, "Plugmold" provides receptacles which are installable independently of the raceway but are contained therein. This feature of "Plugmold" virtually insures that the receptacle will be wired and installed by experienced wiremen whose layout and workmanship are thereafter carefully inspected by well-trained electrical inspectors, in the field. Also, for economy and practicability, the receptacles have been so designed that they may be simply mounted on three-inch centers or any other centers, depending upon the varying requirements of the installations.

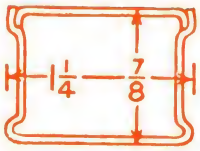
For future probable demands for more receptacles than initial available outlay permits, the cover of the raceway is scored in sections equal in length to that of the receptacle. This valuable feature facilitates the later installation of additional receptacles, since the cover may easily be removed, a section broken out at the proper location, and a receptacle mounted in its place.

The design of "Plugmold," the Wiremold multi-outlet assembly, has been developed after long, careful study based on safe and sound engineering principles established by the authorities in the National Electrical Code as adopted by the National Board of Underwriters and by municipalities and states generally.

(Reprinted from September, 1938, News-Bulletin, IAEI)

"Plugmold" MULTI-OUTLET ASSEMBLY

OUTLETS • WHERE AND WHEN REQUIRED





HOW TO INSTALL "PLUGMOLD" MULTI-OUTLETS

1st. Determine method of feeding receptacles—using either the 2110A end connector or a 7/8" knock-out in base of Channel.

2nd. Wire the 2127 receptacles on any desired distances, and provide sufficient slack for proper and easy location of the receptacles.



3rd. Snap wired receptacles into 2100B channel and lock into position—by merely turning locking cam 1/4 turn with screw driver.



4th. Snap in sections of 2100C capping to fit spaces between fittings.





2101
Coupling



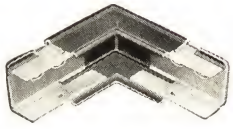
2110A • End Connector (1/2 in. female bushing)



2110B • Blank End Fitting



2111 • 90° Flat Elbow



2117 • Internal Elbow





2118 • External Elbow

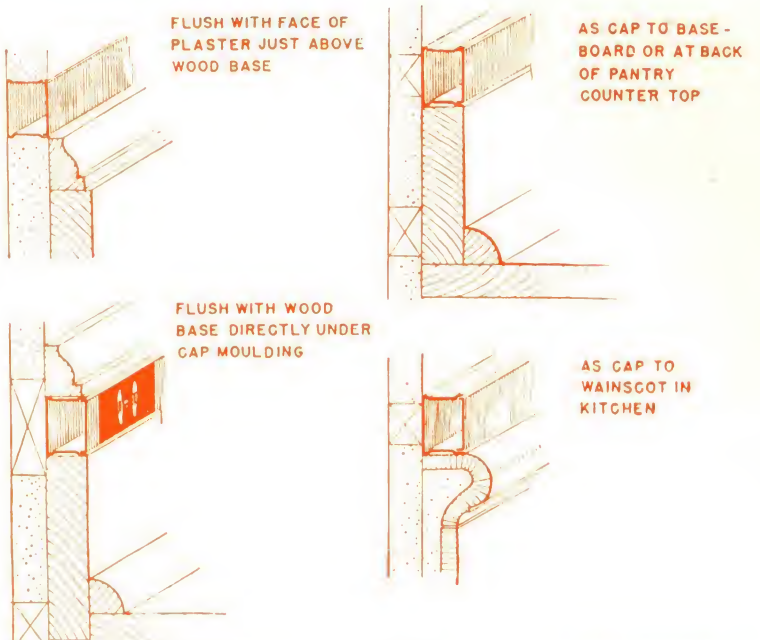


2127 • Plug Receptacle, 15a, 125v; 10a, 250v

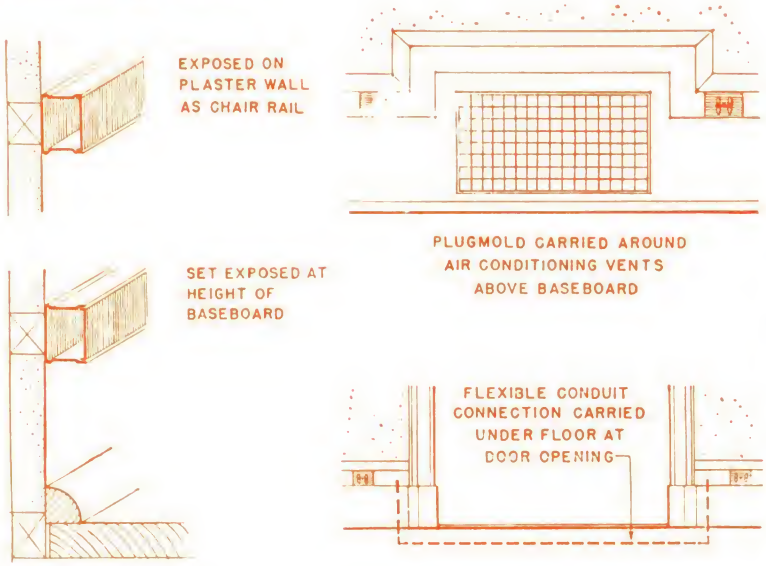
The interior at left shows a typical "Plugmold" installation. The outlets (No. 2127) are located at approximately 4-foot centers. They provide an economical and effective convenience outlet system that meets the requirements of any furniture, lamp and radio arrangement.

FLUSH METHOD

SEMI-FLUSH METHOD



EXPOSED METHOD



VARIOUS METHODS OF INSTALLING PLUGMOLD



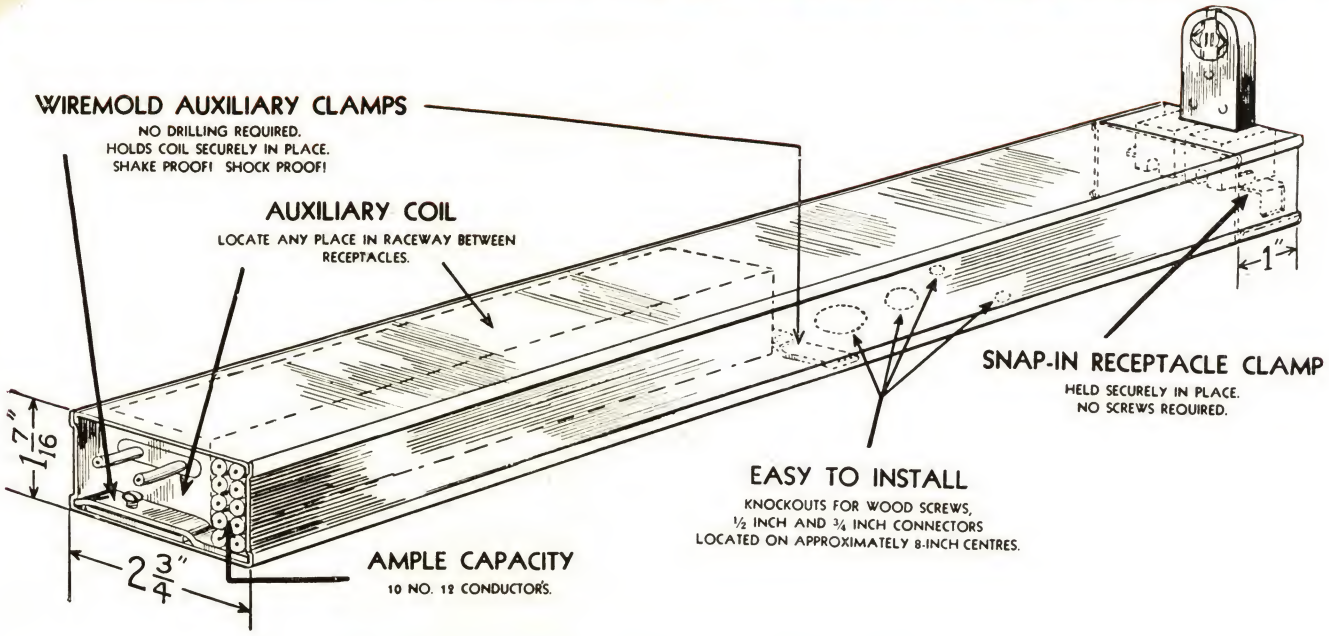
"Plugmold" has adequate capacity for six No. 12 rubber-covered conductors. It readily meets the requirements for heavy current apparatus in beauty parlors.



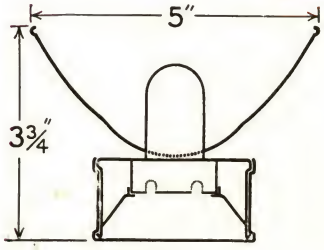
"Plugmold" built into this display platform provides proper means for the effective grouping and display of floor lamps.



"Plugmold" is particularly adapted to industrial work benches. Outlets can be placed wherever desired.

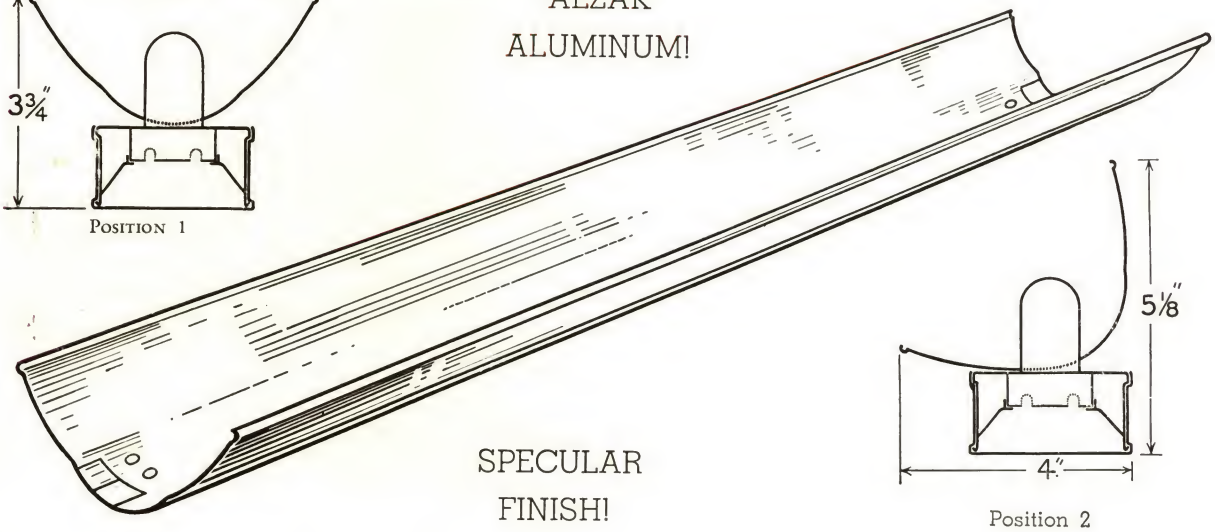


FLUORESCENT STRIP REFLECTOR



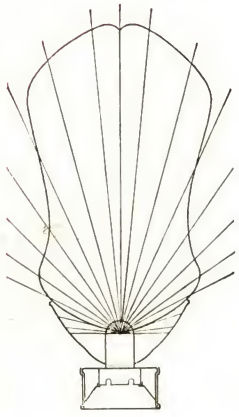
Position 1

ALZAK
ALUMINUM!



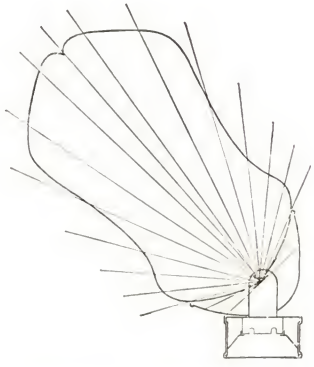
SPECULAR
FINISH!

Position 2



Position 1—Symmetrical

The Wiremold Fluorescent Reflector is designed to give an efficient and highly effective reflecting surface for the light source. Its contour is so shaped that this Reflector can be set in any one of three positions. (Two positions are shown.) This Wiremold Reflector combines the favorable features of symmetrical and asymmetrical types.



Position 2—Asymmetrical

WIREMOLD

THE COMMERCIAL VALUE OF THE FLUORESCENT LAMP

THE Fluorescent lamp, the new revolutionary type of lamp recently introduced to the trade, has found ready acceptance for numerous and varied applications for both commercial and industrial types of installations.

Noteworthy among the numerous advantages of this new light source are the following:

1. More light for the current consumed.
2. Less heat for the amount of light.
3. Daylight-colored light, economically produced.
4. Low surface brightness.

The Wiremold Fluorescent Strip permits the easy and economical installation of Fluorescent Mazda lighting.

In department stores and clothing shops where color discrimination is of prime importance and merchandise should be seen under daylight conditions, Fluorescent lighting is economically installed without changing the general lighting of the store.

For industrial applications, Wiremold Fluorescent lighting is particularly desirable. The inherent features of the lamp provide high levels and better quality of illumination for such difficult tasks as inspection tables, tobacco grading and fur matching. Fluorescent lighting permits these higher levels of illumination without the excessive rise in temperature ordinarily caused by the standard incandescent lamp.

Because of the low surface brightness, Fluorescent lamps may be exposed without shields. They cause no objectionable glare and make it possible to produce decorative effects with lines of lamps.



Wiremold Fluorescent Strip is used in the wall cases of the shoe store above.



→ Wiremold Fluorescent Strip is adaptable for use in suspended coves.



← Wiremold Fluorescent Strip is adaptable for use in showcases.



→ With Wiremold Fluorescent Strip, lines of lamps may be installed for decorative effects.

THE COMPANY *also manufactures—*

"WIREDUCT" NON-METALLIC FLEXIBLE CONDUIT
"WIREFLEX" NON-METALLIC SHEATHED CABLE
"WIREMOLD WIRE NUTS" SOLDERLESS CONNECTORS
"WIREMOLD ARMORED BUSHED CABLE"



SALES REPRESENTATIVES

*ATLANTA • H. C. BIGLIN, 142 Marietta St., N.W. (Jackson 2306)

BOSTON • EDWARD RIGBY, 10 High St., (Liberty 8612, 8613)

*CHICAGO • M. B. AUSTIN & CO., 108-116 So. Desplaines St., (Haymarket 4070)

*DALLAS • O. T. JENKINS, Sante Fe Building (Tel. 2-5936)

DETROIT • R. J. THORNE, 7720 Woodward Ave., (Trinity 2-7618)

*LOS ANGELES • FRANK J. AIREY CO., 1855 Industrial St., (Tu - 3101 - 3102)

*NEW YORK • GEO. W. SUNDSTROM, 29-31 East 22nd St., (Gramercy 7-2332 - 2333)

PHILADELPHIA • WALTER S. BECKETT, 602 E. Moreland Ave., (Chestnut Hill 2775)

PITTSBURGH • H. C. MORAN, 1724 Grant Bldg., (Atlantic 4677)

*SAN FRANCISCO • GEO. A. GRAY, 2720—17th St., (Hemlock 1527 - 1528)

SEATTLE • F. A. STROHECKER, 2207 First Ave., South, (Elliott 0350)

* Complete Warehouse Stocks Carried

THE WIREMOLD COMPANY
HARTFORD • CONN.

SECTION 23

CONTINUED ⟶

THE ARROW-HART & HEGEMAN ELECTRIC CO.

Manufacturers of Wiring Devices and Electrical Control Apparatus
Trade Names: "H & H", "Hart", "Arrow"

HARTFORD, CONN.

SALES OFFICES

ATLANTA, GA. BOSTON, MASS. CHICAGO, ILL. DALLAS, TEX. DENVER, COLO. DETROIT, MICH.
LOS ANGELES, CAL. NEW YORK, N. Y. PHILADELPHIA, PA. SAN FRANCISCO, CAL. SYRACUSE, N. Y.

Products

Since 1890, ever since wiring devices were first used, this company has made a complete line of high quality, dependable articles. Owing to recent competitive conditions we have made two lines, competitively priced and sold under the trade names "Mohican" and "Relyon." These brands should not be confused with our standard lines, "H & H" and "Arrow."

New Devices

To make the use of electricity more convenient in all types of buildings, many new devices are now available. Some of the more recent are Interchangeable Line, Silent Sphinx Switches, Residential Switches, Type "C" Switches, 10-ampere size, etc. "Ivorylite" Switches, Receptacles and Plates. This is a white, cream tinted moulded material ivorylike in appearance.

Send for General Catalog illustrating other new devices and the complete line

H&H-ARROW

SUGGESTED SIMPLE SPECIFICATIONS
For Wiring Devices in Residences

1. General

The contractor shall base his bid on furnishing all wiring devices in the particular make or grade herein mentioned.

Where the words "approved equal" are inserted it shall be understood that any substitutions shall be formally approved by the Architect. Otherwise, if no such formal approval is given, the Architect will require that all wiring devices shall be installed in the exact type and grade herein specifically mentioned.

In cases where certain types of devices, such as "Clock Hanger Outlets," "Fan Hanger Outlets," are specified but not shown on plans, such outlets or devices will not be required to be furnished unless definitely indicated.

The specifications covering attic lights, basement, closet, and bathroom lights shall be for all outlets indicated in such areas, and not otherwise specified to be included in the lighting fixtures allowance or contract.

2. Convenience Outlets—Inside

All inside convenience outlets shall be furnished in Arrow-H & H No. 1913* duplex type or approved equal unless two-circuit type is called for, which shall be furnished in Arrow-H & H No. 1915, two-circuit type. In cases where the latter type is called for, provide single pole control switch in Arrow-H & H No. 8601 or approved equal.

3. Convenience Outlets—Outdoor

All outdoor convenience outlets shall be furnished in Arrow-H & H No. 7792 or approved equal, complete with cover. This shall include all outlets on outdoor porches, etc.

4. Floor Convenience Outlets

All floor convenience outlets shall be furnished in Arrow-H & H No. 7797 or approved equal, complete with flush screw cover and plate, and also provide extra single hole brass cover.

5. Fan Hanger Outlets

Where fan outlets are indicated, furnish fan hanger outlets in Arrow-H & H No. 7750 complete with plate, or approved equal. These outlets shall be located at height as directed by the Architect.

6. Clock Hanger Outlet

Where clock outlets are indicated, furnish clock hanger outlet in Arrow-H & H No. 7707 complete with plate, or approved equal. Exact location to be as directed by the Architect.

7. Radio Outlets

Furnish and install separate antenna properly supported with insulators and grounded for each radio outlet indicated. Connect separate lead-in from aerial and run into attic through insulators. In attic, run separate lead-in knob and tube construction to each radio outlet indicated on plans. In each case, provide approved lightning arrester and install separate ground wire, also provide ground for each radio outlet.

At each radio outlet indicated install one Arrow-H & H No. 2146 with plate. Radio outlet complete with special cap, ready for connection of radio set, ground and aerial.

The entire radio installation shall be complete, and ready for operation for separate sets at each point where radio outlet is indicated on plans. Entire radio system shall be installed in strict conformity with National Electrical Code and with the Insurance Company having jurisdiction.

*Ivorylite optional.

7-A. Alternate Radio System

(*Where more than two radio outlets are indicated on plans.*) Furnish and install a doublet antenna and lead-in, including lightning arrester and furnish one antenna transformer, Arrow-H & H No. 3082. Run distribution leads to each radio outlet indicated on plans, consisting of No. 18—$\frac{1}{32}$-in. R. C. twisted pair, run in knob and tube. At each radio outlet indicated, furnish one Arrow-H & H No. 3093 combination radio and power outlet with plate to match other switch and receptacle plates. Complete radio installation shall be made in accordance with Arrow-H & H All-Wave Multicoupler Instructions.

8. Laundry Unit

Furnish in laundry, where indicated, one combination outlet, pilot and switch with Durachrome plate in Arrow-H & H No. 5350 or approved equal located about 4 ft. above floor or as directed by Architect.

9. Switches

The contractor shall furnish at each point indicated tumbler switches in Arrow-H & H or approved equal in the following types: Single pole switches No. 8601*; double pole No. 8602*; 3-way No. 8603*; 4-way No. 8604.* Closet door switches No. 2022. Where single pole and 3-way switches are located adjacent to each other, use single pole and 3-way Interchangeable Units T-1311, T-1313. For control of at least one basement light, use one switch pilot combination T-1311, T-1377. All stairways between first and second floors shall be provided with at least two 3-way switch control points, and if more than 2-point control is shown, use two 3-way switches and one 4-way switch for each additional control.

10. Weatherproof Switches

If any outdoor switches are indicated for porch, patio or garage lighting, furnish Arrow-H & H No. 7981 weatherproof switch or approved equal.

See Catalog Data on following pages, indexed according to paragraphs

H&H-ARROW Wiring Devices

11. Range Outlet

Furnish range outlet flush type in Arrow-H & H No. 7885 or approved equal and install in 4-in. standard box with a standard 2-gang raised cover. Outlet to have rating of 50 amperes, at 250 volts.

11-A. Alternate Range Outlet

Where indicated to be of surface type, furnish range outlet in Arrow-H & H No. 7950 or approved equal. Rating 50 amperes, at 250 volts.

12. Plates

All plates shall be furnished in brass, .060-in. thickness in Arrow-H & H or approved equal, with finish as approved by the Architect, except in kitchen, bathrooms and lavatories, where switch and receptacle plates are to be No. 4151 and No. 4150, respectively, in "Duracrome" finish. All other rooms to be Arrow-H & H No. 8861 and No. 8661, respectively, unless otherwise specified. Plates for fan hangers and clock outlets to be as specified elsewhere herein.

12-A. Alternate for Plates

If bakelite plates are specified or shown on plans same shall be furnished in Arrow-H & H No. 9040 for receptacles and No. 9021 for switches. (Ivorylite optional.)

13. Lighting Fixtures Not Included Under Fixture Allowance or Fixture Contract

Furnish all attic, closet, garage, and cellar service lights in Arrow-H & H or approved equal as follows: On switched outlets No. 5965 keyless receptacle, or unswitched lights in attic and closet No. 7423 porcelain pull ceiling receptacle.

14. Bathroom Fixtures

Furnish all bathroom wall brackets in Arrow-H & H No. 270 or approved equal porcelain wall bracket.

Where overhead lights are indicated, furnish Arrow-H & H No. 276 or approved equal porcelain beam light.

CATALOG DATA



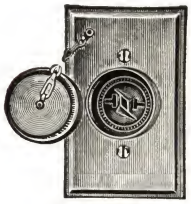
No. 1913

(2)
Convenience Outlets

15 amperes 125 volts, 10 amperes 250 volts.

Regular Duplex has 2 double T-slot outlets, wide plaster ears and 4 contact screws. Two-circuit style has 1 outlet always on for appliances; other outlet for lamps is controlled by wall switch.

Duplex		
1913	Brown bakelite	$32.00 C.
1913-I	Ivorylite	39.00 C.
1915	Brown bakelite, 2-circuit	42.50 C.



No. 7792

(3)
Outdoor Convenience Outlet

15 amperes 125 volts, 10 amperes 250 volts.

A permanent, weatherproof outlet for plugging in outdoor lighting connections or appliances. Saves the nuisance of temporary wiring from the inside.

7792	Has brass plate, cadmium plated and rubber weatherproof mat under the plate. A metal cap screws over opening when not in use.	$172.00 C.



No. 7797

(4)
Floor Convenience Outlet

15 amperes 125 volts, 10 amperes 250 volts.

To plug in lamps without the nuisance of running long cords from the wall. Receptacle is recessed so the plug is sunk flush with the floor. Two threaded solid brass covers are supplied, also bevel edge plate. Designed for wood floors, not waterproof.

7797	Complete with receptacle, plate and 2 covers	$148.50 C.



No. 7750

(5)
Fan Hanger Outlet

15 amperes 125 volts, 10 amperes 250 volts.

Provides electrical connection and mechanical support for fans. Supports a weight many times greater than a fan. Hangs the fan on the wall out of the way.

7750	Complete with plate	$260.00 C.



No. 7707

(6)
Clock Hanger Outlet

15 amperes 125 volts, 10 amperes 250 volts.

A double service device providing mechanical support for the electric clock and electrical connection. Receptacle is recessed so the plug cap goes flush with the plate. This allows the clock to hang flat over the outlet, entirely covering it with all wiring concealed. May be installed in a mantel for shelf clocks.

7707	Complete with plate	$151.00 C.



No. 2145

(7)
Radio Outlet

Provides aerial, ground and power from one flush outlet. Has special polarized cap for aerial and ground and cannot be inserted in power outlet.

Eliminates straggling wires around radio and is easily connected to inside concealed or outdoor aerial.

2146	Complete with receptacle, plate and radio cap	$116.50 C.

(7-A)
Alternate Radio System
All-Wave Multicoupler Antenna System



No. 3091



No. 3093



No. 3082

Permanently wired in system provides for as many as 20 radio sets from one aerial, long and short wave. No maintenance expense, no reaction or interference between sets. Suitable for all types of buildings. Brass wall plates are standard. Brown bakelite plates if desired add "-B" to number; or Ivorylite plates add "-I" to number. Free engineering and layout service on receipt of plans.

3091	Radio and 2-power outlets	$8.50 each
3093	Radio and 1-power outlet	7.90 each
3082	Aerial transformer	6.00 each

Send for special Multicoupler Specification Folder.

H&H-ARROW WIRING DEVICES



No. 5350

(8)

Laundry Unit

15 amperes, 125 volts, 10 amperes, 250 volts.

For laundry and kitchen equipment. Switch controls outlet and warning light glows red when current is being used in washing machines, ironers, dryers, etc. Comes complete with chromium finished plate. Made in a wide variety of styles for other uses.

5350	Standard unit	$392.50 C.



No. 8601

(9)

Switches

These are standard switches suitable for general use in all types of buildings. They are thoroughly dependable and will give lasting years of service. Supplied also in lock style. If desired add "L" to the number and $0.70 each additional for lock feature.

8601	Single pole, 10 amp. 125 v.	$ 35.00 C.
8602	Double pole, 10 amp. 250 v.	89.50 C.
8603	3-way, 10 amp. 125 v.	57.50 C.
8604	4-way, 5 amp. 125 v.	297.00 C.



No. 7981

(10)

Weatherproof Switches

For installations exposed to weather, dampness and special atmospheric conditions, as on porches, garages, patios, industrial plants and other exposed locations. Complete with cadmium finished plate, rubber weatherproof mat, and switch, with indicating operating lever on plate.

7981	Single pole, 10 amp. 125 v.	$174.00 C.
7982	Double pole, 10 amp. 250 v.	228.00 C.
7983	3-way, 10 amp. 125 v.	196.50 C.
7984	4-way, 5 amp. 125 v.	436.00 C.



No. 7885

(11)

Flush Range Outlet

50 amperes, 250 volts, 3-wire.

7885	Complete with plate. Made of black bakelite for 3-wire straight-in wiring. Fits 4 or 4 11/16-in. box.	$339.50 C.



No. 7950

(11-A)

Alternate, Surface Range Outlet

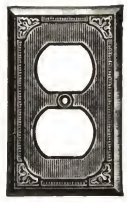
50 amperes, 250 volts, 3-wire.

Made of black bakelite designed for straight-in wiring. If metallic cable is used, ground strap No. 7951 should be specified.

7950	Surface outlet	$193.00 C.
7951	Ground strap	43.00 C.



No. 8861



No. 9040

(12, 12-A)

Flush Plates

These plates are made of brass, .060 in., brown bakelite or Ivorylite. Only the more generally used plates are listed, but special or combination plates are also made.

BRASS .060 IN.

8861	For tumbler switch	$23.50 C.
8661	For duplex convenience outlet	23.50 C.

"DURACROME," BRASS, CHROMIUM FINISH

4151	For tumbler switch	$32.00 C.
4150	For duplex convenience outlet	32.00 C.

BROWN BAKELITE

9021	For tumbler switch	$10.50 C.
9040	For duplex convenience outlet	6.50 C.

IVORYLITE

9021-I	For tumbler switch	$12.00 C.
9040-I	For duplex convenience outlet	12.00 C.



No. 7423



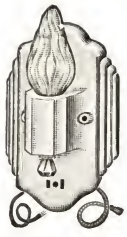
No. 5965

(13)

Lighting Fixtures

Not included under Fixture Allowance or Fixture Contract. Made of white glazed porcelain. Pull 250 watts, keyless 660 watts, 250 volts.

5965	Keyless, for 3¼-in. outlet box	$18.50 C.
7423	Pull, for 3¼-in. outlet box	24.00 C.



No. 270



No. 276

(14)

Bathroom Fixtures

270	Porcelain bracket with plug outlet	$1.24 ea.
276	Porcelain ceiling light for 3¼ or 4-in. outlet box. Keyless for wall switch control	.70 ea.

Additional Devices Not Included in the Preceding Simplified Specifications or Listed in the Above Data



No. 2022

Automatic Door Switches

6 amperes, 125 volts; 3 amperes, 250 volts.

These switches are installed in the door jamb and automatically control the light as the door is opened or closed.

2022	On when door is open	$3.40 ea.
2023	On when door is closed	3.40 ea.

Hole in jam 1 1/16 in. wide, 3/8 in. long, 1½ in. deep. Plate dimensions 3¾ x 1¼ in.



No. 1281 with No. 1285 Plate

Rotary Lock Switches, with Corbin Lock

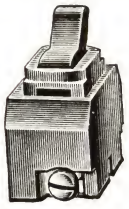
1281	Single pole, 10 amp. 125 v.	$3.71 ea.
1282	Double pole, 10 amp. 250 v.	4.38 ea.
1283	3-way, 10 amp. 125 v.	4.38 ea.
1284	4-way, 10 amp. 125 v.	4.96 ea.
1285	Brass plate	.60 ea.

1 key is furnished each switch. Additional keys may be ordered; and on special order, a master lock system will be supplied.

H&H-ARROW WIRING DEVICES

Interchangeable Line

One, two or three wiring device units may be assembled on a metal yoke and installed in a single gang wall case, covered by a single gang wall plate. A two gang installation would accommodate six units, etc. There is a complete line of flush device units to select from and any desired combination can be made quickly on the job. Available in brown Bakelite or white Ivorylite.



No. T-1311



No. T-1320



No. T-1340



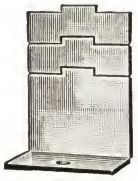
No. T-1339



No. T-1377



No. T-1322



No. T-1346



No. T-1344

No.	SWITCHES	List C
T-1311	Single pole	$ 35.00
T-1312	Double pole	89.50
T-1313	Three-way	57.50
T-1314	Four-way	297.00
	RECEPTACLES	
T-1320	Standard	14.00
T-1341	With lead wire for pilot light	24.00
	PILOT LIGHTS	
T-1340	Pilot light	95.50
T-1339	Night light	95.50
T-1377	Flush pilot light	95.50
	RADIO OUTLET	
T-1322	Radio outlet	42.50
T-1346	Divider plate	28.00
T-1344	Bell push	25.00

Flush Plates



No. T-1381



No. T-1332



No. T-1671-C



No. T-1672-2C

Bakelite	List per C.	Brass	List C	Openings
		ONE GANG		
T-1381	$11.50	T-1671-A	$23.50	One
T-1332	16.00	T-1671-B	28.50	Two
T-1333	16.00	T-1671-C	28.50	Three
		TWO GANGS		
T-1382	22.50	T-1672-2A	47.00	Two
T-1334	32.00	T-1672-2B	57.00	Four
T-1336	45.00	T-1672-2C	57.00	Six

Moulded plates also supplied in White Ivorylite. Brush Brass is standard on brass plates, other finishes on order.



No. 1531

Type "C" Tumbler Switches

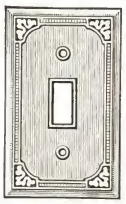
Designed to handle the initial current surge of Type "C" lamps. Also supplied for 20 and 30-ampere capacity. Switches take standard tumbler plates.

1531	Single pole, 10 amp. 125v.	Enclosed bakelite base	$85.00 C.
1532	Double pole, 10 amp. 250v.		138.00 C.
1533	3-way, 10 amp. 125v.		106.00 C.
1534	4-way, 5 amp. 125v.		339.50 C.

Ivorylite Devices



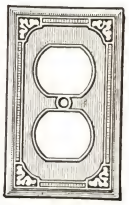
No. 8601-I



No. 9021-I



No. 1913-I



No. 9040-I

Ivorylite is a cream tinted, white moulded material, ivory-like in appearance and of solid color throughout. It is not a finish and will not chip, flake or wear off. If soiled it may be cleaned with a damp cloth.

8601-I	Single pole switch, 10 amp. 125v	$45.00 C.
8602-I	Double pole switch, 10 amp. 250v	99.50 C.
8603-I	3-way switch, 10 amp. 125v	67.50 C.
8604-I	4-way switch, 5 amp. 125v	307.00 C.
9021-I	Tumbler plate	12.00 C.
1913-I	Duplex receptacle	39.00 C.
9040-I	Duplex plate	12.00 C.

Polarized Devices



No. 7089



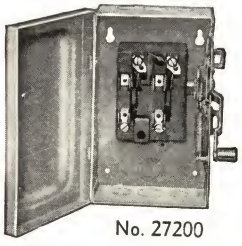
No. 7310



No. 7408

2, 3 or 4-wire, 10, 20, 30, 50 amperes. A condensed listing is given below. For the complete line, see general catalog illustrating plug caps and surface devices. Receptacles take standard plates, except No. 7438 which requires plate No. 7439.

7960	Flush receptacle, 2-wire, 10 amp	$58.50 C.
7089	Flush receptacle, 2-wire, 20 amp	106.00 C.
7438	Flush receptacle, 2-wire, 30 amp	141.00 C.
7310	Flush receptacle, 3-wire, 10 amp	115.00 C.
7445	Duplex receptacle, 3-wire, 10 amp	168.00 C.
7316	Flush receptacle, 3-wire, 20 amp	127.00 C.
7408	Flush receptacle, 4-wire, 20 amp	156.00 C.

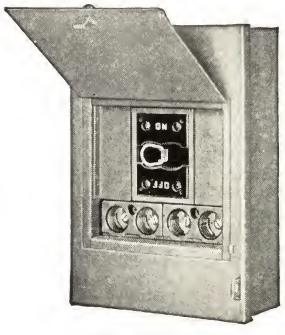


No. 27200

Type A Enclosed Switches

Available in capacities 30-1200 amperes for 2, 3, or 4-wire, 3 SN, 4 SN poles in a wide variety of styles. Also made in types C and D, in lower price class.

Send for Safety Switch Catalog No. 7.



No. 27157

Enclosed Pull-out Switches

For service entrance wiring. Meter-switch-fuse sequence. Made in a complete line for all types of requirements for ranges, water heaters, and lighting currents.

Send for Safety Switch Catalog No. 7.

THE BRYANT ELECTRIC COMPANY

Manufacturers of "Superior Wiring Devices" Since 1888

BRIDGEPORT, CONN.

NEW YORK, N. Y. CHICAGO, ILL. SAN FRANCISCO, CALIF. LOS ANGELES, CALIF.

BRYANT FLUSH SWITCHES

"T" RATED FOR TYPE "C" LAMP LOADS

For Grade "A" Buildings and Fine Residences — **For Commercial and Industrial Installations**

Approved for Federal Specifications



No. 4961

Mechanism is enclosed in arc-resisting composition and insulated from yoke. Quiet in operation and designed for long life, these switches are ideal for installation in banks, hospitals, hotels, apartments, schools, theatres, office buildings and fine residences.

Mechanism is equipped with arc snuffers and totally enclosed in bakelite. Designed and built for long service in Type "C" lamp circuits of 20 and 30 amperes. Approved for motor control up to and including 2 H.P. A.C. Require boxes not less than 2″ deep. Fit standard plates.



No. 5421

$	$3	$2	$4
Single-Pole	**Three-Way**	**Double-Pole**	**Four-Way**
10 amperes, 4961	10 amperes, 4963	10 amperes, 4962	5 amperes, 4964
20 amperes, 5421	20 amperes, 5423	20 amperes, 5422	20 amperes, 5424
30 amperes, 5431	30 amperes, 5433	30 amperes, 5432	



No. 3951-1

For Installation in the Home, Office and Factory

A high grade general purpose switch. Mechanism is mounted in a porcelain cup.

Small and compact, these switches are ideal for installations where space is limited. Mechanism is enclosed in bakelite.

Single-Pole	Three-Way	Double-Pole	Four-Way
10 amperes, 3951	10 amperes, 3953	10 amperes, 3952	5 amperes, 3954
10 amperes, 1815-D	10 amperes, 1835-D	10 amperes, 1825-D	5 amperes, 1844-D



No. 1815-D

STANDARD RATING FOR MEDIUM AND MODERATELY PRICED HOMES



No. H61

No. H61 is side wired for easy installation. Mechanism is enclosed in bakelite.

No. H51 is top wired and mechanism is enclosed in porcelain.

Single-Pole	Three-Way
10 amperes, H61	10 amperes, H63
10 amperes, H51	10 amperes, H53

Made in single-pole and three-way only. Brown handles regular. Ivory handles on order.



No. H51

Note: Special Feature Suffixes:—"I"—Ivory; "L"—Lock type; "M"—Momentary contact; "RH"—Rubber handle.

WEATHERPROOF SWITCH

$WP



No. 4421

For installations exposed to weather and dampness, as on porches, garages, industrial plants, etc. Plate is cadmium plated. Rubber mat supplied.

10 amperes, No. 4421	Single-pole,
10 amperes, No. 4423	Three-way,
10 amperes, No. 4422	Double-Pole,
5 amperes, No. 4424	Four-way,

Also available in 20-ampere size and with plates for "FS" type fittings.

AUTOMATIC DOOR SWITCH

$D

Furnished complete with box and strike plate. Automatically switches light on when door is opened. Switch is mortised in door jamb. Strike plate is mounted on hinged edge of door.

6 amperes, No. 2355



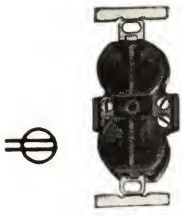
No. 2355

Listed as Standard by Underwriters' Laboratories, Inc.

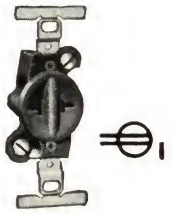
BRYANT CONVENIENCE OUTLETS

STANDARD TYPE

Top Terminals



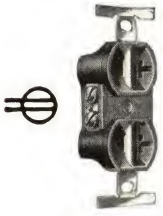
Duplex
No. 4812



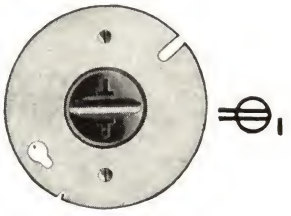
Single
No. 4810

Totally enclosed in bakelite, this receptacle has "T" slots, double-sided spring contacts and wide mounting yoke. Approved for Federal Specifications and recommended for all Grade "A" Buildings.

Side Terminals



No. 4832



No. 3780

Totally enclosed in bakelite and with "T" slots, double-sided spring contacts and wide mounting yoke. Meets requirements of best specifications including Federal.

Duplex		Single
4832	Brown	4831
4832-I	Ivory	4831-I

For Switch Control of One Outlet

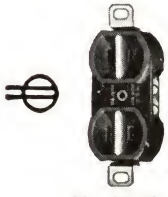
One side controlled by switch; other side always alive for vacuum cleaner, radio, fan, etc.

4832-X	Separate feeds, separate returns
4832-Y	Separate feeds, common return

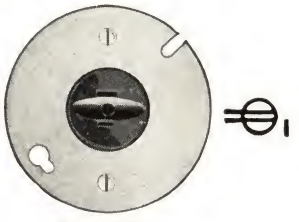
Box Mounting with Metal Covers

3781	Brown, 3¼ inches	3780
4782	Brown, 4 inches	4780

Side Terminals—Narrow Mounting Yoke



No. H142



No. H341

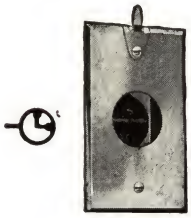
Enclosed in bakelite and has parallel slots only. Designed for moderately priced homes and all installations where a dependable outlet is desired at minimum cost.

Duplex		Single
H142	Brown	H141
H142-I	Ivory	H141-I

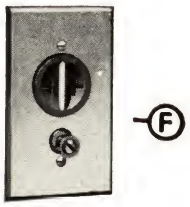
Box Mounting with Metal Covers

H342	Brown, 3¼ inches	H341
H442	Brown, 4 inches	H441

SPECIAL PURPOSE TYPE



Clock
No. 2828-F



Fan
No. 3751

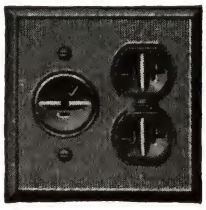
No. 2828-F—Provides a sturdy hook for attaching the clock and is recessed for the cord and plug, completely concealing both when the clock is in place.

No. 3751—A safe and secure mounting for fans, loud-speakers and heaters. A strong threaded stud permits easy removal of appliances for cleaning, storage, etc.



No. 3789

Radio

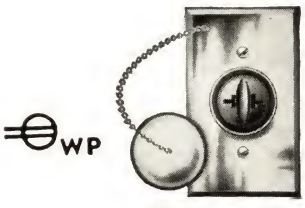


No. 22184

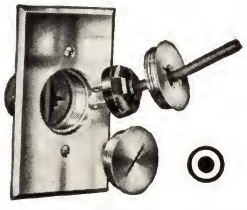
Concentrates aerial, ground and electrical power for radios in one outlet. Makes for neater appearance and provides more efficient and flexible operation.

No. 3789—One-gang combination. • Radio outlet and one-power outlet. Takes regular HV31 duplex outlet plate.

No. 22184—Two-gang combination. • One radio outlet and two-power outlets, complete with plate and radio cap.



Weatherproof
No. 3795



Floor
No. 3799

No. 3795—Weatherproof outlets make electricity conveniently available outdoors with safety. For porches, terraces, holiday decorations, etc.

No. 3795—Two-wire.

No. 3796—Three-wire.

No. 3799—The "adequate" device where electricity is desired at a distance from wall outlets. For island displays in stores, projection equipment, table power in the home, etc.

No. 3799—Beveled plate.

No. 3798—Square edge plate.

Listed as Standard by Underwriters' Laboratories, Inc.

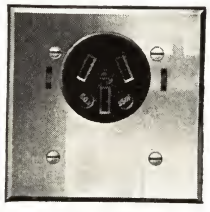
BRYANT FLUSH PLATES

Design and Finish of Plates

Character of Plate	Brush Brass	Chromium	Ribbed Bakelite	Mat Bakelite	Decorative Border	.040" Steel Lacquered	.040" Stainless Steel
							
	.060" OS61 .100" OS11	OS61-CHR OS11-CHR	HS31	HS51	HS21	Brown OS71-BX Ivory OS71-IX	OS71-CX
	.060" OS62 .100" OS12	OS62-CHR OS12-CHR	HS32	HS52	HS22	Brown OS72-BX Ivory OS72-IX	OS72-CX
	.060" OS63 .100" OS13	OS63-CHR OS13-CHR	HS33	HS53	HS23	Brown OS73-BX Ivory OS73-IX	OS73-CX
	.060" OV61 .100" OV11	OV61-CHR OV11-CHR	HV31	HV51	HV21	Brown OV71-BX Ivory OV71-IX	OV71-CX
	.060" OF61 .100" OF11	OF61-CHR OF11-CHR	HF31	HF51	HF21	Brown OF71-BX Ivory OF71-IX	OF71-CX
	.060" OSV62 .100" OSV12	OSV62-CHR OSV12-CHR	HSV32	....	HSV22	Brown OSV72-BX Ivory OSV72-IX	OSV72-CX
	.060" OSF62 .100" OSF12	OSF62-CHR OSF12-CHR	HSF32	HSF52	....	Brown OSF72-BX Ivory OSF72-IX	OSF72-CX
	.060" OSSV63 .100" OSSV13	OSSV63-CHR OSSV13-CHR	HSSV33	....	HSSV23	Brown OSSV73-BX Ivory OSSV73-IX	OSSV73-CX
	.060" OP61 .100" OP11	OP61-CHR OP11-CHR	HP31	HP51	....	....	....
	.060" OK61 .100" OK11	OK61-CHR OK11-CHR	HK31	HK51	HK21	Brown OK71-BX Ivory OK71-IX	OK71-CX
	.060" OG61 .100" OG11	OG61-CHR OG11-CHR	HG31	HG51	HG21	Brown OG71-BX Ivory OG71-IX	OG71-CX

For Ivory add "I" to Catalog Number

BRYANT RANGE CONNECTORS



No. 3862

R Range Outlet



No. 3826



No. 3830

Provides a permanent connection which is readily detachable whenever range is to be disconnected for renovation, redecoration or moving.

Flush mounting—3862. Surface mounting—3826.

For connecting range to receptacles at left. Modern design. Completely assembled.

All rubber—3830. Armored cable—3853.

Listed as Standard by Underwriters' Laboratories, Inc.

LAMPHOLDERS, PULL SWITCHES AND INTERCHANGEABLE UNIT DEVICES

LAMPHOLDERS



No. AA-15



No. H310

Brass Shell and Insulated Shell

⅛ in. brass shell, AA15
Weatherproof, 6 in. wires, H310



No. H168

Porcelain Pull Lampholder

For 3¼ in. box, H168
For 4 in. box, H188



No. 4300



Nos. 3890 and 3891

Fluorescent and Lumiline

Fluorescent, surface or flush mounting, 4300
Lumiline cap, 3890. Base, 3891

PULL SWITCHES

10 Ampere Rating

For Ceiling, Wall and Box Mounting

Ⓢ Ceiling Pull Switch



No. 4331

	S.P.	*3-Way*	*D.P.*	*4-Way*
Ceiling	2387	2388	2396	2389
Wall	2546	2549	2565	2560
3¼-in. Box.....	4331	4333	4332	4334
4-in. Box.....	4341	4343	4342	4344



No. 2546

Ⓢ Wall Pull Switch

BRYANT INTERCHANGEABLE UNIT DEVICES

INTERCHANGEABLE UNITS



No. IL1311
Standard Switch



No. IL1391
Residence Switch



No. IL1320
Power Outlet



No. IL1322
Radio Outlet



No. IL1340
Pilot Light



No. IL1321
Power Cap

TYPICAL COMBINATIONS



(1) Three switches for living room, upper hall and porch.



(2) Two switches for light circuits; one outlet for vacuum cleaner, etc.



(3) Cellar or garage switch and pilot combination.



(4) Upper hall combination; night light, outlet and night light switch.



(5) Radio combination. Cat. No. IL-4504 covers combination complete with one radio outlet, one power outlet, plate and radio cap.

Listed as Standard by Underwriters' Laboratories, Inc.

MEMORANDA



GENERAL ELECTRIC
HOME WIRING

A MODERN WIRING METHOD FOR ALL TYPES OF RESIDENCES AND SMALL BUILDINGS

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

INCLUDING A CATALOG OF G-E MATERIALS SUITABLE FOR COMMERCIAL AND INDUSTRIAL AS WELL AS RESIDENTIAL WIRING

GENERAL ELECTRIC HOME WIRING MEETS THE MODERN NEED

for
Efficient Wiring in Homes and Small Buildings

G-E Home Wiring is designed to provide enough copper and outlets for all modern conveniences. It can be installed in many different ways. Each circuit of the system is independent with local control. Long circuit runs are avoided. Heavy risers terminate at conveniently located branch distribution units, from which final branch circuits are divided into separate runs. Economies are effected and the overloading of circuits is prevented. This method of wiring is not expensive in comparison with conventional wiring done adequately.

WHY GOOD WIRING IS ESSENTIAL

AMPLE COPPER AND PROPER LAYOUT

Much has been said and written about the need for outlets, but very little attention has been paid to wire sizes or to efficient layout design. Yet these two factors are even more important than an ample number of outlets. For of what use is an outlet if current can't get through to it without losses?

G-E Home Wiring furnishes enough outlets and ample copper. The slight additional cost of these ample copper conductors is returned many times over by the saving of two distinct losses—loss in heat and loss in power. Such losses are continuous and must be paid for as registered on the meter.

APPLIANCES NEED FULL VOLTAGE

The growing use of electrical appliances has made evident another loss not recognized before. This loss is far greater than the first two. Electrical appliances of all types are very efficient, of course, when used on electrical distribution systems that supply them with a sufficient amount of electricity at the pressure for which they were designed. If electricity is not supplied under these conditions, the appliances cannot do the work for which they were intended. They can work only as fast as, and at the rate at which they can obtain power. The appliances have not lost their high efficiency but they are unable to obtain enough power to do the work required of them in the time for which they were designed. In fact, in some cases, they cannot do the work at all, or not to the full extent of their capacity.

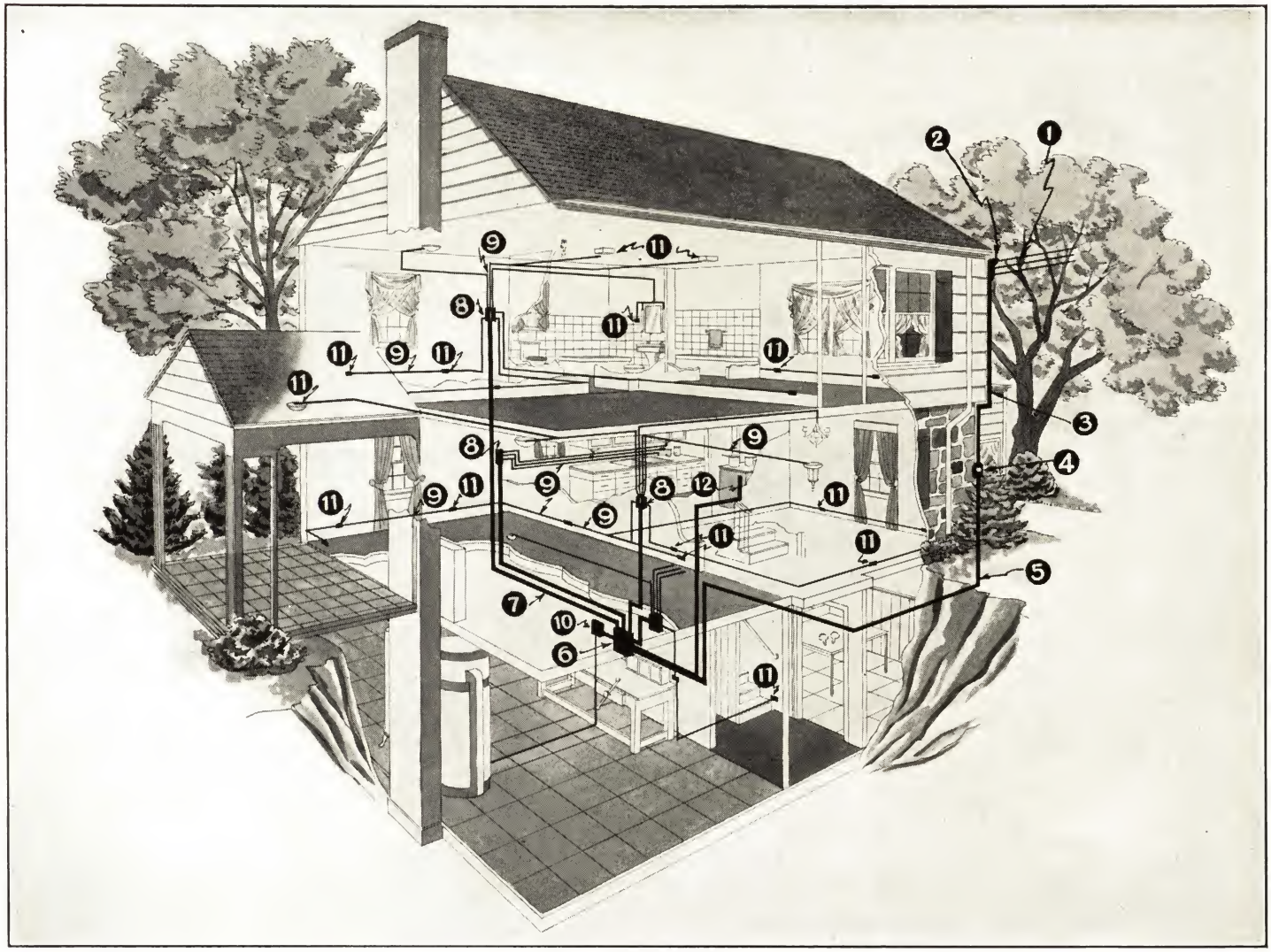
To the extent that the pressure supplied to the appliance is reduced, the time required to do the work expected from the appliance is increased. During this additional time, the appliance is continuing to use power which must be paid for. The electrical bill is increased because electricity is purchased on a time basis, that is, electricity is measured and paid for on the basis of the kilowatt-hour—or the power times the time.

G-E HOME WIRING SUPPLIES ALL NEEDS

It is apparent, then, that the attempt to save money on the size of the conductors throughout the electrical system will not be an economy, but will be foolhardy and will result in losses that will be constant throughout the life of the system. Upon consideration, it will be seen that a proper layout of the wiring system is without doubt the most important requisite in any home. G-E Home Wiring provides this proper layout, with ample copper and outlets, and with convenient control of circuits.

HOW G-E HOME WIRING MEETS MODERN NEEDS

1. Main Distribution Conductors and their Control Units are adequate to supply the power required according to the National Electrical Code rules.
2. Large sub-feeder conductors run from the main distribution control unit to conveniently located points in the home, where they terminate at individual control units which protect and control the final circuits.
3. Final circuits are divided in several short radial runs, each serving a few outlets. Note that circuits serving lighting fixtures are different from those serving convenience outlets.



1. SERVICE. Conductors from Utility high line to House.....Page 6

2. SERVICE FITTINGS. Joins service conductors and main feeders together Page 6

3. SERVICE ENTRANCE. Cable or rubber-covered conductors in conduit from service head to main distribution unit .....Page 6

4. OUTDOOR METER. Installed in accord with local utility.....Page 7

5. MAIN FEEDERS. Should be of sufficient size. See No. 3 above.....Page 7

6. MAIN DISTRIBUTION UNIT. Of proper size for total connected load. Shall contain main fuses or breakers, range fuses or breakers and protective devices for other fixed equipment. See local utility about type.....Page 7

7. SUB-FEEDERS. At least one size larger than final circuit conductors.....Page 7

8. BRANCH DISTRIBUTION UNITS. Locate near load centers. May be fuses or circuit breakers but device should be same type as used in main distribution unit. Controls all final branch circuits .....Page 10

9. FINAL CIRCUITS. Recommended that circuit be divided into several short sub-circuits which radiate from control units—each sub-circuit to serve only a few outlets.....Page 10

10. BOXES AND FITTINGS. Shall be furnished as needed.....Page 11

11. OUTLETS. Should conform to modern standards of adequacy.....Page 11

12. RANGE WIRING. Heavy enough to permit full-load operation of range. See local rules for installation..Page 16

THE G-E HOME WIRING METHOD

G-E Home Wiring embodies a method which meets the fundamental requirements for any successful electrical wiring system. It is a method which has always been used for industrial and commercial buildings because of its efficiency. Now, this same method is applicable to small and moderate-sized homes—an application relatively new, that is made possible because control units are now available for home uses. The G-E Home Wiring Method, suitable for all sizes and types of homes follows:

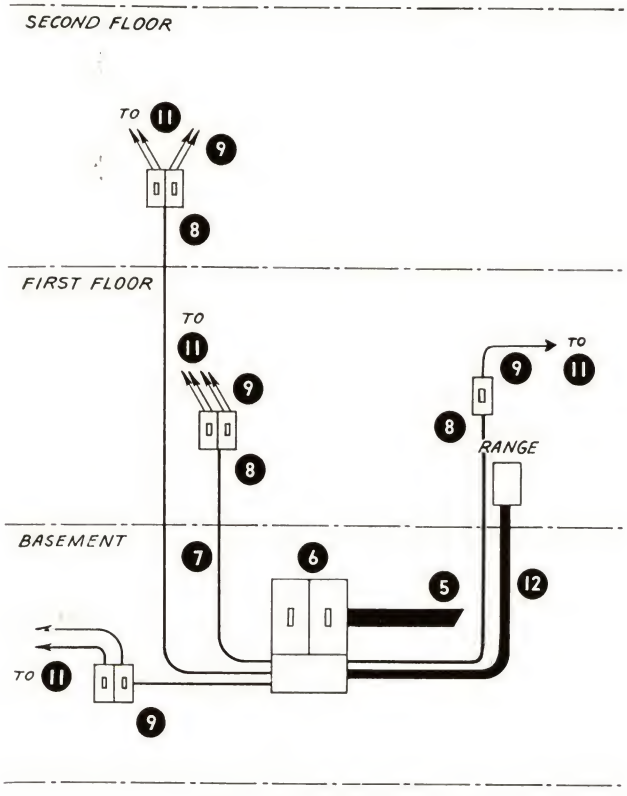
(1)—*Main Distribution Conductors and Control Units*—The size of these conductors can be determined by a careful check of the power required for the whole house. The National Electrical Code rules assure proper conductor sizes and also the proper main distribution unit of control.

(2)—*Sub-feeder Conductors and their Control Units*—It is here that the G-E Home Wiring Method departs from the usual practice today. Convenient, centrally located control points are selected on each floor. To these points, large sub-feeders are run from the main distribution control unit. Here, at the end of these sub-feeders, a sufficient number of control units are placed to protect and control the final circuits.

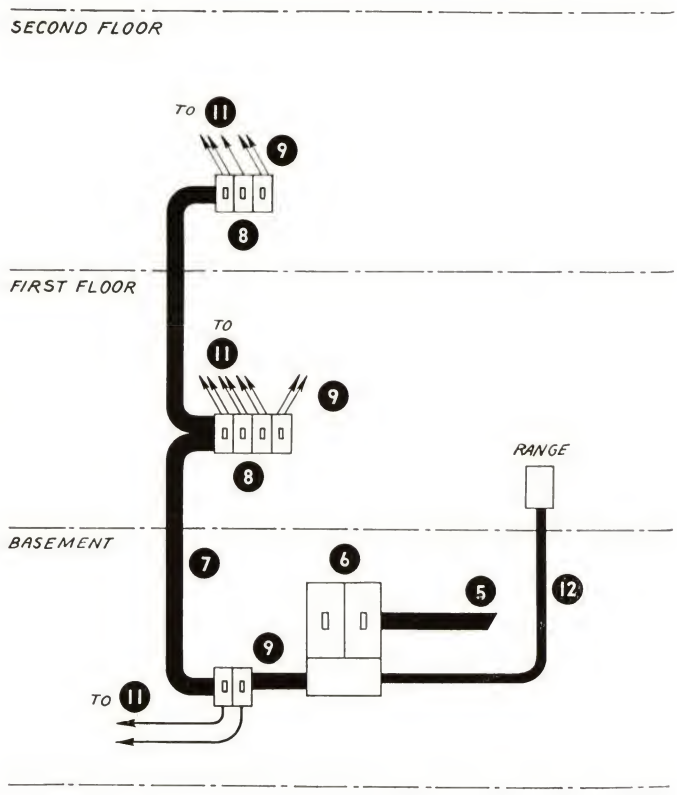
(3)—*Short Runs for the Final-circuit Conductors*—Here again, G-E Home Wiring differs from the common, unsatisfactory practice of today. Common practice, of course, runs a final circuit conductor as one long string from the central point with outlets along the way, like the long tail of a kite with bows along its length. With G-E Home Wiring, the final circuits are divided up into a number of final sub-circuits which radiate from the control unit like the rays of the sun. Each sub-circuit serves only a few outlets.

Helpful Examples of . . .

CASE 1—Note the risers to the load centers on first and second floors. This installation was made in accordance with Section 2434d of the N.E.C., 1937 Edition, which allows the use of feeder without protective devices in the main distribution unit. An installation of this kind will be found economical for smaller residences with a limited number of branch circuits.



CASE 2—Here, one heavy feeder runs to the first- and second-floor load centers. Inasmuch as the feeder is of the same size as the service entrance cable, the protective devices in the main distribution unit protect this feeder. There is also no code limitation to the length of the feeder or to the number of protective devices which it serves.



The numbers in diagrams refer to explanatory listing on page 3 and to product sections in this catalog

ADVANTAGES OF G-E HOME WIRING

G-E Home Wiring helps assure electrical comfort and convenience to the home owner now and in the future. It is complete, adequate and efficient.

Convenience—Enough outlets are provided so that lights and appliances can be used when and where they will be most useful. Ample wire sizes and proper layout design assure current being delivered at the outlets at full voltage. There is no waiting for pokey appliances to do their work.

Comfort—Lights burn brightly at their full rated voltage. There is no dimming and flickering of lights when appliances start to operate. Properly placed switches provide a pathway of light throughout the home without retracing steps.

Easy circuit Control—Control units are placed at convenient, centrally located points about the home. This is possible because heavy feeders terminate at these points. Final circuits start here. If overloads or short circuits occur, it is only necessary to walk a few steps to restore service instead of making a trip to the basement as would be necessary with conventional wiring.

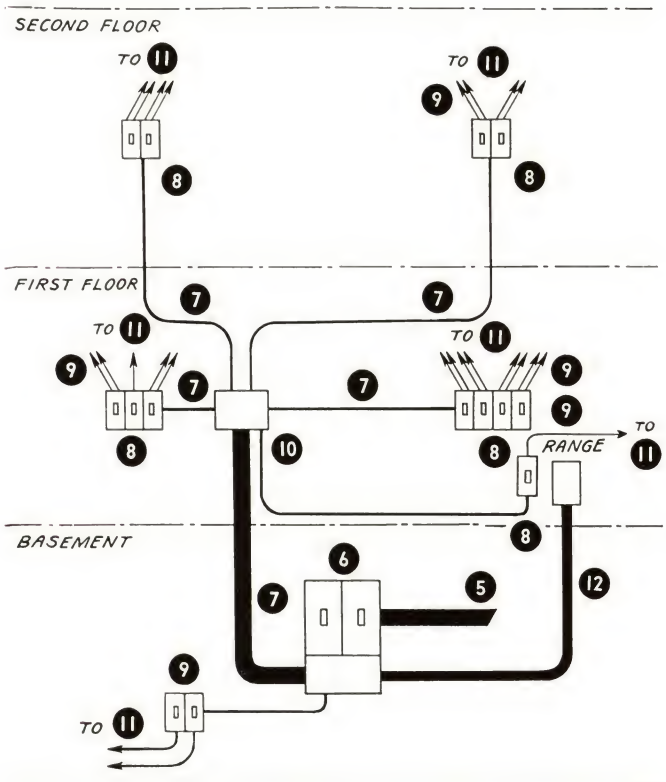
Efficiency—Proper wire sizes, short runs and radial circuits make G-E Home Wiring highly efficient. There is practically no voltage drop. An appliance operating at one outlet does not affect the operation of appliances at other outlets. Lights and appliances operate at their rated voltage.

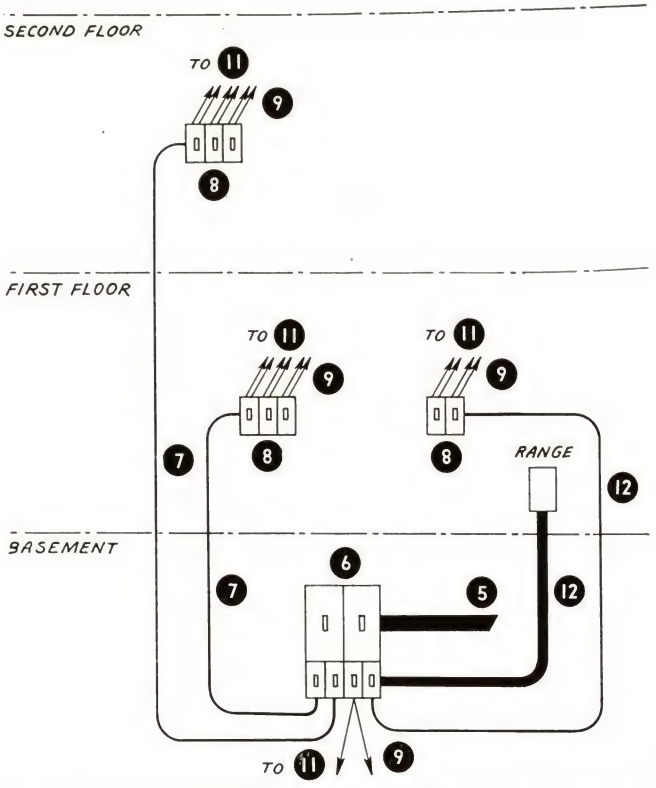
Economy—G-E Home Wiring helps save money in two ways: (1) expensive additional wiring will not be necessary in the future; (2) voltage losses are avoided. The voltage drop in the wires running to the outlets in a conventional wiring system causes considerable loss of efficiency in lights and appliances. These losses, of course, make the operation of appliances more expensive.

. . . G-E Home Wiring

CASE 3—A combination of the methods in the first two layouts is employed here. A single feeder of the same size as the service entrance cable is run to a central point on the first floor. From there, smaller feeders are installed, in accordance with Section 2434d of the N.E.C., 1937 Edition, which serve branch load centers on the first and second floors.

CASE 4—Here, the feeders are protected in the main distribution unit. This method permits feeder sizes which are not limited in length or number of protective devices served by them. The protective devices for the feeders must, of course, have a rating high enough for the load which is served by them. Probable diversity factor may be taken into consideration.





The numbers in diagrams refer to explanatory listing on page 3 and to product sections in this catalog

G-E Wiring Material for Home Wiring Installations

(Also for Industrial and Commercial Installations)

1 SERVICE

Materials used in the Electrical Service from the pole to the house are, of course, selected and installed by the local utility company. For G-E Wire and Cable available, see Sections No. 3 and No. 7.

2 SERVICE FITTINGS

See Section No. 10, Boxes and Fittings.

3 SERVICE ENTRANCE

Listed here are G-E cables and materials suitable for Service Entrance requirements and for use as Main Feeder Conductors, whatever type of installation you wish to specify.

Rigid Conduit—The accepted standard of protection for cables and conductors. It is used both on underground service entrance installations and on overhead installations from "point of attachment" (on the building) to meter and distribution center.



G-E White Rigid Conduit is thick-walled steel tubing, galvanized and Glyptal-coated inside and out, which can be connected at all points with threaded fittings.



G-E Black Rigid Conduit is heavy-wall steel tubing coated inside and out with a corrosion-resistant, elastic, black enamel.



G-E Electrical Metallic Tubing is light and easy to bend and requires no threading. Approved by Underwriters' Laboratories for both exposed and concealed work, except in cinder fill.



G-E Service Drop Cable, Type SD—For "Tamper-proof" overhead service entrance from pole to building. Available in 3-conductor assemblies, consisting of two insulated conductors, and a stranded concentric bare neutral conductor; and in 2-conductor assemblies, consisting of one rubber-covered wire and a stranded concentric bare conductor. Both are enclosed in waterproof tape and braid. Sizes: No. 10 AWG up to and including No. 2 AWG.

G-E Service Entrance Cable—"Tamper-proof," for use from point of attachment of Service Drop Cable at building to the distribution center.



Type SE, Style U—consists of one or more insulated conductors and a stranded concentric neutral conductor enclosed in a watertight, weatherproof covering. On short spans, it may be used from pole through to distribution center.



Type SE, Style A—Concentric Type (formerly A.E.I.C.) is a cable consisting of one or more rubber-covered conductors and a concentrically applied stranded bare conductor, protected by galvanized strip armor and a heavy watertight, weatherproof covering. Used when rigid conduit is not required.

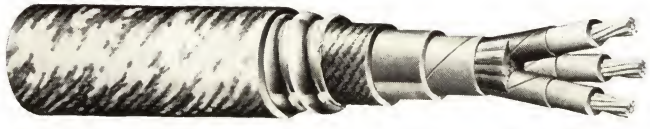


G-E V. C. Line Wire—For overhead use from pole to building where individual conductors are required. Consists of a solid or stranded conductor, covered with two or more wrappings of varnished cambric and an overall heavy cotton braid treated with U.R.C. compound, making it weatherproof.



G-E 600-volt Leaded Cable—For underground use in rigid conduit. It consists of solid and stranded conductors insulated with rubber and enclosed in a lead sheath for moisture protection.

G-E Moisture-resisting Grade Building Wire—Insulated with a moisture-resisting compound. Can be used in lieu of leaded cable where specified in Article 300, Section 3035, National Electrical Code.



G-E Parkway Cable—For underground use without rigid conduit. Made in four types designed to meet varying conditions of

dampness and possibilities of mechanical injury which might occur either during installation or because of heavy trucking, plowing, spading, settling of the soil, etc., after the cable has been laid. The four types include:

(1) RJ—An economical lightweight cable, protected against moisture and mechanical injury by multiple layers of asphalt-impregnated fabric, tape and jute wrappings.

(2) RLJ—An inexpensive cable, protected against moisture by a lead sheath, with asphalt-impregnated jute wrappings. Not to be used where there is danger of mechanical injury.

(3) RLJIJ—A superior cable sheathed with lead, then with an impregnated jute cushion, over which is BX interlocking armor which in turn is enclosed in an asphalt-impregnated jute wrapping.

(4) RLJFJ—Extremely resistant to mechanical injury and moisture, consisting of a lead sheath over the insulated conductors, with a double wrap of flat steel tape and asphalt-impregnated jute coverings.

4 METER

G-E Watthour Meter, outdoor or indoor type.

5 MAIN FEEDER CONDUCTORS

See Section No. 3, Service Entrance. G-E Cables suitable for use as Main Feeder Conductors are described in the foregoing section.

Specifications: Service Entrance

1 2 3 4 5

All service entrance materials: Shall comply with requirements of local utility company. Unless contrary to regulations the following types shall be used. Overhead Entrance, pole to building and between buildings: G-E Service Drop Cable or Weatherproof Wire. Building Entrance to distribution center: G-E Service Entrance Cable or Code Wire in G-E White Rigid Conduit. Underground Entrances, pole to distribution center: G-E 600-volt Lead-sheathed cable or G-E Moisture-resisting grade wire in G-E White Rigid Conduit, except where local regulations permit use of G-E Parkway Cable of type adapted to subsoil and installation conditions. Meter: G-E Watthour Meter, outdoor or indoor type.

6 MAIN DISTRIBUTION UNIT

Materials available include the following:



Trumbull Multi-breaker, surface type; available also for flush mounting.

Multi-breaker Load and Service Centers are furnished in boxes of two sizes (for installation in shallow partition:)

1 to 8 Poles: 6⅝ in. wide, 3 9/16 in. deep, 11⅛ in. long.

9 to 16 Poles: 12⅛ in. wide, 4 1/16 in. deep, 13⅛ in. long.

Mains are of 70-ampere capacity arranged for 3-wire 115/230, or 2-wire 115 volts, solid neutral a-c service. Branch Circuit Breakers are single-pole in 15-, 20-, 25-, 35-, and 50-ampere capacities to match commercial wire sizes. Mechanically connected handles serve where 3-wire, ground-neutral, 115/230-volt service is required.

Multi-breakers are supplied in code-gauge steel enclosures with ample knockouts. Flush (gray), Surface (black) covers.

Trumbull Fuse Puller Switches are available as follows:

Fuse-Puller Switches: 100-amp.; 60- and 100-amp.; and 30-, 60-, 100-amp. combinations — 3-pole — solid-neutral — 2 cartridge fuses — 125-250 volts, a.c.

Branch Circuits: (1-8 incl.) 30-amp. — solid-neutral — single-fusing (plug) — 125 volts.



Trumbull Fuse Puller Switch, Surface Type; also available for flush mounting.

1. The ampere unit is designed for use singly or in combination with the 30- and 60-ampere units, including plug-fuse branch circuits if desired.

2. The base is heavy porcelain. The fuse cap is bakelite.

3. To open switch, pull cover out by handle.

4. Fuse switch covers have "on" and "off" positions and are indicating.

5. Shields are removable without removing screws.

6. 30-ampere NEC fuse puller is usually used for water-heater circuits, but a water-heater or other circuit at 230 volts may be connected to any pair of branch plug-fuse terminals of opposite polarity.

7. Box finish—Surface mounting: black enamel.

Flush mounting: galvanized steel box; gray lacquer fronts.

8. Can be furnished with service channel twistout in top end (3 in. wide, 1 in. deep) upon request.

Specifications: Main Distribution Unit 6

The main distribution unit shall be of the proper size for the total connected load. It shall contain the main fuse or breakers, the range fuses or breakers (as desired), and the protective devices for the other fixed equipment in the basement. In all cases, the local utility shall be consulted in regard to type and meter sequence, etc., before the main distribution unit is installed.

7 SUB-FEEDER CONDUCTORS AND RACEWAYS

Conductors



G-E Rubber Insulated Wire and Cable is made in three standard grades of insulation, all with flame-retarding finish which will not support combustion and protects against moisture.

(a) Code Grade meets the requirements of National Electrical Code. The rubber insulation is black.

(b) Intermediate Grade has red rubber insulation of superior electrical and physical characteristics.

(c) 30% Performance Grade has green rubber insulation and will meet Code requirements after passing the oxygen bomb test —equivalent to 10 years of natural aging.

G-E Performite Wire and Cable is insulated with a long-life, super-aging compound containing not less than 35% of new rubber by weight. Recommended for extremely important circuits where uninterrupted operation is absolutely essential. Meets all requirements of Federal Specifications JC-106.

G-E Deltabeston Wires and Cables are made in a complete line of all-asbestos and part-asbestos insulations and in single or multiple conductors, for high-temperature work (120° F or higher) where rubber deteriorates rapidly, such as switchboards, stoves and ranges, motion picture machine, arc lamp cables, etc.

G-E Wires and Cables are made for many special purposes, including fixture wires and telephone wires. Their use is governed by standards of the N.E.C. for the particular condition.

Armored and Non-Metallic Sheathed Cables

These are wiring materials embodying protection against mechanical injury which are used when a conduit or other raceway is not employed. Primarily used for wiring in wood construction for ease and economy, and for minor alterations and branch circuit extensions in other buildings where the use of raceways is not practical.



G-E BX Armored Cable consists of one or more standard rubber-covered wires with a moisture-proofed wrapping covered by a flexible interlocking steel strip armor. Regularly made with "Code" Grade rubber insulation, but available on order in "Intermediate" and "30% Performance" Grades. Oval BX also available.

G-E BXL Lead-sheathed Armored Cable consists of rubber insulated conductors in a braided wax-saturated cotton jacket, sheathed in lead, and covered with BX type steel strip armor. Used in damp locations where BX is not suitable.



G-E BraidX Non-metallic Sheathed Cable consists of two or more rubber insulated conductors in a special protective covering having high resistance to mechanical injury. When required, G-E BraidX will be supplied containing an additional non-insulated copper conductor for bonding purposes.

Conduits and Raceways

Primarily used to provide mechanical protection for conductors, they have other special advantages. Wiring is done after the structure is completed, avoiding injury to the circuits during construction. Existing circuits may be withdrawn for repair or replacement, and new circuits can be installed, without other alterations. They are required in all fireproof buildings. Advantages for non-fireproof structures are obvious.



G-E White Rigid Conduit is the accepted standard raceway for use where conductors are buried in concrete or masonry, and for exposed wiring where maximum mechanical protection is required. It is thick-walled steel tubing, hot dipped galvanized and Glyptal-coated inside and out—connected with threaded fittings at all joints to prevent leakage. It also acts as an induction shield preventing interference, and provides an effective means of grounding.



G-E Black Rigid Conduit. This is heavy-wall steel tubing coated inside and out with a corrosion-proof elastic black enamel.



G-E Electrical Metallic Tubing, A thin-walled electro-galvanized steel raceway, provided with compression couplings, does not offer the same degree of protection as rigid conduit, but otherwise performs the same function. Subject to N.E.C. restrictions.

G-E Underfloor Fiberduct. A complete system of underfloor wiring is fully described on page 19.



G-E Galvanized Flexible Metal Conduit consists of interlocking flexible galvanized steel armor in sizes ⅜" to 3" I.D. It is used where construction requires a flexible conduit in a rigid raceway system, and to provide couplings for adjustable equipment, where conduits are required for temporary wiring, etc. Not approved for exterior work or for hazardous locations.

Specifications: Sub-feeder Conductors 7

All conductors: G-E Rubber-covered Wire, Flame-retarding and Moisture-resisting Finish, unless otherwise noted.

In fireproof buildings, new work: Conductors should be run in G-E White Rigid Conduit.

In non-fireproof buildings, new work: Unless otherwise shown on drawings, all sub-feeders and branch power circuits and branch sub-circuits should be BraidX or BX in dry locations or BXL in damp locations. Where conduit is shown on drawings, it should be G-E White Rigid Conduit.

Sub-feeders from main distribution unit to branch distribution unit should always be of a size large enough to assure good voltage conditions at the branch distribution unit, and should be at least one size larger than the final circuit conductors.

RECOMMENDATIONS FOR USE OF G-E RACEWAYS AND CONDUCTORS

Structural Conditions and Locations	Raceway (Use designated conductor as noted)	Conductor (Used in raceway except as noted)	Armored or Non-Metallic Sheathed Cable (Used without raceway)
FIREPROOF CONSTRUCTION			
1. General Light and Power Circuits			
Dry normal locations.	G-E Rigid Conduit required throughout except as here noted with G-E Flexible Conduits permitted for special conditions. G-E Fiberduct used for underfloor raceways.	G-E Rubber Insulated Conductors.	
Damp normal locations.		G-E Lead-sheathed Cables.	
High temperature locations.		G-E Deltabeston Conductors or Cables.	
*Hazardous locations.		G-E Lead-sheathed Cables.*	
Concealed extensions.	Raceway not mandatory for under-plaster extensions. May be G-E Electrical Metallic Tubing or G-E Oval Duct as required.	G-E Rubber Insulated Conductors.	G-E BX or Oval BX permitted for under-plaster extensions.
Surface extensions.		G-E Rubber Insulated Conductors.	G-E BX permitted for minor extensions.
2. Low Voltage Circuits			
Bells, thermostats, etc.	Raceway not required by code but recommended for protection and changes in circuits. G-E Rigid Conduit except where noted with G-E Fiberduct for underfloor raceways. G-E Flexible Conduit, Metallic Tubing and Oval Duct may be used as required. Separate these raceways from general light and power circuit raceways.	G-E Rubber Insulated Conductors.	Not required. Desirable for mechanical protection of important circuits when no raceway is used.
Public telephones.		Installed by Telephone Company.	Not required.
Private telephones.		G-E Telephone Wires.	Not required.
Protection, signaling and line voltage control devices.	G-E Rigid Conduit as above. G-E Armored Cable as alternate.	G-E Rubber Insulated Cables in conduit.	G-E BX Cables without conduit. G-E BraidX Cables without conduit.
Radio wiring, shielded circuits.	G-E Rigid Conduit as above with G-E BX Cable as alternate.	G-E Rubber Insulated Wires.	G-E BX Cables or Lead-sheathed Wires or Cable with sheath grounded.
Radio wiring, non-shielded circuits.	Do not use metallic raceway	G-E BraidX Non-metallic Sheathed Conductors or Cables.	G-E BraidX Non-metallic Sheathed Conductors or Cables.
NON-FIREPROOF CONSTRUCTION			
1. General Light and Power Circuits			
Dry normal locations.	No raceway required by code for normal conditions. For highest grade installations, G-E Rigid Conduit (with G-E Flexible Conduit for special conditions) is recomemnded.	G-E Rubber Insulated Conductors.	G-E BX Cables. G-E BraidX Non-metallic Sheathed Cables and knob and tube work.
Damp normal locations.		G-E Lead-sheathed Cables.	G-E BXL Cables.
High temperature locations.		G-E Deltabeston Wires or Cables.	G-E Deltabeston Cables.
*Hazardous locations.	(Rigid Conduit may be required.*)	G-E Lead-sheathed Cables.*	G-E BXL Cables.*
Concealed extensions.	G-E Electrical Metallic Tubing or Oval Duct as required. Alternate G-E BX and BXL Cables.	G-E Rubber Covered Wires or Cables, lead-sheathed where required, in conduit.	G-E Oval BX or BXL Cables.
Surface extensions.			G-E BX or BXL Cables.
2. Low Voltage Circuits			
Bells, thermostats, etc.	No raceway required by code for normal conditions. G-E Rigid Conduit (with G-E Flexible Conduit, Metallic Tubing and Oval Duct for special conditions) in highest grade installations.	G-E Rubber Insulated Wires or Cables	G-E BraidX Cables.
Public telephones.		Installed by Telephone Company.	Installed by Telephone Company.
Private telephones.		G-E Telephone Wires.	G-E Telephone Wires.
Protection, signaling and line voltage control devices.	G-E Rigid Conduit recommended as above, with G-E BX Cable as alternate; in either case for protection against tampering or other hazards.	G-E Rubber Insulated Wires or Cables in conduit.	G-E BraidX Cables without conduit. G-E BX Cable without conduit.
Radio wiring, shielded circuits.	G-E Rigid Conduit as above with G-E BX Cable as alternate.	G-E Rubber Insulated Conductors in conduit.	G-E BX or Lead-sheathed Wires or Cables with sheath grounded.
Radio wiring, non-shielded circuits.	No metallic conduit or sheathing permissible.	G-E Rubber Insulated Conductors.	G-E BraidX Non-metallic Sheathed Conductors or Cables.

*Consult requirements of National Electrical Code and local code for proper wiring for the particular hazardous condition at hand.

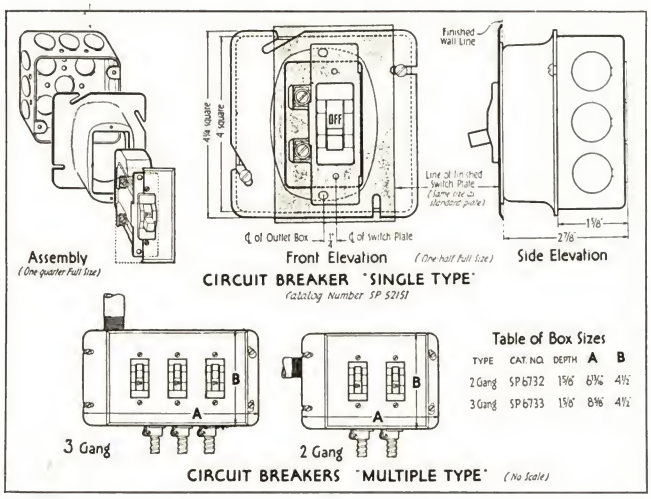
8 BRANCH DISTRIBUTION UNIT



Materials available for branch distribution control include the following:

G-E Branch-circuit Circuit Breakers—These small circuit breakers serve both as a means of overload protection for the branch sub-circuits and as master control switches governing groups of lighting or convenience outlets—occasionally both.

Circuit breakers of 15-, 20-, 25-, 30- and 35-ampere capacity, single-pole 125-volt, a-c and d-c, are made for flush mounting in standard outlet boxes with raised covers. Their appearance and general dimensions are shown in the accompanying illustration and diagrams. Bodies and operating tumbler are of brown Textolite. The tumbler takes three positions: *Down* to break the circuit manually; *center,* indicating that the circuit has been broken automatically by an overload or short circuit; *up,* to close the circuit (normal position in operation). When an overload occurs, service may be restored by throwing tumbler down to the "off" position, then fully up to the "on" position. If the overload condition remains, the circuit breaker will function even if the tumbler is held, and when the handle is released it will take the center position.



Trumbull Multi-breakers—See Section No. 6. All types of Trumbull Multi-breakers for homes and small buildings are described here.



Trumbull Multi-breaker, flush type, also available for surface mounting.



Trumbull Residence Panelboard—Enclosed Branch-circuit cutouts, flush type; available also for surface mounting.

Trumbull Residence Panelboards—Single Fusing—(2-12 circuits incl.)—3- or 2-wire Mains—2-wire Branches. These panelboards are designed for use with residence lighting systems to be located in a place more convenient for renewing fuses than on cellar meter board.

An abundance of ½-inch knockouts, located in ends, sides and back, and ½-inch to 1¼-inch knockouts (depending upon the number of circuits), in ends and sides for either flexible or rigid conduit, assure convenience in wiring.

Protective Shield safeguards the user from accidental contact with current-carrying parts while renewing fuses.

Circuit Index Card provided on door of each panel except the two-circuit. Removable front on flush-type panels overlaps the box on all sides. Box is galvanized steel. Each complete device is packed in an individual carton properly labeled. Panel is easily removed as a unit for pulling wires. Porcelain bases are used throughout.

Specifications:
Branch Distribution Unit 8

The branch loadcenters should be located as near centrally to the load on each floor as is possible. Circuit breakers Cat. No. GB115, GB120, GB125, GB130, GB135 with G-E square boxes with raised covers, Cat. No. SP52151 for single unit, Cat. No. SP6732 for pairs of circuit breakers, Cat. No. SP6733 for 3 and Cat. SP6734 for four units; or circuit breaker enclosures may be used—Cat. No. GB71F for single units and Cat. No. GB72F for pairs. Trumbull Multi-breaker loadcenters of proper capacity and Trumbull Residence panel boards can also be used. If circuit breakers are used in the branch unit, Circuit breakers should also be used in the Main Distribution Unit.

9 FINAL CIRCUIT CONDUCTORS

See Section No. 7, Sub-feeder Conductors. The wires and cables shown for sub-feeder use may be used in smaller sizes for Final Circuit Conductors.

Specifications:

Final Circuit Conductors ⑨

Final-circuit conductors to lighting and convenient outlets: It is recommended that the number of outlets to be served by each circuit be divided evenly and placed on 2, 3 or 4 sub-circuits, instead of being connected on one long run of conductor. These sub-circuits taken together will form a final branch circuit.

⑩ BOXES AND FITTINGS

Outlet and Switch Boxes—General Electric offers a complete line of high-grade outlet and utility boxes for every type of installation. These boxes are available with a wide assortment of covers.



3½-in. Octagonal Outlet Box SP24151



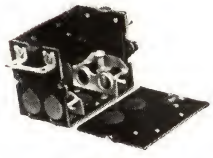
4-in. Square Outlet Box SP52151S



4-in. Round Outlet Box SP26625F



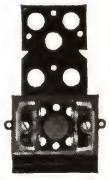
4-in. Long Utility Box SP5800



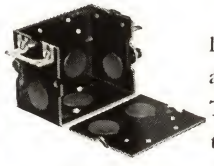
Switch Box for BX Cable SP6972



Switch Box for BraidX SP6974



Switch Box for BX old work SP7072



Switch Box for Rigid Conduit SP6971

Fittings—Each type of raceway requires special fittings for installation. Therefore, General Electric supplies all necessary fittings and accessories for commercial, industrial and residential wiring. Below is shown a representative group.



½-in. Locknut SP141



Grounding Device SP825



Entrance Cap SP1525



½-in. Bushing SP122



BX Squeeze Connector SP6125



BraidX Connector SP7101



"Tite-Bite" Connector SP5300



½-in. Strap SP1276



E.M.T. Coupling SP2550



E.M.T. Connector SP4550



Entrance Cable Connection SP1402C



Entrance Cable Connector SP3206B

Specifications: Junction Boxes ⑩

Pull Boxes and Junction Boxes: G-E Stamped Steel Boxes with solid covers, such as Cat. No. SP52151.

Floor boxes in wood joist floors: G-E Utility Outlets, Cat. No. SP8000.

Outlet boxes for wall or ceiling fixtures: G-E Octagonal or Square Boxes of suitable size such as Cat. No. SP54151 or Cat. No. SP52151, mounted on suitable hangers, if in stud construction, such as Cat. No. SP6602; except where construction conditions require shallow boxes such as Cat. No. SP56121.

Switch Boxes: G-E Sectional Switch Boxes, such as Cat. No. SP6972.

⑪ OUTLETS

This classification to save space includes lampholders, convenience outlets and switches.

G-E Lampholders

G-E Lampholders are available with porcelain, brass or Textolite shells, rated at 250 or 660 watts, 250 volts. Brass lampholders are made in two basic types—fluted-catch and threaded-catch. Textolite sockets have all moving parts sealed for complete protection. There are no linings to char. These sockets have a fine appearance of molded brown Textolite, with a highly lustrous finish. They are not only appropriate for use in rough surroundings but may also be used to advantage wherever the brown Textolite color is acceptable. Textolite sockets have the caps and bodies fastened together by a threaded ring. G-E Lampholders are available with four types of operating mechanisms: Keyless, key, pull, push.



GE2708—Pull-type—Insulated chain, Textolite Body, Threaded Catch-ring



GE1210—Key-type—Snap-catch, Porcelain Body



GE770—Medium Base, Keyless Brass Body, Fluted Catch

Specifications:

Outlets ⑪ — Lampholders

In all locations: Not subject to handling or strains: Textolite Lampholders except where brass shells are designated and these should be Brass Shell Fluted-catch Lampholders. Subject to frequent handling or strain: Textolite Lampholders except where brass shells are designated and these should be Brass Shell Threaded-catch Lampholders. Subject to dampness; G-E Textolite Lampholders.

G-E Convenience Outlets

G-E Convenience Outlets are made of Textolite with smooth faces so designed that the prongs of a plug slip easily into the proper slots.

SELECTION TABLE

Purpose and Condition	Type and Description	Typical Catalog No.
GENERAL UTILITY WALL OUTLETS		
Where only one appliance will be served—refrigerator, ventilating fan, etc.	Single outlet—side-wired. Single outlet—top-wired.	GE2740 GE2533
Where more than one appliance may be served—lamps, vacuum cleaners, radios, etc.	Twin outlet—side wired. (Also available in ivory.) Twin outlet—top wired.	GE2679 GE2534
Where switch control of one circuit is desired, leaving the other uninterrupted for electric clocks, etc.	Twin outlet—4 binding screws—separate feeds—separate ground.	GE2902
Where various appliances will be served, for some of which polarity may be required or desired, others having conventional 2-pronged caps.	Double-duty twin outlets for conventional 2-pronged cap or 3-pronged polarity cap: (a) With terminal screw for ground wire. (b) Without terminal screw.	 GE2988 GE2989
For heavy-duty service on radiant heaters, light power equipment, etc.	Heavy-duty polarity outlets, with 2 or 3-pronged polarity cap: (a) With 2-pole cap (GE1370). (b) With 3-pole cap (GE2758).	 GE1367 GE2762
Floor outlets.	Single recessed outlet furnished complete with floor plate and 2 flush plugs (non-watertight).	GV2E1
Wall-hung electric clocks	Single recessed outlet. Furnished complete with special hook for clock.	GE2942
Wall-hung electric fans.	Single outlet, furnished complete.	GE3035
Outdoor outlets for open porches, floodlights Christmas decorations, etc. Used on walls only.	Single outlet. Furnished complete with rubber seal gasget and cadmium plated flush plate and cap. (Weatherproof cap for appliance cord, GE2960.)	GE2959
Radio outlets.	Power outlet and polarity radio outlet. With or without flush plate and special radio polarity cap. For doublet antenna, use GE3053.	GE2997
OUTLET AND SWITCH COMBINATIONS		
Switch and outlet in same device.	Single outlet and double pole switch.	GE2736
Switch, outlet and pilot light to indicate when circuit is in use, in one device.	Single outlet, single pole switch and pilot light; (Pilot light alone for use with any outlet or switch GE2822—receptacle only).	GX3A5
Outlet and pilot light in one device.	Single outlet and 1 pilot light.	GX3A3
Pilot light and switch in one device. To indicate when remote outlet is in use.	Twin outlet and 1 pilot light.	GX3A4 GE2734



Twin Convenience Outlet—Top-wired, GE2534



Twin Convenience Outlet—Side-wired, GE2679. This same outlet-top-wired, GE2534.



Twin Outlet with one outlet controlled by a Switch, the other outlet uninterrupted—four binding screws, separate feeds, separate ground—GE2902



Single Outlet—Side-Wired GE2740. This same Outlet top-Wired, GE2533



Double-duty Twin Convenience Outlet GE2988



Fan Hanger Outlet GE3035



Outdoor Weatherproof Outlet, GE2959. Protecting Cap, GE2960



Electric Wall Clock Hanger Outlet (complete) GE2942



Radio Outlet GE3052

Specifications:

Outlets (11) — Convenience Outlets

Top-wired Twin Convenience Outlets such as GE2534, except where circuit is designed to serve but one appliance, when an equivalent single outlet should be installed.

Outdoor Outlets: GE2959.

Portable Fixture Outlets: For fans, etc., G-E Hanger Outlet GE3035.

Electric Clock Outlet: G-E Electric Wall Clock Hanger Outlet, Cat. No. GE2942.

Radio Outlet: G-E Electric Radio Outlets, Cat. No. GE3052.

Switch and Convenience Outlet Plates: Unless brass plates are designated, all switch and outlet plates should be Textolite. Where brass plates are designated they should be .060" thick ("struck-up") in service and secondary living or public areas, and solid plates, .100" thick, in main living and public areas, finished as elsewhere specified.

G-E Flush Plates for Convenience Outlets and Switches

MATERIALS

Standard flush plates are made of brass, Textolite (black or brown) and ivory compound—in a variety of forms and combinations to meet all possible requirements.

Brass Outlet Plates are made in three grades, all normally furnished in standard brush brass finish. They may be obtained in a variety of finishes including colors. These include polished brass, embossed or stamped designs, colored lacquered finishes in single tones or in mottled and variegated color effects, and plated or oxidized finishes. Consult the General Merchandising Catalogue for special finishes carried in stock; others are obtainable on special order.

Solid Brass Plates, 0.100" thick, are the highest standard grade, and are for use where brass plates are demanded in highest grade installations.

Heavy Stamped Plates are 0.060" thick, ("struck-up") and are suitable for general and high grade installations.

Stamped Brass Plates, 0.040" thick ("struck-up"), are the lightest made, and are for use only where economy is the primary consideration.

PLATE SELECTION CHART

NOTE: Plates shown are typical single gang plates (excepting GE2814 and Circuit-Breaker Plates) and may be combined in multiple gang plates in any desired combination. Catalogue numbers are for brown Textolite and brush brass .060 in. except GE2256 which is made .100 in. thickness only.

PLATE	DESCRIPTION	TEXTOLITE	BRASS
	Single Switch Plate	GE2316	GE1741
	Single Outlet Plate	GE2314*	GE1787
	Twin Convenience Outlet Plate	GE2315*	GE1788
	Telephone Outlet Plate with compound bushing — Single	GE2349	GE2140
	Telephone Outlet Plate with compound bushing — Double	GE2542	GE2098
	Triple Switch Plate	GE2693	GE2727
	Double Switch Plate	GE2691	GE2726
	Single Switch Plate	GE2893	GE2957
	Pilot Light Plate. Used with GE2822 receptacle. (Available also with various colored round and rectangular bulls-eyes for receptacle GE853)	GE2823	GE1787
	Combination Switch and Convenience Outlet Plate, (Available also for heavy duty device and for horizontal or vertical two-gang assemblies)	GE2737	GE2738
	Combination Pilot Light, Switch and Convenience Outlet Plate, two-gang	GE2814	
	Combination Switch and Pilot Light Plate	GE2735	GE2738
	Circuit Breaker Plate — Single	GB51	GB61
	Circuit Breaker Plate — Double	GB52	GB62
	Circuit Breaker Plate — Triple	GB53	GB63
	Circuit Breaker Plate — Quadruple		GB64

* Special gang plates available in brass only

Textolite Outlet Plates. These have become the accepted standard because of durability, fine appearance and freedom from tarnish and discoloration. Brown is the standard color. They are also available in black. Ivory Compound plates are available for standard flush switches up to and including 3-gangs. They are also supplied for convenience outlets, single gang; and for combination outlet and switch, double gang.

Special Plates. Special brass plates 0.100″ thick can be obtained with round corners and round edges, with round corners and bevelled edges, with square edges, and with raised edges. On special order, flush plates may be obtained made from other metals such as bronze and aluminum. Identifying words or numbers will be engraved on metal plates when so ordered.

SIZES

All standard flush plates for single gang switches or outlets are 2¾″ by 4½″. Dimensions of multiple gang plates may be had on request.

Horizontal Multiple Gang Plates. A single plate covering a single switch or outlet unit measures 2¾″ by 4½″ and may be used either vertically or horizontally according to the position in which the outlet box is mounted. Horizontal plates for multiple gang switch or outlet units have the height constant, the width being increased 1$\frac{13}{16}$″ for each additional gang or unit.

Vertical Multiple Gang Plates. These plates have a constant width of 2¾″, the length being increased 3⅝″ for each additional unit.

Combination Gang Plates. Multiple gang plates may be obtained to fit any combination of switch, convenience outlet and pilot light units, the only limitations being the number of switches or outlets obtainable in a single gang unit. The maximum number of switches in a single gang or unit is three. Convenience outlets are provided in single or double capacity.

Circuit-Breaker Plates. These plates are available in both single type and multiple gangs.

G-E Switches



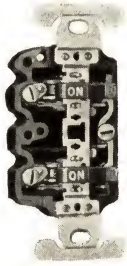
Single-pole Switch, Composition Body, GE2842.



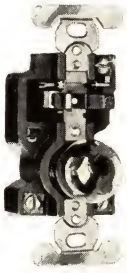
Single-pole Switch, Heavy-duty type, GE2923.



Mercury Switch, Composition Body, GE2756.



Combination Switch Device. Two Single-pole Units, GE2907.



Combination Switch and Pilot Light, GE2734.



Combination Switch and Convenience Outlet, GE2736.



Combination Switch and Pilot Light, GX3A1.



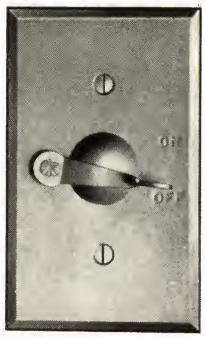
Time-Saver Combination Switch and Convenience Outlet, GX2A1.



G-E Sphinx Mercury Switch, GE3008.



Automatic Door Switch, GE273.



Outdoor Flush Switch, GE3024.

TYPES

This material is arranged to facilitate choice of G-E Switches available for the control of electric light and power circuits.

Switches used in normal lighting and power circuits are of three types:

Tumbler Switches. These have largely superseded other types because of simpler construction, ease of operation, and pleasing appearance.

Rotary Snap Switches. These are seldom used on lighting circuits except with exposed wiring or surface raceways. More generally used to control small motors and circuits in electric ranges.

Push-button Switches. Though still made, this type is practically obsolete.

TUMBLER SWITCHES

G-E Tumbler Switches are made in both surface and flush-mounting styles, the former being used only with surface wiring where appearance is not a factor. Flush-mounting styles are available in the following grades:

Porcelain Body. A general purpose switch having the switch mechanism mounted in a porcelain box with a snap fiber cover. Also available with ivory handle.

Composition Body. The mechanism is completely enclosed in a moulded composition box—fully protected from tampering and mechanical damages. Also available with ivory handle.

G-E Sphinx Mercury Switches. Silent. Durable. Single-pole, double-pole, 3- and 4-way switches available. Textolite casings. Are enclosed in glass-sealed metal button. Textolite handles in brown or ivory.

Heavy-duty Switches. The mechanism is totally enclosed in a Textolite box. Their size requires the use of deep outlet boxes. Used on circuits up to 30 amp. capacity for heavy-duty service.

Tumbler Switches. Made in several styles to meet the various requirements of standard wiring systems. The use of single and double-pole switches, and of the three-way and four-way switches is fully covered in the Switch Selection Table (see page 15) with diagrammatic hook-ups. Other styles for specific service conditions are the following:

Outdoor Switches. For open porches, floodlights, Christmas decorations, etc. Single pole G-E 3024; 3-way G-E 3039. Complete with rubber seal gasket and cadmium flush plate.

G-E Electrolier Switches. These permit the control of two or three circuits, in sequence or combination, with one switch.

G-E Lock Switches are operated by a key, and may be locked "on" or "off," thus limiting the control to authorized persons.

G-E Mercury-break Switches. In these noiseless switches a mercury element takes the place of a snap mechanism.

G-E Combination Switch Assemblies consist of from one to three switches mounted in the same moulded composition body, fitting standard switch boxes. Possible arrangements in these assemblies are shown in the table on page 15. (See "Combination Switch Assemblies" in "Switch Selection Table.") These assemblies save space, reduce the number of outlet boxes required, and may be used to increase the extent of switch control in existing systems.

G-E Switch and Outlet Combinations in one device are designed for convenience and space saving and to increase the effectiveness of circuit control. They are available in the following units:

Switch and Convenience Outlet.
Switch and Pilot Light.
Switch, Pilot Light and Convenience Outlet.

Special Switches are made in a variety of forms. These include automatic door switches, miniature tumbler switches, "pony" back-connected surface tumbler switches, and canopy switches for lighting fixtures of rotary, snap and pull types in all required forms. Also a complete line of heavy-duty tumbler switches for panel or box cover mountings.

G-E Step-saver Switches. In all rooms having more than one door, 3- or 4-way switches (as required) should be located at each door to control one major source of light in each room. They should also be used to control lights in halls and passages, on different floors of a residence, between detached buildings and wherever it is desirable to control light from separate entrances and exits.

Specifications:

Outlets 11 — Switches

In all locations except as noted below: G-E Single-pole Compound Box Flush Tumbler Switches, such as GE2842. If porcelain base switches are desired and are so designated on drawings or elsewhere, they should be such as Cat. No. GE2841.

Step-saver Switches: Should be used to control at least one light in every space served by two doors more than ten feet apart in all stair halls, between main buildings and garage or outbuildings, and should be G-E Three-way Flush Tumbler Switches, such as GE2593 with equivalent Four-way Switches as required.

Silent Switches: To be used where designated on drawings (in living rooms or bedrooms, hospital rooms, etc., where silent operation is desired) and should be G-E Sphinx Mercury Flush-Tumbler Switches Cat. No. GE3008.

Double-pole Switches: Should be used on circuits controlling appliances drawing more than 1500 watts, and on circuits serving convenience outlets designed for ungrounded appliances drawing over 1500 watts and should be equivalent to Cat. No. GE2846.

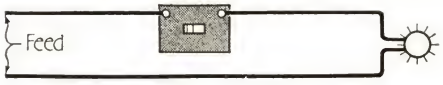
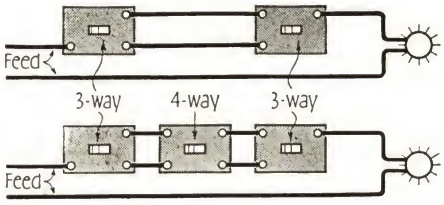
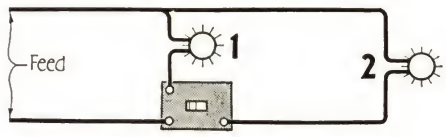
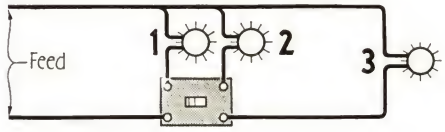
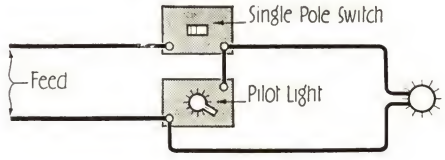
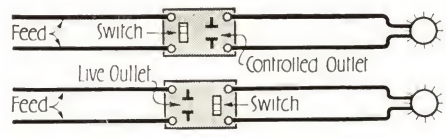
Heavy-duty Switches: Where indicated on drawings should be G-E Heavy-duty Tumbler Switches, Cat. No. GE2923 type as required.

Special Switches: Combination Switches: Should be Cat. No. GE2903 or any combination in this series as required: Switch and Pilot Light Combination Cat. No. GE2734, or Switch and Outlet Combination Cat. No. GE2736 or their equivalent, where indicated on drawings.

Door Switches: G-E Door Switches; either Cat. No. GE273 where light is on when door opens, or Cat. No. GE274 where light is on when door is closed; mounted in G-E Door Switch Boxes, Cat. No. SP6597.

Weatherproof Switches: Should be GE3024 when exposed to outdoor weather conditions.

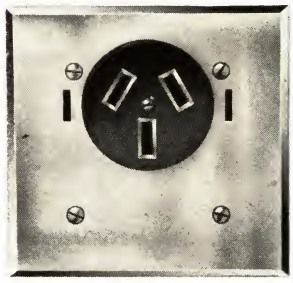
G-E SWITCH SELECTION TABLE

Wiring Diagrams	Purpose	Type and Description of Switch	Typical Catalog Nos. Porcelain Base	Typical Catalog Nos. Composition Base and Heavy Duty*
 SINGLE POLE SWITCH	**GENERAL PURPOSE SWITCHES: SINGLE UNITS; ONE TO EACH SWITCH BOX**			
	To control:			
	One circuit from one point.	Single Pole — controls one wire (live side) only of a single circuit.	GE2841	GE2842 GE2923*
		Double Pole—controls both sides of a single circuit. Required for 3-wire circuits. Recommended where appliances of over 1000 watts will be used.	GE2845	GE2846 GE2924*
		Silent switch—for hospitals, nurseries, bedrooms, etc., where noise must be eliminated. Single Pole only.		GE2756
		Lock-Switch, key operated—for limited control in public rooms, etc. Single Pole listed. Also made in double pole, 3-way and 4-way types.	GE1755	GE2670
		Automatic door switch—for closets, telephone booths, etc. Installed in door jamb. Bumper plate included. To turn light on when door opens. To turn light on when door closes.		 GE273 GE274
 3 AND 4-WAY SWITCHES	One circuit from two points.	Three-way switch—controls single circuit from 2 remote points. Two switches required.	GE2514	GE2593 GE2925*
	One circuit from three or more points.	Four-way switch—controls single circuit from 3 remote points. Used with 2 three-way switches. Each additional control point requires an additional four-way switch.	GE2515	GE2596
	Two circuits with one switch.	Electrolier switch—controls two circuits in sequence by repeated throws of a single tumbler. Requires deep outlet box.	GE2518	
	Three circuits with one switch.	Electrolier switch—controls three circuits in sequence or combination.	GE2519	
	COMBINATION SWITCH ASSEMBLIES TO CONTROL ONE, TWO OR THREE CIRCUITS FROM ONE SWITCH BOX**			
	To control:			
	Two circuits with common feed.	2 single pole units. 1 single pole unit—1 three-way unit.		GE2907 GE2909
 2-CIRCUIT ELECTROLIER	Two circuits with separate feed.	2 single pole units. 1 single pole unit—1 three-way unit. 2 three-way units. 1 single pole unit—1 four-way unit. 1 three-way unit—1 four-way unit.		GE2908 GE2910 GE2911 GE2912 GE2913
 3-CIRCUIT ELECTROLIER	Three circuits with common feed.	3 single pole units. 2 single pole units—1 three-way unit.		GE2914 GE2916
	Three circuits with separate feed.	3 single pole units. 2 single pole units—1 three-way unit. 1 single pole unit—1 three-way unit—1 four-way unit. 1 single pole unit—2 three-way units.		GE2915 GE2917 GE2918 GE2936
	One circuit. Matching two— and three - tumbler-units in appearance.	1 single pole unit. 1 three-way unit. 1 double pole unit. 1 four-way unit.		GE2903 GE2904 GE2905 GE2906
 SWITCH AND PILOT	**SWITCH, CONVENIENCE OUTLET AND PILOT LIGHT COMBINATIONS**			
	To control:			
	One circuit with pilot light indicator.	Single pole switch and pilot light. (Pilot light alone for use with any switch—GE2822—receptacle only.)		GE2734
	One circuit with outlet in same device.	Double pole switch and outlet. May be installed with outlet live or under switch control.		GE2736
	One circuit, with outlet and pilot light.	Single pole switch, outlet and pilot light. Each unit independent. Numerous combinations possible.		GX3A5
 SWITCH, CONVENIENCE & PILOT		Switch independent. Pilot light controlled by outlet.		GX3A6

*Heavy-duty switches. Capacity up to 30 amperes.

**Any G-E Combination switch in one, two or three unit assemblies can be used to replace any standard flush switch in a single switch box. This permits ready increase of switch control in existing systems and the grouping of switch units with a minimum of cover plate area.

12 RANGE WIRING



Flush Range Receptacle GE3036 with Plate GE3037



Range Outlet—GE3000 Cover Receptacle Ground Clip 39x328

Rapid advances in the use of electricity for cooking, make it advisable to consider the installation of a special range circuit during construction or major alterations to avoid later inconvenience and expense, even though immediate use of an electric range may not be contemplated. An installation consists of the following:

Special Power Circuit. This is of 5 to 10 kw. capacity, run directly from the Main Distribution Control Unit. This circuit may be installed to serve both range and hot water heater by use of a load limiting device to cut off the heater when range is in use.

Range Devices. G-E Range devices consist of a special triple-pole, 50-amp., 250-volt outlet or receptacle and a flexible cord set of approved design. Range outlets should be located so as to be accessible when the range is in place and allow the range to be placed close to the wall.

Flush Receptacle. GE3036 is recommended for new work or high grade old work where appearance is an important factor. Equipped with grounding clips and slots for use where 4-wire connection set is required.

Surface Receptacle. GE3000 is for surface mounting only and is recommended for old or new work where low cost is of paramount importance. Black Textolite cover fits snugly on to one-piece Textolite base. Designed so that service cables to outlet can be brought through floor or the baseboard. If fourth wire ground is required use grounding clamp.



Three Wire Unicords. (Cat. No. GE3003) are recommended for use where no fourth wire grounding of the range frame is required. See local authorities for grounding rules. G-E Unicords consist of an all-rubber plug moulded to 38-inch length of flexible rubber 3-conductor cable. Four-wire Cord Sets are also available (Cat. No. GE3050).



Range Outlet with "Unicord" Set GE3001

Specifications: Range Wiring 12

Range Circuit: G-E Range Receptacle, and G-E Unicord, or a G-E Range Connection Cable, depending on grounding requirements. Non-shielded circuits. BraidX single conductors or cables.

Check List for G-E Home Wiring

This list is a reminder of all the items that may be needed in the design of residential wiring. It may be used partly or totally. It is designed particularly for use in laying out G-E Home Wiring.

To avoid repetition in several parts of this check list, reference is made to the following rules:

RULE 1. Twin convenience outlets, in rooms where arrangement of furniture, etc., may vary, should be placed so that no point along the floor line, in any unbroken wall space, is more than six feet from an outlet in that space. However, no outlet is required in any space, the major portion of which is covered by a door when opened. In halls, passages, etc., one twin convenience outlet should be provided for each 12 feet of length or major fraction thereof, with at least one outlet in each hall or passage.

RULE 2. "Step-Saver" switches (3-way and 4-way as required) should be provided in halls, stairways, or rooms having two or more doors, and on lighting circuits extending between buildings, to control at least one light source from each entrance-exit point. Function of rooms, etc., and traffic through them rather than the distance between doorways should determine the need for these switches. Their purpose is to permit continuous passage in either direction, turning lights on and off, without retracing steps.

RULE 3. Lighting outlets for installed fixtures should be provided in all rooms, whether or not portable lamps are chiefly used. Those not initially used may be covered with a blank flush cover. Good lighting practice demands general lighting in addition to local lighting. One ceiling outlet is adequate for most rooms. Two outlets are required if the room area is more than 300 square feet, or if the length is more than one and a half times the width. Wall, bookcase, mirror or additional ceiling outlets should be provided where local or decorative lighting may be needed.

PROTECTIVE SYSTEMS

One fixed light in each room and exterior floodlights controlled by master switch in bedroom.

Burglar and fire alarm circuits should employ G-E Rigid Conduit for mechanical protection and to prevent tampering and deliberate damage. Thermostat, humidistat, water level indicator and such circuits do not require protection.

It is advisable to serve protective alarm systems from separate transformers to avoid overloading and voltage losses.

LOCATION	CONVENIENCE OUTLETS	LIGHTING OUTLETS	SWITCHES AND CIRCUIT BREAKERS	SPECIAL OUTLETS
Main and side entrances	Outdoor outlets for decorative lighting. See "Terraces"	Overhead or side	Locking switch for outside and vestibule lights - 3 or 4-way	Push button for door bell Illuminated house number
Service entrances		Overhead or side		Push button for door bell
Open porches	Outdoor outlets - See Rule 2	Overhead or side wall	Switch inside of door leading to porch	Push button for annunciator Telephone outlet plug
Main Entrance Hall, including Vestibule and Stair Hall For coat closet see "Closets" For powder-room or lavatory, see "Bathrooms"	See Rule 2 Clock hanger outlet Fan hanger outlet	See Rule 3	Single-pole, 3 or 4-way switches (see Rule 3) controlling lights in: Main Entrance (exterior) and Vestibule; Main, Upper and Stair Halls; Cellar Stairway (with pilot); Gardens, Driveway, Gates, etc. Flush Circuit breakers protecting subcircuits in main living areas and all outside lighting circuits	Telephone outlet Organ or radio reproducer outlets
Main Living Rooms Library or Study Music Room Reception Room	Follow Rule 1 throughout Clock hanger outlet Fan hanger outlet Floor outlets for free standing tables, pianos, etc. Flush outlets in mantles, etc., for luminous ornaments	See Rule 3 Consider outlets for cove lighting; panel, beam, cornice and soffit lighting; "spot" or local lights for dominant features, paintings, etc.	Local control of fixed lighting outlets. See also Rule 3 Consider switch control of one side of twin convenience outlets serving portable lights	Telephone connection Radio outlets Push button or pull cord for servants' annunciator Thermostat, humidistat or air-conditioning control
Dining Rooms and Breakfast Rooms	Follow Rule 1 Floor outlet under table Clock hanger outlet Fan hanger outlet	See Rule 3 Ceiling outlet over table essential	Control of fixed lighting outlets by 3 or 4-way switches at living and service entrances	Table or floor button to kitchen annunciator Telephone outlet plug Radio outlets
Enclosed Porches, Conservatories, etc.	See Rule 1 Fan hanger	See Rule 3	Local control switch at entrance	Push button for servants' call Telephone outlet plug Radio outlets
Kitchens, Pantries and Service Areas	Single outlets at refrigerator, dishwasher, garbage destructor Twin outlets (double-duty type) over all work tops Fan outlet - flush or hanger type Clock hanger outlet	Ceiling outlet supplemented by soffit lights at sink and range Combination lamp and convenience outlets over each work top	Local switch control for each wall or soffit light Wall switch control of ceiling light (see Rule 2) Switch controlling kitchen ventilator fan Flush circuit breakers protecting all kitchen and service area sub-circuits	Special range outlet Special water heater outlet Annunciator box, bells and buzzers Telephone Radio outlet
Service Entrance Hall or Vestibule	See Rule 1	Ceiling outlet	Switch for vestibule light (see Rule 2) 3-way switches controlling service entrance lights and entrance lights at garage and adjacent outbuildings	
Halls, Stairs and Passageways	See Rule 1	See Rule 3	See Rule 2 Flush circuit breakers protecting branch sub-circuits serving adjacent areas	Telephone outlets Push buttons or pull cords to servants' annunciator
Master Bedrooms Dressing rooms Nurseries	Follow Rule 1 throughout Fan hanger outlet	See Rule 3 with special emphasis on side lights at mirrors, lights to illuminate wardrobes in dressing rooms and night light circuits	Consider silent (Mercury type) switches throughout, at least for night light circuits See also Rule 2 and "Protective Lighting" below	Heavy-duty outlet for radiant heater (fireplace or portable) Radio outlets Push button or pull cord to servants annunciator Telephone outlets
Servants' Bedrooms	See Rule 1	See Rule 3	Wall switch for lights	Night call bell House telephone
Bathrooms, Lavatories	Twin outlets at lavatory for toilet appliances Heavy-duty outlets (polarized) for radiant heater, sun lamps, etc.; out of reach of bathtub	Ceiling outlet Side lights at mirror Waterproof shower light Night light	Single-pole switches for lights Double-pole switches for heavy duty circuits; out of reach of the bathtub	Push button to servants' annunciator Consider exhaust fan over shower or toilet compartment
Closets (all types)		Ceiling or side wall outlets	Automatic door switch or switch and pilot light on room side, or pull chain on light fixture	
Storerooms Attics Open Cellars	Twin outlets as required by size for vacuum cleaners, etc.	Ceiling or side wall as required for lighting all parts	Switches for all lights (with pilot if at door). See also Rule 2)	
Utility Room Furnace and Equipment space	One or more for trouble lights, vacuum cleaner, repair tools, etc. (Preferably double-duty type)	Ceiling or side wall as required	Totalizing Unit, preferably with circuit breakers Flush circuit breaker for local branch sub-circuits if required Single-pole switches controlling all lights. See also Rule 2	Low voltage transformer Power outlet for invalid elevator, trunk lifts, etc. Power outlets for air conditioning equipment, oil burners, pumps, blowers, etc.
Laundry	Double-duty or heavy-duty outlets for washer, ironer, flat irons, dryer, etc.	Ceiling or side outlet for (general illumination) Lights over all fixed equipment	Single-pole controlling lights Double-pole as required for heavy-duty circuits	Exhaust fan outlet Extension call bell
Recreation Rooms Game Rooms	See Rule 1 Fan hanger outlet Clock hanger outlet	Ceiling or side for general illumination Special lighting for billiards, ping pong, etc.	Single-pole for general illumination Separate switches for special lighting See also Rule 2	Heavy-duty outlet for radiant heater (fireplace or portable Telephone outlet Radio outlet Push button for servants' call
Terraces and Gardens; Shelters, Garden Houses, Boat Houses, etc.	Outdoor outlets on walls, columns, etc., for portable garden lights, hedge clippers, etc.; and in shelters for appliances and portable lights.	Fixed garden lights Fountain and pool lights Fixed lights in shelters as required	3 or 4-way switches controlling lighting of adjacent areas and grounds with master control from main house	In shelters: Push button for main house annunciator Telephone outlets
Work Rooms and Hobby Shops	Double-duty or heavy-duty with local switch control for all power machines, motors, etc.	See Rule 3 Special lights according to nature of equipment	Wall switches for general lights Pull switches for local lights	Ventilating fan House telephone

Telephone, Radio and Low Voltage Wiring

This page contains data on special and miscellaneous wiring not a direct part of the general light and power requirements for the home or other building.

LOW-VOLTAGE WIRING MATERIALS

These include circuits for call bells, annunciators, alarm systems, thermostats, etc., as well as intercommunicating telephone systems and radio wiring, which should all be considered in any electrical layout. Except for smaller wire sizes, materials are similar to those used for general light and power circuits. Materials designed for these services are indicated below.

Call Bell and Annunciator Wiring. For voltages less than 32, G-E Code Grade Rubber Insulated Wire is used. Raceways of G-E Rigid Conduit or Metallic Tubing permit repairs or rewiring to be made readily.

Transformers. One or more should be installed near the distribution center. Selection of transformers is dependent on the following:

a. the voltage and frequency of the primary current;

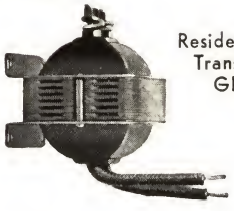
b. the voltage required in the secondary current;

c. the total wattage requirements of the low voltage systems so operated. This is generally advisable as a margin of safety, even though systems so served operate intermittently and independently.

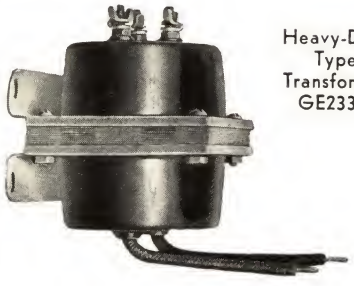
TYPICAL TRANSFORMERS

Primary Current		Secondary Current	Capacity Watts	Type	Catalog No.
Volts	Cycles	Volts			
110	50-140	8	10 to 5	Residence	GE2332
110	50-140	4/8/12/16 20/24	50	Heavy duty	GE2333
110	50-140	4/8/12/16 20/24	100	Heavy duty	GE2334
220	50-140	8/16/24	50	Heavy duty	GE2336
220	50-140	8/16/24	100	Heavy duty	GE2337

Protective and Control Systems. Burglar and fire alarm circuits should employ G-E Rigid Conduit for mechanical protection and to prevent tampering and deliberate damage. Thermostat, humidistat, water level indicator and such circuits do not require protection. It is advisable to serve protective alarm systems from separate transformers to avoid overloading and voltage losses.



Residence Type Transformer GE2332



Heavy-Duty Type Transformer GE2336

TELEPHONE WIRING

Branch telephones and intercommunicating systems need special consideration. While telephone companies install wiring materials (at the owner's expense) for all public and branch systems, raceways of G-E Rigid Conduit, or Fiberduct for underfloor extensions, should be provided (unless surface wiring is acceptable) to permit extending or altering the system. Telephone company engineers will assist in determining sizes and distribution of materials.

Private intercommunicating systems require G-E Telephone Wires, preferably in G-E Rigid Conduit.

RADIO WIRING

In single or multiple residences and institutions, etc., provision should be made for radio wiring. G-E Rigid Conduit provides a raceway adapted to various systems, permitting rewiring to keep pace with developments in radio and television, and functioning as a shield or ground. The manufacturer of the system employed should be consulted on the layout.

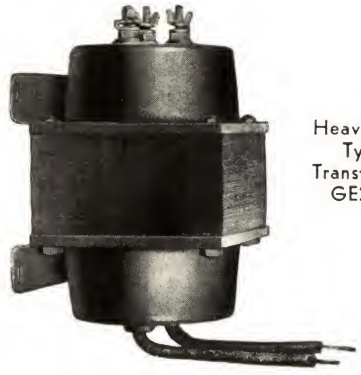
Multiple Antenna Systems permit the use of a single antenna to serve a number of receiving sets, and require an antenna and a ground circuit to each receiver outlet. G-E Rigid Conduit permits flexibility in wiring and rewiring.

Audio-frequency Distribution Systems consist of independently tuned receiving sets which distribute audio-frequency impulses to reproducers in different locations, and require antenna and ground circuits to the central receiving sets only. From these sets Rigid Conduit raceways carry audio-frequency circuits to each speaker outlet, where switch and volume control permits selective reception through any of the central receivers. Dynamic or power speakers require a power outlet and switch. With such systems G-E Rigid Conduit acts also as a shield. BX Armored Cable, with the sheathing grounded, is suitable for single circuits, but does not readily permit rewiring.

Remote Control Wiring for Radios consists of multi-wired cables from a central receiver, each wire being connected to a position on individual control panels. Special outlet plates permit connection to the flexible cables leading to the portable control panel. The use of G-E Rigid Conduit provides flexibility in wiring and rewiring.

PRIVATE LOW-VOLTAGE LIGHTING CIRCUITS

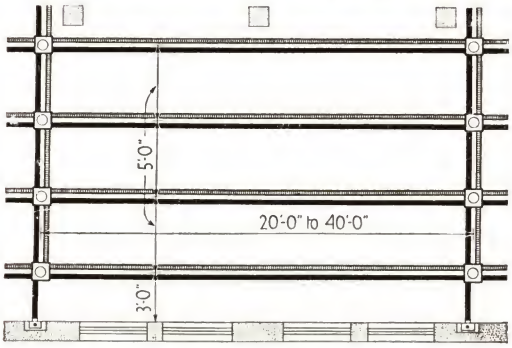
Private lighting plants operate at voltages of 50 and under. To prevent voltage losses, conductors, switches and sockets must be capable of carrying higher amperages than for 110-115 volt circuits. 600-watt sockets and receptacles, and heavy duty conductors and switches should be used.



Heavy-Duty Type Transformer GE2337

G-E Fiberduct Underfloor Raceway Systems

CARRY LIGHT, POWER, SIGNAL AND TELEPHONE WIRES TO ANY PART OF FLOOR AREA



Double Grid Layout. Similar in floor area effectiveness to the Single Grid Layout but with ducts laid in pairs. Provides separate raceways for light and power wiring and for telephone and signal distribution.

Certain areas such as stenographic rooms, office service rooms with tabulating and bookkeeping equipment, etc., often require more electrical service than is permissible in a double grid layout. In such cases a triple grid layout may be used or any required number of ducts may be laid parallel under the area to be served.

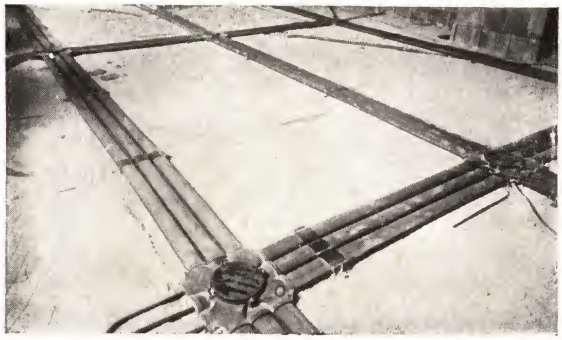
FIBERDUCT IS FLAT, OVAL TUBING

G-E Fiberduct for underfloor wiring is a flat oval tubing of impregnated fiber that resists corrosive influences encountered in actual service. It forms a system of non-corrodible raceways in concrete floors and provides a practical means of bringing wires for light, power, telephone and signals to any part of the floor area. It permits new outlets to be safely and economically installed at any time and at any point along the duct system. Fiberduct is 1½" by 3¾" O.D.

INSTALLATION

In slab construction: Set junction boxes on the structural slab, bring the top of adjusting sleeve to the approximate grade of the finished cement floor by means of the leveling screws, and anchor them with a cement grout. Run Fiberduct sections from box to box, adjusting leveling screws to bring top of duct 1" below finished floor grade. (¾" depth of concrete is minimum N.E. Code requirement.) Anchor all couplings in place with a cement grout. Then set adjusting sleeves in junction boxes precisely to finished floor grade before pouring fill.

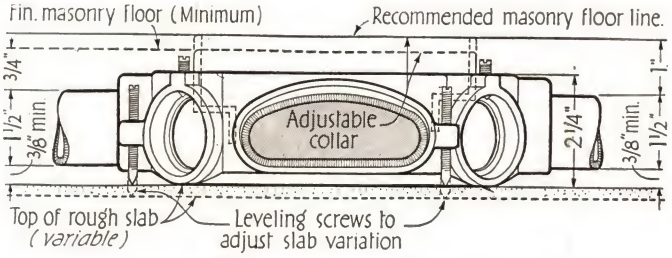
In monolithic construction the installation is essentially the same. Soft iron tie wires are used in place of cement grout to secure boxes and fitting to the steel or the form. When junction boxes are located over joists in pan construction, they are usually set on cross strip of bar iron laid from pan to pan.



Multiple Duct Assembly

PRELOKAYLETS-SPECIALLY CONCEALED OUTLETS

Prelokaylets are special concealed outlets which can be attached to the Fiberduct at predetermined locations before the raceway is laid. They are adapted to use in stenographic and clerical rooms, office service areas and the like, where the approximate location of desks and equipment can be predetermined with reasonable accuracy.



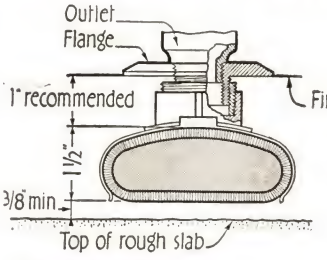
Elevation of Junction Box

Prelokaylets do not penetrate the cement floor, and do not require flanges and floor plates until access to the circuits in the raceway is required at a Prelokaylet location; but they are readily accessible at any time with a minimum of inconvenience and expense. They are located through the finished floor by a magnetic or meter-type finder which "spots" the magnetized pin in the head of each Prelokaylet.

These outlets may be clamped to the Fiberduct sections on the job, or they can be set at the factory at specified spacings.

JUNCTION BOXES

Subfloor fittings include Junction Boxes in single, double and triple types—also floor and wall elbows, cross under-fittings and other items required to complete installation.



Detail of Prelokaylet



1" Insert
SP9250



Beveled Floor Flange
SP9310-A



Double Duct Junction Box



Telephone Outlet
SP9340-A

Lighting Outlet Duplex
SP9360-A



Triple Junction Box



DISTRIBUTORS

Ala., Birmingham—Matthews Electric Supply Co.
Ala., Montgomery—Matthews Electric Supply Co.
Ariz., Phoenix—G-E Supply Corporation
Ark., Little Rock—G-E Supply Corporation
Cal., Fresno—G-E Supply Corporation
Cal., Long Beach—G-E Supply Corporation
Cal., Los Angeles—G-E Supply Corporation
Cal., Oakland—G-E Supply Corporation
Cal., Sacramento—G-E Supply Corporation
Cal., San Diego—G-E Supply Corporation
Cal., San Francisco—G-E Supply Corporation
Colo., Denver—G-E Supply Corporation
Colo., Denver—Hendrie & Bolthoff Mfg. & Sup. Co.
Colo., Pueblo—Hendrie & Bolthoff Mfg. & Sup. Co.
Conn., Bridgeport—G-E Supply Corporation
Conn., Hartford—G-E Supply Corporation
Conn., New Haven—G-E Supply Corporation
Conn., Waterbury—G-E Supply Corporation
D. C., Washington—G-E Supply Corporation
Fla., Jacksonville—G-E Supply Corporation
Fla., Miami—G-E Supply Corporation
Fla., Tampa—G-E Supply Corporation
Ga., Atlanta—G-E Supply Corporation
Ga., Savannah—G-E Supply Corporation
Idaho, Boise—G-E Supply Corporation
Ill., Chicago—G-E Supply Corporation and branches
Ill., Chicago—Hawkins Electric Co.
Ill., Chicago—Metropolitan Electrical Supply Co.
Ill., Decatur—Morehouse & Wells Co.
Ill., Peoria—Universal Electric Co.
Ill., Quincy—Crescent Electric Supply Co.
Ill., Rockford—G-E Supply Corporation
Ill., Springfield—G-E Supply Corporation
Ind., Evansville—G-E Supply Corporation
Ind., Fort Wayne—Protective Electric Supply Co.
Ind., Indianapolis—G-E Supply Corporation
Ind., Muncie—G-E Supply Corporation
Ind., Richmond—Richmond Electric Co.
Ind., South Bend—South Bend Electric Co.
Ind., Terre Haute—Advance Electric Co.
Ia., Burlington—Crescent Electric Supply Co.
Ia., Davenport—Crescent Electric Supply Co.
Ia., Des Moines—G-E Supply Corporation
Ia., Dubuque—Crescent Electric Supply Co.
Ia., Mason City—Crescent Electric Supply Co.
Ia., Sioux City—G-E Supply Corporation
Ia., Waterloo—Crescent Electric Supply Co.
Kan., Wichita—G-E Supply Corporation
Ky., Ashland—Ben Williamson & Co., Inc.
Ky., Lexington—G-E Supply Corporation
Ky., Louisville—G-E Supply Corporation
La., New Orleans—G-E Supply Corporation
La., Shreveport—G-E Supply Corporation
Me., Bangor—G E Supply Corporation
Me., Portland—G-E Supply Corporation
Md., Baltimore—G-E Supply Corporation
Mass., Boston—G-E Supply Corporation
Mass., Boston—Milhender-Afes Elec'l Co.
Mass., Lynn—Des Roberts Elec'l Sup. Co.
Mass., New Bedford—Mendell Electric Supply Co., Inc.
Mass., Springfield—G-E Supply Corporation
Mass., Worcester—G-E Supply Corporation
Mich., Battle Creek—Central Electric Supply Co.
Mich., Detroit—G-E Supply Corporation
Mich., Detroit—Frank C. Teal Company
Mich., Grand Rapids—G-E Supply Corporation
Mich., Kalamazoo—G-E Supply Corporation
Mich., Lansing—G-E Supply Corporation
Mich., Muskegon—Fitzpatrick Electric Supply Co.
Mich., Saginaw—G-E Supply Corporation
Minn., Duluth—G-E Supply Corporation
Minn., Minneapolis—G-E Supply Corporation
Minn., Minneapolis—Peerless Elec'l Co.
Minn., St. Paul—G-E Supply Corporation
Miss., Jackson—G-E Supply Corporation
Mo., Joplin—G-E Supply Corporation
Mo., Kansas City—G-E Supply Corporation
Mo., St. Louis—G-E Supply Corporation and branches
Mont., Billings—G-E Supply Corporation
Mont., Butte—G-E Supply Corporation
Neb., Omaha—G-E Supply Corporation
N. H. Manchester—G-E Supply Corporation
N. J., Atlantic City—Kay Electric Supply, Inc.
N. J., Jersey City—G-E Supply Corporation
N. J., Morristown—G-E Supply Corporation
N. J., Newark—G-E Supply Corporation
N. J., Newark—E. B. Latham Co.
N. J., Paterson—G-E Supply Corporation
N. J., Trenton—Tab Electric Supply Co., Inc.
N. M., Albuquerque—Hendrie & Bolthoff Mfg. & Sup. Co.
N. Y., Albany—Havens Electric Company
N. Y., Binghamton—Southern Tier Elec. Supply Co.
N. Y., Buffalo—G-E Supply Corporation
N. Y., Elmira—Southern Tier Electric Supply Co.
N. Y., Glens Falls—Glens Falls Electric Supply Co.
N. Y., Jamaica—Central Queens Elec. & Lighting Fixture Corp.
N. Y., New Rochelle—Royal Eastern Elec. Supply Co.
N. Y., New York—G-E Supply Corp. and branches
N. Y., New York—E. B. Latham Co.
N. Y., New York—Royal Eastern Elec. Supply Co. (also Borough of Brooklyn and Long Island City)
N. Y., Niagara Falls—G-E Supply Corporation
N. Y., Poughkeepsie—Electra Supply Co., Inc.
N. Y., Riverhead, L. I.—Central Queens Elec. & Lighting Fixture Corp.
N. Y., Rochester—G-E Supply Corporation
N. Y., Syracuse—Gou'd-Farmer Co.
N. Y., Utica—Langdon & Hughes Electric Co.
N. Y., White Plains—G-E Supply Corporation
N. C., Charlotte—G-E Supply Corporation
N. C., Raleigh—G-E Supply Corporation
N. Dak., Fargo—Dakota Electric Supply Co.
O., Akron—G-E Supply Corporation
O., Canton—Furbay-Sommer Electric Co.
O., Cincinnati—G-E Supply Corporation
O., Cleveland—G-E Supply Corporation
O., Columbus—G-E Supply Corporation
O., Dayton—G-E Supply Corporation
O., Toledo—G-E Supply Corporation
O., Youngstown—G-E Supply Corporation
O., Zanesville—The Roekel Co.
Okla., Oklahoma City—G-E Supply Corporation
Okla., Tulsa—G-E Supply Corporation
Ore., Portland—G-E Supply Corporation
Pa., Allentown—G-E Supply Corporation
Pa., Erie—G-E Supply Corporation
Pa., Harrisburg—Raub Supply Co.
Pa., Johnstown—G-E Supply Corporation
Pa., Lancaster—Raub Supply Co.
Pa., Philadelphia—G-E Supply Corporation
Pa., Philadelphia—Elliott-Lewis Electrical Co., Inc.
Pa., Pittsburgh—G-E Supply Corporation
Pa., Reading—G-E Supply Corporation
Pa., Scranton—G-E Supply Corporation
Pa., Williamsport—Lowry Electric Co., Inc.
R. I., Providence—G-E Supply Corporation
S. C. Columbia—Perry-Mann Electric Company
S. C., Greenville—Graves Electric Supply Co.
S. D., Deadwood—Hendrie & Bolthoff Mfg. & Sup. Co.
Tenn., Chattanooga,—G-E Supply Corporation
Tenn., Kingsport—Kingsport Electric Co., Inc.
Tenn., Knoxville—G-E Supply Corporation
Tenn., Memphis—G-E Supply Corporation
Tenn., Nashville—G-E Supply Corporation
Texas, Abilene—G-E Supply Corporation
Texas, Armarillo—G-E Supply Corporation
Texas, Dallas—G-E Supply Corporation
Texas, El Paso—G-E Supply Corporation
Texas, Ft. Worth—G-E Supply Corporation
Texas, Houston—G-E Supply Corporation
Texas, San Antonio—G-E Supply Corporation
Utah, Salt Lake City—G-E Supply Corporation
Va., Norfolk—G-E Supply Corporation
Va., Richmond—G-E Supply Corporation
Va., Roanoke—G-E Supply Corporation
Wash., Seattle—G-E Supply Corporation
Wash., Spokane—G-E Supply Corporation
Wash., Tacoma—Home Electric Company
W. Va., Bluefield—Bluefield Supply Co.
W. Va., Charleston—Virginian Electric, Inc.
W. Va., Wheeling—Gee Electric Company
Wis., Appleton—G-E Supply Corporation
Wis., La Crosse—G-E Supply Corporation
Wis., Madison—Crescent Electric Supply Company
Wis., Milwaukee—G-E Supply Corporation

SECTION 23

CONTINUED ⟶

HARVEY HUBBELL, INC.

Manufacturers of Electrical Wiring Devices

MAIN OFFICE AND FACTORY

BRIDGEPORT, CONN.

BRANCH OFFICES

CHICAGO, ILL. NEW YORK, N. Y. SAN FRANCISCO, CALIF.

THE COMPANY AND ITS PRODUCTS

This Company was one of the pioneers in the manufacturing of electrical wiring devices, many of which have become standard for the industry.

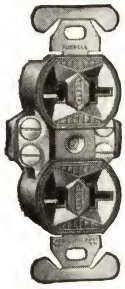
Hubbell products have a national distribution and can be secured through electrical supply houses throughout the country.

Approved wiring devices, including Hubbell T-Slot and Polarized Receptacles of all types, Brass Shell and Porcelain Sockets, Toggle Switches, Plugs, Receptacle and Plug Caps.

Practically every product listed on these pages is also obtainable with higher carrying capacity, so that the Hubbell Line will furnish the proper style and type device to meet any standard requirement.

HUBBELL T-SLOT CONVENIENCE OUTLETS

10 Amperes, 250 Volts—15 Amperes, 125 Volts



No. 7626



No. 9595



No. 9595-I with
No. 7094-I Plate
(Ivorine)



No. 9571
No. 9573
With separate feeds



No. 7550



Nos. 7135-7136
With 3¼" or 4" box covers



Nos. 7260-7137
With 3¼" or 4" box covers

Cat. No.	Description	Cat. No.	Description	Cat. No.	Description
7626	Highest quality—top wired (Bakelite)	7093	Single receptacle plate (Bakelite)	7260	Duplex 3¼" cover
7626-I	Top wired, W.E. (Ivorine)	7093-I	Single receptacle plate (Ivorine)	7137	Duplex 4" cover
9595	Standard quality, side wired (Bakelite)	7094	Duplex receptacle plate	7550	Side wired, narrow ears (Bakelite)
9595-I	Side wired, W.E. (Ivorine)	7094-I	Duplex receptacle plate (Ivorine)	7590	Side wired, wide ears (Bakelite)
*9571	With two feeds and one return, wide ears	7135	Single 3¼" cover	7590-I	Standard quality, side wired, wide ears (Ivorine)
*9573	With two feeds and two returns, wide ears	7136	Single 4" cover		

*If desired in "Ivorine" material, add letter "I" to catalogue number.

HUBBELL SPECIAL PURPOSE OUTLETS

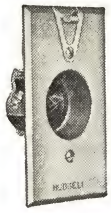
10 Amperes, 250 Volts—15 Amperes, 125 Volts



No. 7792



No. 7794



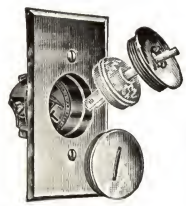
No. 7707



No. 7739



No. 7711



No. 7797



No. 7710



No. 8891

Cat. No.	Description	Cat. No.	Description	Cat. No.	Description
7792	Outdoor flush receptacle Complete unit, including receptacle, plate, rubber mat and attached protecting cap	7713	.060" brass plate for outlet and pilot light	8886	Single outlet and switch S.P. without plate
		7729	Ornamental bakelite plate for outlet and pilot light	8891	Single outlet and switch S.P. with bakelite plate
7794	Outdoor flush receptacle, same arrangement as No. 7792 except 3 wire	7739	Switch and bullseye combination S.P. with .050" brass plate	8887	Single outlet and switch D.P. with .060" brass plate
7707	Electric clock hanger outlet with .040" plate	7797	Floor outlet, bevel edge, .060" Plate	8892	Single outlet and switch D.P. with bakelite plate
7711	Convenience outlet, pilot light with 7713 brass plate	7798	Floor outlet, square edge, .060" Plate	7710	Fan hanger outlet complete with yoke support and brass plate
7712	Convenience outlet and pilot light receptacle only	7956	Switch and bullseye combination D.P. with .060" brass plate	7714	Fan hanger outlet complete with stud support and brass plate
		7953	Switch and bullseye combination 3-way with .060" brass plate		
		8885	Single outlet and switch S.P. with .060" brass plate		

HUBBELL SURFACE PLUG RECEPTACLES AND CAPS

10 Amperes, 250 Volts—15 Amperes, 125 Volts



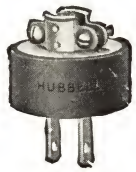
No. 5617



No. 5618



No. 7056
Steel armored



No. 9754
Rubber



No. 7162
Steel armored

Cat. No.	Description
5617	Concealed base, screws $1\frac{17}{32}$" centers
5618	Cleat base, screws $1\frac{13}{32}$" centers

Cat. No.	Description	Cord hole, in.
	Armored "Cord Grip" Caps	
7056	Tandem blade	$\frac{9}{16}$
7057	Parallel blade	$\frac{9}{16}$
7183	Tandem blade	$\frac{5}{8}$
7184	Parallel blade	$\frac{5}{8}$
7162	Double "T" blade	$\frac{9}{16}$

Cat. No.	Description	Cord hole in.
	"Cord Grip" All-rubber	
9752	Tandem blade	$\frac{9}{16}$
9753	Tandem blade	$\frac{5}{8}$
9754	Parallel blade	$\frac{9}{16}$
9756	Parallel blade	$\frac{5}{8}$
9759	Double "T" blade	$\frac{9}{16}$
9761	Double "T" blade	$\frac{5}{8}$

HUBBELL NON-REVERSIBLE POLARIZED RECEPTACLES AND CAPS—2 WIRE

10 Amperes, 250 Volts—15 Amperes, 125 Volts



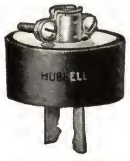
Nos. 5566-B, 5552-B



No. 7270



No. 5885



No. 9970
No. 9971



No. 7092
No. 7241



No. 6730
No. 6720

Cat. No.	Description
5885	Porcelain wall receptacle concealed base, screws $1\frac{17}{32}$" on centers
5566-B	Flush receptacle, black bakelite—10 amp.
5552-B	Flush receptacle, black bakelite—20 amp.

Cat. No.	Description
7270	Receptacle and round box cover No. 5566 with $3\frac{1}{4}$" cover
7271	Receptacle and round box cover No. 5566 with 4" cover
9970	"Cord-Grip" rubber plug cap with cord hole $\frac{19}{64}$" to $\frac{9}{16}$"
9971	"Cord-Grip" rubber plug cap with cord hole $\frac{5}{8}$"

Cat. No.	Description
7092	Armored "Cord-Grip" plug cap with cord hole $\frac{19}{64}$" to $\frac{9}{16}$"
7241	Armored "Cord-Grip" plug cap with cord hole $\frac{5}{8}$"
6730	Composition plug cap without cord-grip—10 amp.
6720	Composition plug cap without cord-grip—20 amp.

All of above are also available in 20-ampere 250-volt rating.

HUBBELL POLARIZED RECEPTACLES AND CAPS—3 WIRE

10 Amperes, 250 Volts—15 Amperes, 125 Volts



Nos. 6047, 6059



No. 6149



No. 6051 or 6810



Nos. 7275, 7277



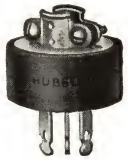
No. 7051



No. 7053



No. 7055
No. 7089



No. 9750
No. 9977

Cat. No.	Description
6047	Concealed, wall type receptacle—10 amp., 250 v.
6059	Concealed, wall type receptacle—20 amp., 250 v.
6051	Flush type composition receptacle for standard single outlet plate
7189	Flush type composition receptacle grounded
9051	Flush type porcelain receptacle
9051-G	Flush type porcelain receptacle grounded
7275	Flush type receptacle with 4" round box cover
7275-G	Flush type receptacle with 4" round box cover—grounded

Cat. No.	Description
7277	Flush type receptacle with 4" round box cover—20 amp. 250 v.
6810	Flush type porcelain receptacle,—20 amp. 250 v.
6810-G	Flush type porcelain receptacle grounded—20 amp., 250 v.
7051	Duplex flush type black bakelite receptacle—10 amp., 250 v.
7051-G	Duplex flush type black bakelite receptacle, grounded—10 amp., 250 v.

Cat. No.	Description
7053	Combination duplex bakelite receptacle with standard double T-slot outlet on one end, and 3-wire outlet on the other. Each outlet wired independently.
6149	Bakelite plug cap—10 amp.
7055	"Cord-Grip" steel covered composition plug cap, cord hole $\frac{9}{16}$"—10 amp.
7089	"Cord-Grip" steel covered composition plug cap, cord hole $\frac{5}{8}$"—20 amp.
9750	Rubber "Cord-Grip" cap, cord hole $\frac{9}{16}$"—10 amp.
9977	Rubber "Cord-Grip" cap, cord hole $\frac{5}{8}$"—20 amp.

HUBBELL FLUSH SWITCHES


No. 9801


No. 7901


No. 7701


No. 9701

Designed Specially for Type "C" Lamps (with "T" Rating)

FULLY ENCLOSED BAKELITE BASE

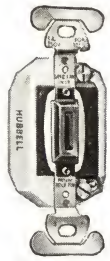
Cat. No.	Description	Cat. No.	Description
With Bakelite Handles		**With Live Rubber Handles**	
9801	S.P., Ind., 5 amp. 250 v. T.	7701	S.P., Ind., 5 amp., 250 v. T.
9802	D.P., Ind., 10 amp., 250 v. T.	7702	D.P., Ind., 10 amp., 250 v. T.
9803	3-way, 5 amp., 250 v. T.	7703	3-way, 5 amp., 250 v. T.
9933	3-way, 10 amp., 250 v. T.	7704	4-way, 2 amp., 250 v. T.
9804	4-way, 2 amp., 250 v. T.	7705	S.P., Ind., 20 amp., 125 v. T.
9805	S.P., Ind., 20 amp. 125 v. T.	7706	D.P., Ind., 20 amp., 125 v. T.
9806	D.P., Ind., 20 amp., 125 v. T.		
With Metal Handles		**Locking Type**	
7901	S.P., Ind., 5 amp., 250 v. T.	9701	Single pole, 5 amp., 250 v. T.
7902	D.P., Ind., 10 amp., 250 v. T.	9702	D.P., 10 amp., 250 v. T.
7903	3-way, 5 amp., 250 v. T.	9703	3-way, 5 amp., 250 v. T.
9623	3-way, 10 amp., 250 v. T.	9613	3-way, 10 amp., 250 v. T.
7904	4-way, 2 amp., 250 v. T.	9704	4-way, 2 amp., 250 v. T.
7905	S.P., Ind., 20 amp., 125 v. T.	9705	S.P., 20 amp., 125 v. T.
7906	D.P., Ind., 20 amp., 125 v. T.	9706	D.P., 20 amp., 125 v. T.
		8965	Key

Note: Above ratings at 250 volts may be doubled in most cases when used at 125 volts. Bakelite and brass plates are available for above switches.


No. 8801


No. 7801


No. 7601


No. 8961

Standard Quality Switches for General Installation

NU-BLAC PORCELAIN BASE

Cat. No.	Description	Cat. No.	Description
With Bakelite Handles		**With Live Rubber Handles**	
8801	S.P., Ind., 5 amp., 250 v.	7601	S.P., Ind., 5 amp., 250 v.
8941	S.P., Ind., 20 amp., 250 v.	7602	D.P., Ind., 10 amp., 250 v.
8942	D.P., Ind., 20 amp., 250 v.	7603	3-way, 5 amp., 250 v.
8802	D.P., Ind., 10 amp., 250 v.	7604	4-way, 2 amp., 250 v.
8803	3-way, 5 amp., 250 v.	7605	S.P., Ind., 20 amp., 250 v.
8804	4-way, 2 amp., 250 v.		
With Metal Handles		**Locking Type**	
7801	S.P., Ind., 5 amp., 250 v.	8961	Single pole, 5 amp., 250 v.
7802	D.P., Ind., 10 amp., 250 v.	8962	Double pole, 10 amp., 250 v.
7842	D.P., Ind., 20 amp., 250 v.	8963	3-way, 5 amp., 250 v.
7803	3-way, 10 amp., 250 v.	8964	4-way, 2 amp., 250 v.
7804	4-way, 2 amp., 250 v.	8965	Key
7805	S.P., Ind., 20 amp., 250 v.		

Note: Above ratings at 250 volts may be doubled in most cases when used at 125 volts.

HUBBELL SPECIAL PURPOSE SWITCHES


No. 8121


No. 9801-1


No. 8901 Switch
No. 8911 Plate



No. 7981


No. 2971
No. 2923



No. 8171



No. 5020

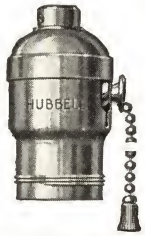
Cat. No.	Description	Cat. No.	Description
Round Metal Handle Flush Toggle Composition Base—Brass Handle		**Ivorine Handle Flush Toggle Bakelite Base—For Type "C" Lamps**	
8121	Single pole, 5 amp., 250 v.	9801-I	S.P., Ind., 5 amp., 250 v.
8122	Double pole, 10 amp., 250 v.	9802-I	D.P., Ind., 10 amp., 250 v.
8132	Double pole, 20 amp., 250 v.	9803-I	3-way, 5 amp., 250 v.
8123	3-way, 5 amp., 250 v.	9804-I	4-way, 2 amp., 250 v.
8124	4-way, 2 amp., 250 v.	9805-I	S.P., Ind., 20 amp., 125 v.
Ivorine Handle Flush Toggle "Nu-Blac" Porcelain Base Standard Quality		**Ivorine Plates**	
8801-I	S.P., Ind., 5 amp., 250 v.	7095-I	Single switch plate
8941-I	S.P., Ind., 20 amp., 250 v.	7121-I	2-gang switch plate
8802-I	D.P., Ind., 10 amp., 250 v.	7122-I	3-gang switch plate
8803-I	3-way, 5 amp., 250 v.	7138-I	4-gang switch plate
8804-I	4-way, 2 amp., 250 v.		

Cat. No.	Description	Cat. No.	Description	Amperes 125 v.	Amperes 250 v.
Recessed Flush Toggle Switches Handle—Porcelain Base		**Surface Toggle Switches Metal Covers—Metal Handles**			
8901	S.P., Ind., 5 amp., 250 v.	8171	S.P., solid	5	3
8902	D.P., Ind., 10 amp., 250 v.	8191	S.P., slotted	5	3
8903	3-way, 5 amp., 250 v.	8421	S.P., solid	10	5
8904	4-way, 2 amp., 250 v.	8431	S.P., slotted	10	5
8911	.060" brass plate	8173	3-way, solid	5	3
		8193	3-way, slotted	5	3

Std. Type	Lock Type	Description
Heavy Duty Flush Toggle Switches Fully Enclosed Bakelite Base		
2971	2971-L	S.P., 20 amp., 250 v.
2972	2972-L	D.P., 20 amp., 250 v.
2973	2973-L	3-way, 20 amp., 250 v.
2923	2923-L	S.P., 30 amp., 250 v.
2924	2924-L	D.P., 30 amp., 250 v.
2925	2925-L	3-way, 30 amp., 250 v.

Cat. No.	Description
Ceiling Pull Switches with Outlet Box Covers	
5020	S.P. for 3¼ in. box
5026	S.P. for 4 in. box
Outdoor Weatherproof Switches	
7981	S.P., 5 amp., 250 v.
7982	D.P., 10 amp., 250 v.
7983	3-way, 5 amp., 250 v.
7984	4-way, 2 amp., 250 v.

HUBBELL BRASS SHELL SOCKETS AND CEILING RECEPTACLES



No. 3618—⅛" Cap
No. 3620—Pendant
250 W., 250 V.



No. 3664—⅛" Cap
No. 3665—⅜" Cap
No. 3666—Pendant
250 W., 250 V.

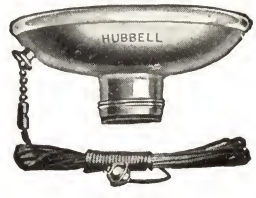


No. 3667—⅛" Cap
No. 3668—⅜" Cap
No. 3669—Pendant
600 W., 250 V.



No. 4100
For 3¼" and 4" Boxes

No. 4102
For 3¼" Box Only
660 W., 250 V.



No. 4104
For 3¼" and 4" Boxes
250 W., 250 V.

HUBBELL RANGE RECEPTACLES AND CAPS

50 Amperes, 250 Volts—3 Wire



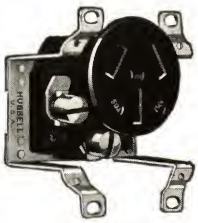
No. 7970
Black Bakelite, Single Screw, Solderless Terminals



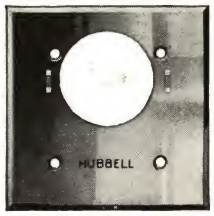
No. 7914—
38″ Cord Set. 2 No. 6 and 1 No. 8 Wires
No. 7915—
38″ Cord Set. 2 No. 8 and 1 No. 10 Wires
No. 7916—38″ Cord Set. 3 No. 6 Wires
No. 7923—38″ "BX" Cable Set. 3 No. 8 Wires
No. 7924—38″ "BX" Cable Set. 3 No. 6 Wires
No.7971—Ground Strap for No. 7970 Receptacle



No. 7977 Range Cap
Black Bakelite



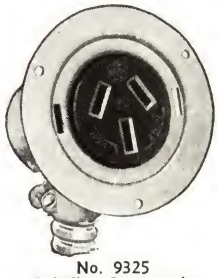
No. 7974
Flush Receptacle



No. 7975 .040″ Brass Plate
No. 7976 .060″ Brass Plate

No. 9325—50 Amperes, 250 Volts—3-Wire Power Outlet

With Solderless Terminals

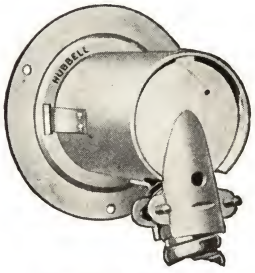


No. 9325
Bakelite Receptacle

This receptacle does not require a separate outlet box. It is designed to be mounted through a 3⅛-in. hole drilled in the wall. Receptacle body is of black bakelite. Regularly supplied with grounding slots through plate to accommodate caps with independent ground clips as on Nos. 7923, 7977, 7952, 9304 and 9305. Also takes all standard 50-amp., 250-volt 3-wire caps without grounding clips.

This new design supersedes and takes place of original design listed on page 21, Catalog No. 23.

The angle cable grip clamp will accommodate BX, Greenfield or other metal sheathed cable, or non-metallic cable, measuring .750 in. to 1.187 in.



Rear View No. 9325

HUBBELL *Twist-Lock* DEVICES

20 Amperes, 250 Volts—2, 3 or 4 Wire



No. 7210, 2-Wire
No. 7310, 3-Wire
No. 7410, 4-Wire
Porcelain Receptacles



No. 7102, 2-Wire
No. 7311, 3-Wire
No. 7411, 4-Wire
"Cord-Grip" Caps
Metal Covered



No. 7101, 2-Wire
No. 7313, 3-Wire
No. 7413, 4-Wire
"Cord-Grip" Connectors



No. 8808, 2-Wire
No. 7327, 3-Wire
No. 7408, 4-Wire
Flush Motor Plugs



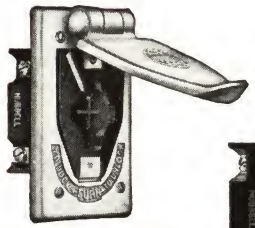
No. 9763 2-Wire
No. 9965, 3-Wire
No. 9967, 4-Wire
"Cord-Grip" Cap
Rubber



No. 7216, 2-Wire, 3¼″ Cover
No. 7517, 3-Wire, 4″ Cover
No. 7417, 4-Wire, 4″ Cover

Hubbellock CIRCUIT BREAKING DEVICES

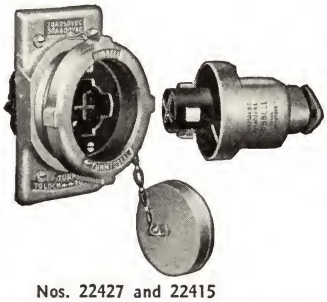
4 Wire—20 Amperes, 250 Volts D.C.—30 Amperes, 600 Volts A.C.
3 Wire—10 Amperes, 250 Volts D.C.; 460 Volts A.C.—20 Amperes, 125 A.C. or D.C.
20 Amperes, 250 Volts D.C.—30 Amperes, 600 Volts A.C.



No. 20403 Receptacle with No. 20416 Plate



No. 20403
4-Wire Polarized Receptacle



Nos. 22427 and 22415
4-Wire Watertight Receptacle, Polarized Cord Connector and Cap



Nos. 22414 and 22415
Assembled



Nos. 23000-23007
Assembled to Box



No. 23000
3-Wire Polarized Receptacle

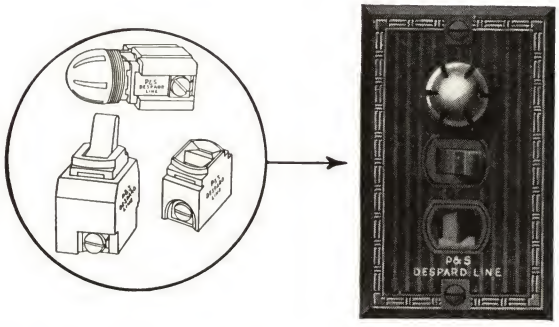
PASS & SEYMOUR, INC.

Manufacturers of National Electrical Code Standard Wiring Devices
Solvay Station, SYRACUSE, N. Y.

BRANCH OFFICES
NEW YORK, 71-73 Murray Street
CHICAGO, 605 W. Washington Boulevard

THE P&S-DESPARD LINE OF MODERN WIRING DEVICES

A Complete Flush Wiring System



THREE DEVICES IN A SINGLE PLATE

One of the most important advantages of these new devices is that *one, two or three* devices may be installed in the space formerly required for a single switch. All these devices are interchangeable and require only one wall plate.

60,000 POSSIBLE COMBINATIONS FROM TWENTY BASIC INTERCHANGEABLE DEVICES

From only 20 basic devices and the wall plates listed, over 60,000 different combinations of wiring devices can be made. These few devices, due to their interchangeability, are so versatile that a uniform wiring system composed of identically designed devices is now possible in the entire residence or commercial structure.

The pilot light combination (shown at left) illustrates only one of the many space saving possibilities of this modern wiring device line.

A Few Suggested Combinations



Flush Pilot and Switch



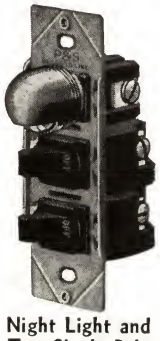
Pilot Light and Two Single Pole Switches



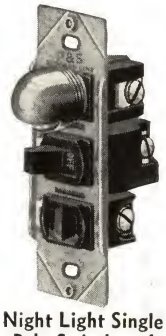
Convenience Outlet with Pilot Light Indication



Single Pole Switch and Convenience Outlet



Night Light and Two Single Pole Switches



Night Light Single Pole Switch and Convenience Outlet



2 Single Pole Switches



Radio Outlet Aerial and Ground Connections and 2 Convenience Outlets

Listed by Underwriters' Laboratories and Fulfills Specifications of Federal Specification Board.

ADVANTAGES OF COMBINATION DEVICES

(1) Complete Line of Space Saving Devices—The P&S-Despard line is complete—every possible convenience for the home owner is now at the architect's command.

(2) Three in One—The P&S-Despard Units allow the use of three wiring devices, if desired, in a single gang switch box.

(3) Each Device Interchangeable—Any P&S-Despard device may be removed and interchanged with any of the other basic devices which comprise the line.

(4) Small but Sturdy Construction—While the devices are of smaller size, they have the sturdy construction of the finest quality—full 10-amp. rating for switches and 15-amp. rating for outlets.

(5) Devices Inexpensive—The many savings in boxes, multi-gang plates and installation time makes the P&S-Despard wiring system not only the most convenient but actually the most economical wiring system available today.

(6) Reduced Wiring Costs—The facility of installation, the various combinations which can be secured in single gang switch boxes give the owner greater value especially in modernizing work.

(7) Large Gang Plates Not Required—The fact that six switches, either tumbler or lock type, may be assembled

in a two-gang box instead of two switches has spelled the end of the large plates of former years.

(8) Standard Boxes Used—These devices do not require special boxes but use the ordinary one and two-gang standard boxes, the single switch box being the one more frequently used.

(9) Material of the Products—Each device is enclosed in an all bakelite body—specification construction throughout.

While Brown bakelite is standard, devices and wall plates can be furnished in Ivory or Black when specified.

INDUSTRIAL AND COMMERCIAL APPLICATIONS

The P&S-Despard line is not limited, by any means, to residential installations. Fittings' manufacturers have also seen the advantages of compact unit wiring device assemblies. The result is that—today—every fittings' manufacturer lists as standard, covers and boxes designed especially for the P&S-Despard Line.

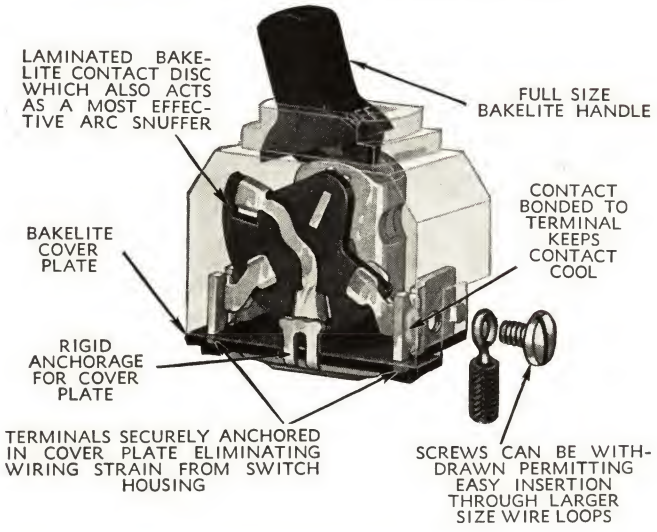
In many cases of residential, as well as commercial applications, it is possible to expand service from present outlets by purchasing new covers which are designed for use with P&S-Despard devices. This eliminates the expense of breaking the conduit line and installing a larger fitting, as is usually necessary when adding additional controls.

SIMPLIFIED AND IMPROVED METHOD OF INSTALLATION

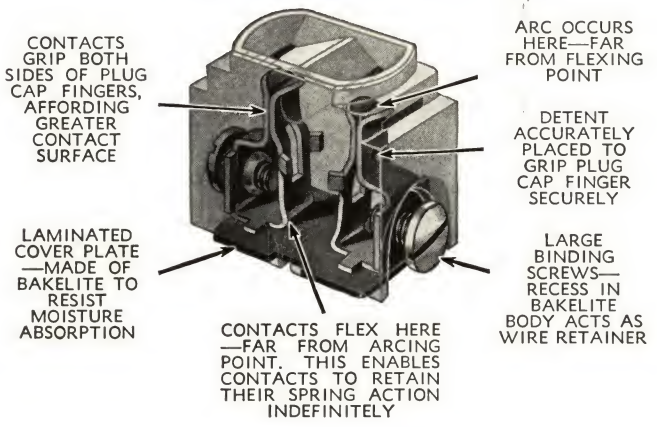
In the P&S-Despard system, installation effort has been reduced to a minimum. The time-taking, old-fashioned method of loosening and tightening setscrews has been entirely eliminated, and replaced by an ingenious, patented method exclusive to our line of wiring products.

The strap of the box is provided along the outer edges with rectangular slots in the center of which are "ears" or lugs which can be easily turned down with a screw driver. The Bakelite units are provided with grooves on the face side into which these lugs fit and grip. (See illustration below.) When the unit is inserted in its place in the strap, it is a matter of but one twist of the screw driver to bend down and lock the lug in the groove. The result is a perfect, rigid wiring device combination of one, two or three units assembled *on the job*—at the *moment of installation*—to meet the demand of various requirements.

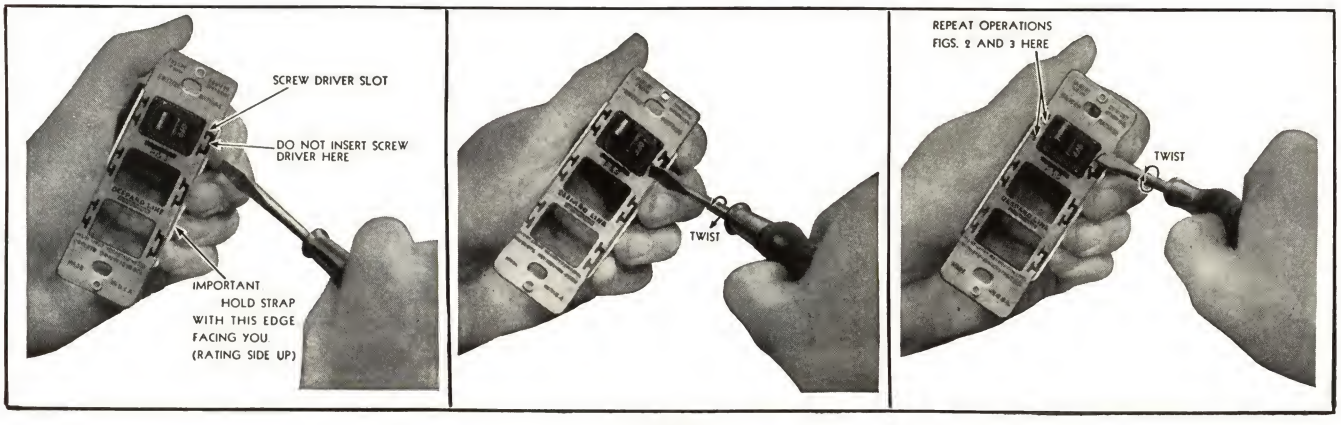
P&S-Despard Type "T" Tumbler Switch Construction



P&S-Despard Convenience Outlets



A Screw Driver Is the Only Tool Needed for Assembly





Cat. No. 1311
Single Pole



Cat. No. 1311-L
Single Pole
Lock Type



Cat. No. 1391
Single Pole
Residential
Type



Cat. No.
1311-LT
Single Pole
Luminous
Handle





Cat. No. 13202 Cat. No. 13203
Convenience Outlets



Cat. No. 1320
Convenience
Outlet



Cat. No. 1322
Radio Outlet



Cat. No. 1323
Radio Cap



Cat. No. 1341
Pilot Light
Outlet



Cat. No. 1339
Night Light
Receptacle



Cat. No. 1340
Pilot Light
Receptacle



Cat. No. 1344
Bell Push



Cat. No. 1345
Blank Insert



Cat. No. 1376
Single Flush
Pilot Light



Cat. No. 1377
Combination
Flush Pilot
Light



Cat. No. 1330
Name Plate

SPECIFICATION TYPE FLUSH TUMBLER SWITCHES

All Bakelite—Totally Enclosed—"T" Rated for Type "C" Lamp Loads

The special features of the switches are illustrated on the previous page. They are made of Brown Bakelite or Ivory. The lever is doubly insulated and the strap is insulated from the switch. The front and back are enclosed, making a thoroughly dustproof unit. The mechanism has a four-point break, positive kick-off and arc-snuffing shutter. Each switch is tested under full current load before shipment and conforms to Government and Architectural specifications.

CONVENIENCE OUTLETS

Single Convenience Outlets—For assembly in combination with switches, radio outlets, or any other P&S Despard devices. Housings are made of Bakelite. Contacts are of the finest phosphor bronze—designed to grip both sides of attachment plug cap prongs.

For Two-Circuit Installations—Where one convenience outlet is to be switch-controlled, a combination of two Cat. No. 1320 or 1420 outlets having separate feed and return may be installed. Where common return is desired the two negative terminals may be bussed together.

Duplex and Triplex Convenience Outlets—Have one-piece Bakelite bodies, four binding screws for feed-through circuits, and embody the same constant tension contacts as single convenience outlets.

RADIO OUTLETS AND CAPS

Radio Outlet, Cap and Divider—Outlet can be installed in any outlet box singly, in multiple, or with other P&S-Despard devices. Cap blades are set at an angle which prevents insertion in power slots. Cat. No. 1346, box divider, shown below keeps the antenna and ground wires separate from any power circuit entering the same box.

COMBINATION DEVICES

Pilot Lights with Metal Hoods—A 6-watt, 120-volt red Mazda lamp and metal hood are furnished with each receptacle.

Flush Pilot Lights—Furnished complete with 6-watt, 120-volt, clear Mazda lamp and red jewel. Cat. No. 1376 is mounted in Cat. No. 1347 single opening strap. Cat. No. 1377 is for use in combination with P&S-Despard switch or outlet.

Night Lights—Furnished complete with lamp and metal reflector. The 6-watt, 120-volt clear Mazda lamp gives sufficient light to outline walls or furniture.

Name Plate—May be used in connection with all P&S-Despard plate openings. Consists of a rustproof frame, transparent window and white card.

Bell Push—Can be placed in same box with P&S-Despard switch, outlet or night light. Made of Bakelite—will not discolor or be harmed by exposure to weather.

Blank Insert—May be used to fill unused openings in plates. It is made with knock-out which can be punched through for use as cord hole or telephone outlet.

ACCESSORIES AND BOX COVERS

Mazda Lamps—For use in pilot light receptacles and night lights. Lamps are rated 6-watt, 120-volt. The Manufacturer's Cat. No. is "Type S-6."

Appliance Strap—For mounting single P&S-Despard devices in small spaces. Ideal for appliance applications. Dimensions: length $2\frac{7}{32}$ in., width $\frac{29}{32}$ in. Mounting screw holes, tapped for $\frac{6}{32}$ screws, spaced on $1\frac{11}{32}$-in. centers.

Mounting Straps—Cat. No. 1347 Single Opening and Cat. No. 1348 Three Openings. The correct style of mounting strap is packed with each P&S-Despard plate. They may, however, be ordered separately. Dimensions: Cat. No. 1347—length $4\frac{3}{32}$ in., width $1\frac{5}{16}$ in.; Cat. No. No. 1348—length $4\frac{3}{32}$ in., width $1\frac{13}{32}$ in. Screw hole spacing on both, $3\frac{9}{32}$ in.

Metal Box Covers—For mounting any one P&S-Despard device directly on a $3\frac{1}{4}$-in. outlet box, or any one or two P&S-Despard devices on a 4-in. outlet box. They are especially adapted for surface or exposed work. Covers have bright metallic finish and are furnished complete with the necessary straps for installing devices.



Cat. No. 1361
Single Opening
$3\frac{1}{4}$-in. Box Cover



Cat. No. 1321
Attachment
Plug Cap



Cat. No. 1346
Box Divider

P&S-DESPARD WALL PLATES

Supplied in Bakelite, Brass and New Process Metals



Cat. No. 1671-A



Cat. No. 1781-G



Cat. No. 1432



Cat. No. 1333



Cat. No. 1881-B



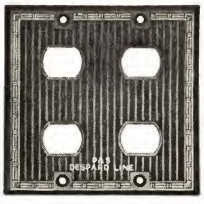
Cat. No. 1791-V



Cat. No. 1791-R



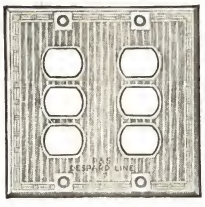
Cat. No. 1335



Cat. No. 1334



Cat. No. 1792-2B



Cat. No. 1436



Cat. No. 1782-2C

Bakelite Plates—The structural features of our Bakelite plates present a marked advance in design. They have thick, strong sections and the device strap has been designed to form a metal reinforcement for the plate. They are supplied in Brown or Ivory and are also available in sectional type.

Brass Plates—Brass plates (.040 and .060 Struck-up) for both P&S and P&S-Despard wiring device lines are also available as standard items.

Any United States standard finish can be furnished on special order of brass plates.

NEW PROCESS METALS

New Process Metal Plates are furnished in three finishes—*Brown-X* and *Ivory-X* plates have a multiple coat of baked-on, insulating enamel. Closely resembling Bakelite, they have all of the sturdiness of metal plates—they will not warp or crack and their surface is very satisfactory for painting. *Chrome-X* plates are made of .040-in. Stainless Steel. Their soft, semi-polished, silver-like finish is right in the metal and will last indefinitely.

SPECIFICATION SPECIALTIES



Cat. No. 1535
Fan Hanger



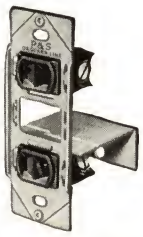
Cat. No. 1533
Weatherproof
Outlet



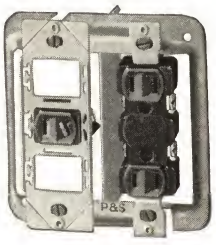
Cat. No. 4521
Weatherproof
Switch



Cat. No. 1534
Clock Hanger



Cat. No. 4513



Cat. No. 4517

Radio Outlets

Fan Hanger—New safety design having hooks integral with strap to hook under edge of cover as an extra holding means—easy to install and fits standard 4-in. square boxes with plaster covers—available in clamp and stud types.

Weatherproof Outlet—A permanent, weatherproof convenience outlet for outdoor lighting connections or appliances. Plate and screw cover are cadmium finished. Gaskets on both plate and screw cover make it thoroughly weatherproof. When receptacle is in use, attachment plug cap may be covered with Cat. No. 1536 cap, which must be purchased separately.

P&S Weatherproof Switches—For installations exposed to weather, dampness and special atmospheric conditions. Catalog number includes rubber weatherproof mat and dull chrome plate with beveled edges for use with standard outlet box.

Clock Hanger Outlet—Receptacle is recessed for attachment plug cap, allowing clock to hang flush with wall, eliminating the usual unsightly cord connection.

Radio Outlets—For radio and power outlet assemblies. Can be furnished with Brush Brass, Brown-X, Chrome-X and Ivory-X plates.

Full details of all items appearing on these 4 pages are included in our Catalog No. 38.

MEMORANDA

FRANK ADAM ELECTRIC CO.

GENERAL OFFICE AND FACTORY

3650 Windsor Place, ST. LOUIS, MISSOURI

MAIL ADDRESS: P. O. DRAWER 357

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EXPORT OFFICE: Langguth-Olson Co., NEW YORK, N. Y.

DISTRICT SALES REPRESENTATIVE

Engineering Service

Recognizing the fact that our products are of a highly technical nature, we have built up an organization of sales engineers in our home office and district offices, who by long experience are competent to help the architects, engineers and specification writers in their problems of designing and specifying the electrical installations with the proper switches, panelboards and switchboards that the particular installation requires.

We therefore suggest to the architects when they have a project requiring our line of material, that they immediately call upon our nearest district office representative to give them the latest engineering data on our products. We are only too glad to assist the architects' engineers and specification writers in every way, because we appreciate that this is a necessary service that we must offer in connection with our highly technical products.

Experience

The FRANK ADAM ELECTRIC Co. have been pioneers and have for over forty years specialized in the design and manufacture of our line of products.

Manufacturing Facilities

The main office and manufacturing plant are in St. Louis, Mo.

The plant is a thoroughly modern fireproof building specially designed and equipped for the most efficient and economical manufacture of the company's specialized quality products.

Distribution Facilities

The manufacturing plant, being located in St. Louis, has plenty of skilled help available, has a short haul for supplies of raw materials and finished devices, and can ship to all parts of the United States promptly and at an economical cost. Furthermore we carry in most of the sales offices sufficient finished stock for emergency demand.

Standardization

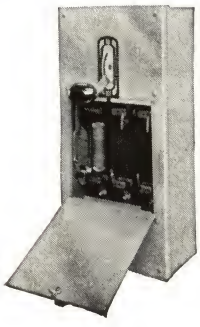
The FRANK ADAM ELECTRIC Co. were the first manufacturers to apply the complete unit of either panelboard section or switches to the design and construction of lighting and appliance branch panelboards and distribution panelboards and switchboards, and also to the F-A Lighting Control System of Pre-selective Remote Control for theaters and auditorium stage switchboards, with the result that these standardized unit constructed panelboards and switchboards are far better made today and at a lower price than ever thought possible ten or fifteen years ago.

The FRANK ADAM ELECTRIC Co. was one of the first manufacturers of these products to co-operate with the Underwriters' Laboratories, Inc., of the National Board of Fire Underwriters, to the end of making a better and safer product.

FRANK ADAM PRODUCTS

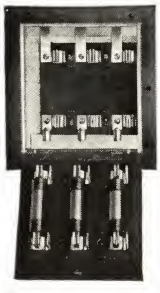
F-A Shutlbrak Safety Type Enclosed Switches

F-A Shutlbrak Switches are of high grade, rugged construction and embody a new switching principle. Making and breaking of the circuit is accomplished by the movement of a shuttle in a totally enclosed chamber. The design is such that when the current is broken, the final arc is taken by specially constructed arcing tips on the *reverse side of the clips from where the current is normally carried.*



A reinforced steel clamping spring insures positive pressure at point of contact when the switch is in the *"on"* position, thus assuring low resistance and low heating. Current carrying parts are heavily silver plated to prevent corrosion.

These switches are made in Types A, C and D. Types A and C are quick make-and-break switches, horsepower rated for use on motor circuits. Type A has a fully interlocked fuse door. Fuse clamps on Types A and C are of the new F-A cam type. All switches are finished in gray enamel and are specially styled for neatness in appearance. Ratings: 30 to 60 amp., inclusive, 250 volts; and 30 to 200 amp., inclusive, 600 volts.



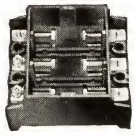
F-A Switchfuz

The F-A Switchfuz is a rugged constructed hinge-type pull-out fuse disconnect switch, with "on" and "off" position, and is approved for general use and service equipment.

The F-A Switchfuz is made in 100 to 1800-ampere capacity for 250 volts or less and 100 to 400-ampere inclusive for 600 volts. It is furnished for either surface or flush mounting as individual switches, or grouped in distribution panelboard or switchboard assemblies.

F-A Pulfuzsw (Pull Fuse Switch)

The Frank Adam Pull Fuse Switch is a special design and construction pull-out type of fuse switch with "on" and "off" position, and a special design of switch blade arranged to clamp the fuses when the switch is in the "on" position.





The Frank Adam Pulfuzsw is approved for general use and service equipment, and is furnished in separate enclosure or assembled with other similar units for main switch and range switch, and with 15-ampere branches for light and appliance circuits. It is also assembled for distribution panelboards for power and light.

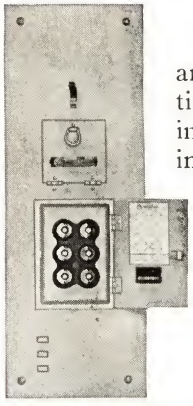
F-A Circuit Breakers



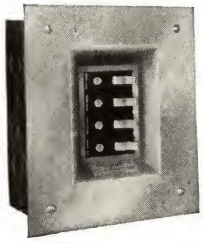


The Frank Adam Electric Co. has developed two types of circuit breakers for panelboard branch-circuit use. The F-A "Dublbrak" Heavy Duty Unit illustrated at left is approved for both DC and AC Feeder Systems, 125 volts or $^{125}/_{250}$ volts, from 10 to 50-ampere capacity, inclusive. The F-A Type AC Circuit Breaker illustrated at right is approved for AC service only, 120 volts or $^{120}/_{208}$ volts, from 10 to 50-ampere capacity, inclusive.

F-A Service Equipment



These units are furnished in the switch and fuse type as shown in the illustration at the left. They are also furnished in the Type AC circuit breaker as shown in the illustration at the right. Circuit breaker capacities from 15 to 50-ampere are available in all assembly combinations, including water heater and range branches.



Note: We also specialize in special design service equipments for larger capacities with switch and fuse and also with circuit breakers for mains and branches.

F-A Distribution Panelboards and Switchboards

Our several types of switches were all designed and constructed to be used in assemblies for panelboards and switchboards, and as all of these are special for each installation, we offer our engineering service to help the architects' engineers design and specify the right and proper design, capacity and construction of the distribution panelboards or switchboards.



Pulfuzsw Distribution Panelboard

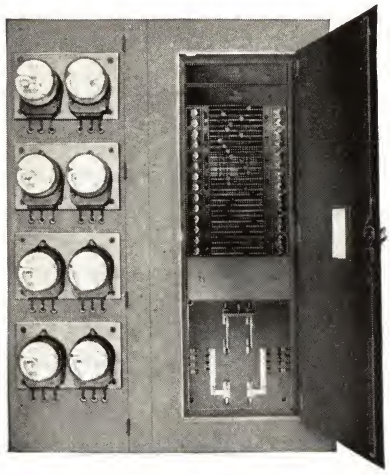
We recommend the panelboards for small installations and the switchboard type for large installations.



F-A Lighting and Appliance Branch Circuit Panelboards

Both standardized and special design Light and Appliance Branch Panelboards are assembled from F-A standardized panelboard section units. The illustration at the left shows an F-A Panelboard with Dublbrak Circuit Breakers. Panelboards are also furnished for either Edison plug or cartridge type N.E.C. fuse connection, or with fuse connections and a rugged single, double or three-pole tumbler switch.

F-A Meter Control Panelboards and Cabinets



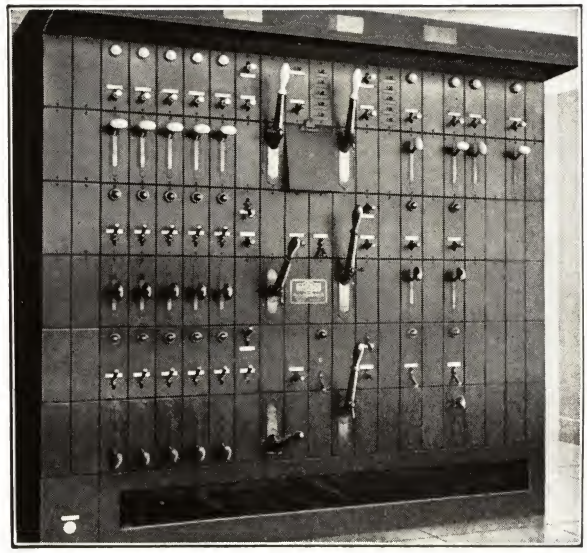
The Frank Adam Electric Co. was one of the earliest manufacturers to recognize the value to the owners of office buildings and loft buildings of the meter control panelboards for electric light and power, and have given considerable time and thought in developing the various types of meter control panelboards as best suited to the demand of small buildings, medium size buildings and large buildings.

Here again we offer the architects our special engineering service.

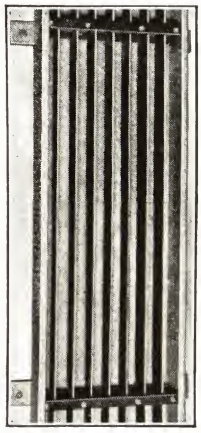
If they will call on our sales office representative and place their project problems before him, he will co-operate with them to the best of his ability to specify the most economical and the best adapted meter control panelboards and cabinets for the project.

F-A Stage Switchboards

The Frank Adam Electric Co. design and build stage switchboards for purely manual control, modified manual and remote control, full remote control, five or ten all master pre-selective remote control and with the standard resistor or potentiometer reactor dimmers, or for motor drive remote controlled dimmer banks with a minimum size control station on the stage, or in the picture booth, or in both locations; also the Frank Adam Electronic Tube control system, and also mobile, or manual-mobile illumination control for dining rooms, dance halls, auditoriums, night clubs or the outside of buildings.







F-A Bus Duct

Illustration at left shows Standard Feeder Type Bus Duct, consisting of bare copper bars enclosed in steel or aluminum enclosure and arranged with suitable supports for attaching to wall or ceiling.

Illustration above shows F-A Plug-in Bus Duct, designed primarily for industrial plants where feeders can be tapped off at intervals of 24 in. Plug-in units from 30 to 200-ampere capacity are available.

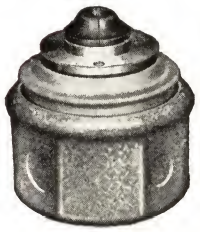
F-A Cable and Wire Duct

The Frank Adam Electric Co. has for many years, made all kinds and conditions of special cable and wire duct for the Frank Adam Remote Control System, because of the necessity of bringing into a limited space the many wires between the stage pilot switchboard and the location of the remote control switchboard.

The architect having a large project of electrical installation should call on our sales office representative and ask him to work out what kind and condition of cable and wire duct would be best adaptable for that particular project.

SPECIAL F-A PRODUCTS

F-A Floor Box

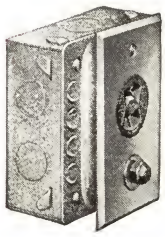


We were called upon many years ago to design and produce an adjustable and reversible cover floor box that would be easy to install and get it flush with the finished floor and be readily adaptable for either a wire connection out of the box or for a plugging connection into a receptacle. These points are all taken care of in the Frank Adam Adjustable Floor Box.

F-A Fan Hangers

Many years ago an architect called upon us to furnish one of his jobs with an outlet on the wall that would both support and give connection to the wall type electric fan, and since that time we have developed several types of Frank Adam Hanger Outlets that are adaptable for hanging fans, pictures with illumination fixtures, clocks and glow heaters, also radios.

The Frank Adam Hanger Outlet is a real hanger outlet, because it is furnished with a stud upon which the fan or whatever should be hung can be actually hung onto, and then held in position by a washer and nut.



F-A Security Type Fan Hanger

This is furnished complete with Frank Adam special 4-in. outlet box and special cover with plaster keys for holding thin plastering over the box; also with bakelite receptacle and struck-up heavy brushed brass face plate.

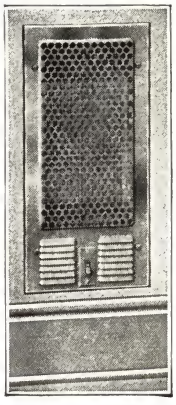
F-A Fixture Stud Type Fan Hanger

This is the same as above, but without either the box or cover, the hanger arm being arranged to be supported on the standard 4x4-in. outlet box with rectangular cover and fixture stud, and held in position by a nut.

F-A FHSB Type Fan Hanger

This is the competitive type that is arranged to be fastened into the rectangular cover of a 4x4x1½-in. standard outlet box, and for supporting the fan is dependent on the fastening of the rectangular cover to the box.

F-A Electric Heaters



The Frank Adam QuikHeter is also a product that we were induced to specialize in because some of our customers, having seen some special heaters that were made up on a customer's demand, decided that they were better than any others on the market, and we first designed and standardized on a built-in heater, and then were practically forced into making the portable heaters because of the demand of our customers. So we now have electric heaters from 1000 to 3000 watts of the built-in type, and 1000 to 1500 watts of the portable type.

F-A Special Steel Boxes and Cabinets

The Frank Adam Electric Co. has one of the most complete sheet steel working shops in the country for the manufacture of enclosures for switches, light and appliance branch panelboards, distribution panelboards and switchboards.

We also furnish all kinds and conditions of junction and pull boxes and telephone boxes.

Technical Product

We again want to draw the architect's attention to the fact that since our products are of a highly technical nature, we suggest they call on our Sales Engineers for any assistance they may need.

GENERAL ELECTRIC COMPANY

Member, Producers' Council

GENERAL OFFICE

1 River Road, SCHENECTADY, N. Y.

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BALTIMORE, MD., 39 West Lexington Street
BANGOR, ME., 600 Main Street
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BIRMINGHAM, ALA., 600 North Eighteenth Street
BOSTON, MASS., 140 Federal Street
BUFFALO, N. Y., 1 West Genesee Street
BUTTE, MONT., 20 West Granite Street
CEDAR RAPIDS, IOWA, 203 Second Street, Southeast
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CHARLOTTE, N. C., 200 South Tryon Street
CHATTANOOGA, TENN., 536 Market Street
CHICAGO, ILL., 230 South Clark Street
CINCINNATI, OHIO, 215 West Third Street
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COLUMBUS, OHIO, 40 South Third Street
DALLAS, TEX., 1801 North Lamar Street
DAVENPORT, IOWA, 511 Pershing Avenue
DAYTON, OHIO, 25 North Main Street
DENVER, COLO., 650 Seventeenth Street
DES MOINES, IOWA, 418 West Sixth Avenue
DETROIT, MICH., 700 Antoinette Street
DULUTH, MINN., 14 West Superior Street
EL PASO, TEX., 109 North Oregon Street
ERIE, PA., 10 East Twelfth Street
EVANSVILLE, IND., 123 Northwest Fourth Street
FORT WAYNE, IND., 1635 Broadway
FORT WORTH, TEX., 408 West Seventh Street
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HARTFORD, CONN., 410 Asylum Street
HOUSTON, TEX., 1312 Live Oak Street
INDIANAPOLIS, IND., 110 North Illinois Street
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JACKSONVILLE, FLA., 237 West Forsyth Street
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MEMPHIS, TENN., 8 North Third Street
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PORTLAND, ME., 25 Bedford Street
PORTLAND, ORE., 920 Southwest Sixth Avenue
PROVIDENCE, R. I., 111 Westminster Street
READING, PA., 31 North Sixth Street
RICHMOND, VA., 700 East Franklin Street
ROANOKE, VA., 202 South Jefferson Street
ROCHESTER, N. Y., 89 East Avenue
ST. LOUIS, MO., 112 North Fourth Street
SALT LAKE CITY, UTAH, 200 South Main Street
SAN ANTONIO, TEX., 201 Villita Street
SAN FRANCISCO, CALIF., 235 Montgomery Street
SCHENECTADY, N. Y., 1 River Road
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SPOKANE, WASH., 421 Riverside Avenue
SPRINGFIELD, ILL., 607 East Adams Street
SPRINGFIELD, MASS., 95 State Street
SYRACUSE, N. Y., 113 South Salina Street
TACOMA, WASH., 1019 Pacific Avenue
TOLEDO, OHIO, 420 Madison Avenue
TULSA, OKLA., 409 South Boston Street
UTICA, N. Y., 258 Genesee Street
WASHINGTON, D. C., 806 Fifteenth Street, Northwest
WATERBURY, CONN., 72 West Liberty Street
WICHITA, KAN., 116 South Main Street
WORCESTER, MASS., 165 Commercial Street
YOUNGSTOWN, OHIO, 25 East Boardman Street

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FOR HAWAIIAN BUSINESS REFER TO W. A. RAMSAY, LTD., HONOLULU

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CHICAGO, 509 East Illinois Street
CINCINNATI, 215 West Third Street
CLEVELAND, 4966 Woodland Avenue
DALLAS, 1801 North Lamar Street
DETROIT, 5950 Third Avenue
HOUSTON, 1312 Live Oak Street
KANSAS CITY, 819 East 19th Street
LOS ANGELES, 5203 Santa Fe Avenue
MILWAUKEE, 940 West St. Paul Avenue
MINNEAPOLIS, 410 Third Avenue, North
NEW YORK, 416 West 13th Street
PHILADELPHIA, 429 North Seventh Street
PITTSBURGH, PA., 16 Terminal Way, S.S.
ST. LOUIS, 1110 Delmar Boulevard
SALT LAKE CITY, 360 West Second South Street
SAN FRANCISCO, 361 Bryant Street
SEATTLE, 1508 Fourth Avenue, South
WEST LYNN, 920 Western Avenue

Special service divisions are also maintained at the following Works of the Company: Erie, Pa.; Ft. Wayne, Ind.; Pittsfield, Mass.; Schenectady, N. Y., and West Lynn, Mass. (West Lynn Works)

BROADCASTING STATIONS

WGY, W2XAD, W2XAF, Schenectady, N. Y. KOA, Denver, Colo. KGO, Oakland, Calif.

Distributor for the General Electric Company Outside of the United States and Canada

INTERNATIONAL GENERAL ELECTRIC COMPANY, INC.

NEW YORK, N. Y., 570 Lexington Avenue General Sales Offices, SCHENECTADY, N. Y.

Foreign Offices and Associated Companies in Principal Cities of the World

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For Floodlighting Projectors, Electric Refrigerators, Air Conditioning Equipment and Wiring Devices, see File Index

AFFILIATED COMPANIES ALSO LISTED IN SWEET'S ARCHITECTURAL CATALOG

THE TRUMBULL ELECTRIC MFG. CO. WARREN TELECHRON COMPANY

OTHER AFFILIATED COMPANIES

GENERAL ELECTRIC VAPOR LAMP COMPANY
Mercury Vapor Lamps
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LOCKE INSULATOR CORPORATION
Insulators
BALTIMORE, MD. VICTOR, N. Y.

GENERAL ELECTRIC X-RAY CORPORATION
X-Ray Apparatus and Coolidge Tubes
CHICAGO, ILL.

Sales Offices in Principal Cities

GENERAL ELECTRIC SERVICE TO THE ARCHITECTURAL PROFESSION

The GENERAL ELECTRIC COMPANY offers an engineering service to architects for the co-ordination of elements manufactured by it to meet given needs or demands for the building trade. The services of its experts are available for any problem that may develop, or for data on special apparatus and materials. On the opposite page is a list of branch offices located at the most important centers of the country. Here expert service and information may be quickly obtained.

Electric Service

The distribution center of a building is that point from which the light and power feeders radiate to the different parts of the building. The center may be a substation taking in electric energy from a utility, or it may be a private plant, or it may be a combination of both.

The simplest distribution center may consist of a switchboard with incoming service and feeder panels. A more complicated equipment is involved if the incoming service is at a voltage higher than would be distributed through the building, so that transformers are required. A still more elaborate equipment is involved where the energy is purchased as alternating current and is to be converted into direct current by synchronous converters or motor-generator sets. The plant may include engine driven direct-current generators, or engine driven alternators, or direct-current or alternating-current turbo-generators. The GENERAL ELECTRIC COMPANY manufactures a complete line of apparatus for all of these services.

Recognizing that the requirements of electrical energy distribution in commercial buildings call for high grade equipment, securing the utmost continuity of service, high operating efficiency, low maintenance expense, and the least possible attendance, the GENERAL ELECTRIC COMPANY has designed its apparatus for such service particularly with this thought in view. Architectural engineers may specify General Electric apparatus for building equipment with a certainty that its design and application are supervised by a corps of engineers who have building service problems in mind and the experience to solve them.

The problem of whether to install direct current or alternating current in a building is one that has to be taken up in each individual instance. In general, it may be said that with the development of variable voltage control for elevators and quiet running alternating-current motors for fans, there is little need for the conversion of alternating to direct current where alternating current is purchased from the utility.

General Electric System

The GENERAL ELECTRIC COMPANY offers a complete, comprehensive electrical system to meet the varied requirements of present-day practices, and is equipped to supply every item of electrical equipment required in the building industry; not merely a collection of apparatus and material. Some of the elements of the General Electric Systems are described in this volume.

SUPPLY AND DISTRIBUTION OF ELECTRIC ENERGY IN BUILDINGS

The data presented in this catalogue relate to general problems involved in the supply and distribution of electrical energy for office buildings, banks, hotels, theaters, department stores, hospitals, educational and public buildings, large apartment houses, and similar structures.

Other sections of this catalogue describe apparatus and supplies for the generation and utilization of electrical energy for such structures.

For buildings of the character defined in the first paragraph of this section, electricity is used for:

(1) Lighting.

(2) Power for elevators, pumps, fans, air compressors, ice machines, kitchen and laundry machinery, vacuum cleaners, office appliances, air conditioning apparatus, and miscellaneous uses.

(3) Heating.

Sources of Electrical Energy

Electrical energy for buildings is derived as follows:

Purchased Energy from a Public Utility—This may involve one, two, or even three incoming sets of supply mains, according to the degree of protection desired against possible shutdown. It may be concerned with energy purchased as alternating or direct current, or both. Proper and efficient utilization of the energy may require substation equipment for stepping down a voltage too high for interior distribution, or machines designed for conversion from alternating current or direct current.

Electrical Energy Manufactured on the Premises—To use energy obtained from this source necessitates the choice of a system, whether alternating or direct current; the selection of the type of prime mover; and the determination of the number and size of the generating units.

Combined Purchased and Manufactured Energy—Such a source of supply involves the problems of tie-in with emergency sources of energy; throw-over connections, etc.

Electrical Requirements of a Supply and Distribution System

The essential elements of a system of purchased electrical energy are:

(1) The incoming line or lines.

(2) The disconnecting switches, circuit breakers, or other protective devices, and the meters, installed by the utility company or considered as part of the incoming lines.

(3) The interior distribution center occasionally called the substation, involving as the case may be, transformers, switches, circuit breakers, relays, meters, instruments, motor-generators, synchronous converters, exciters, regulators, and their control and protective devices.

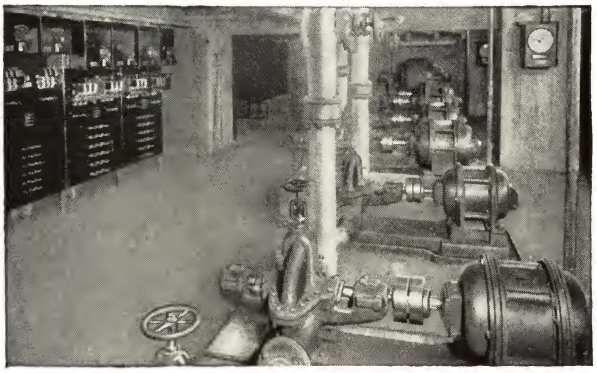
(4) A system of circuits, buses, cables and conduits between the various incoming lines and switches at the distribution center, apparatus at the distribution center and the outgoing feeders.

(5) A number of power and light feeders and their branches, with cables, conduits and devices for their control and protection. Insulated cable for complete lighting and power system, including supply and distribution cables and cable for vertical suspension in high buildings.

(6) Various distribution panels for power and light, at proper locations on the feeders.

(7) The various energy-consuming devices themselves, for light, power and heat, with their respective controlling and protective equipments.

When energy is generated at the premises there is involved in place of (1) and (2) above, or in addition thereto, the generating apparatus with its auxiliaries, and its control and protective equipment. Usually, where energy is generated on the premises, there is less substation apparatus (3).



7 G-E Induction Motors Coupled to 6 House and 1 Fire Pump, Respectively, G-E Control Equipment at Left

A-C. and D-C. Generators

G-E alternators are designed for good over-all efficiency. For building services, alternators should be equipped with automatic voltage regulators. General Electric direct-current engine driven generators are designed for high efficiency and for close maintenance of voltage with varying loads. When applying engine driven generators to lighting and power services in commercial buildings, special attention has to be paid to securing the desired flywheel effect on the engine in order to maintain the most uniform voltage on the lamps. With a-c. generators, however, lamp flicker is always a problem, and it is practically impossible to eliminate it entirely when lights and power are taken from a common bus. Where the elevator load is a large proportion of the generator capacity, and especially where rheostatic controlled elevators of high starting currents are employed in a building which generates its own power, a problem is introduced that requires special study to receive satisfactory service. Built in capacities of 15 k.w. and upwards.

TRANSFORMERS AND CAPACITORS

While the distribution of alternating current in commercial buildings is usually made by circuits of low voltage, there is an increasing tendency to bring 2300, 4600, 13200 volts and higher into the building, and transform it on the premises—thereby obtaining the benefit of lower line losses and the lowest possible cost for power. General Electric Pyranol or oil-filled transformers meet all requirements for circuits above 600 volts. For use on lower voltage circuits, G-E air-cooled transformers are recommended.

Pyranol Transformers



G-E Single-phase Pyranol Transformer

100 kva—13,750 to 125/216Y volts for use in buildings where submersion is not expected

For all indoor installations in buildings such as apartments, offices, hospitals, hotels, schools, theaters and industrial plants, savings in installed costs are usually obtained by using G-E Pyranol Transformers, designed and built especially for use with Pyranol, the new nonflammable and nonexplosive cooling and insulating liquid. It is possible to meet the safety requirements of the National Electrical Code more economically for such installations with G-E Pyranol Transformers than with oil-filled units, because with Pyranol Transformers many restrictions are eliminated. As expensive fireproof vaults are not required with Pyranol Transformers, they can be installed inexpensively, directly at the load center. This is often highly advantageous owing to the improved voltage regulation and efficiency of the distribution circuit. The dependability of these transformers is proved by the excellent service record of more than 450 units, many of which have been in operation for more than four years.

G-E distribution transformers are available in both oil-filled and Pyranol-filled designs. Features of modern G-E transformers include:

Interiors of higher electrical strength and better regulation than heretofore obtainable.

Mechanical structures of unique design, to assure permanence in core, windings and insulation, should short circuits occur.

Sturdy steel tanks with all seams carefully welded to make them permanently liquid-tight.



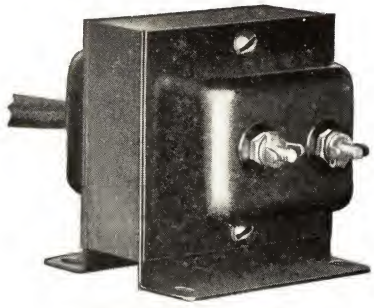
G-E Single-phase Distribution Transformer

15 kva, 60 cycles, 2400 to 120/240 volts

Small Air-Cooled Transformers

General Electric Company offers a complete line of small air-cooled transformers for use on circuits 600 volts and lower. These units can be installed without the use of fireproof vaults. They can be supplied with junction boxes for conduit wiring and, because of their small size and compact construction, can be placed in any convenient location. These units are valuable for reducing, balancing or boosting voltage, for insulating one circuit from another and for phase changing. By the use of these transformers, small 115-volt devices such as drills, compressors, vacuum cleaners, fans, soldering irons, etc., can be operated from the power circuit rather than from the lighting circuit. This is often more economical. Better lighting service will also result from the removal of these fluctuating loads from lighting circuits.

Small air-cooled transformers are also advantageous for deriving circuits of 25 volts or less from 115- or 460-volt circuits—for the operation of furnace dampers, solenoid operated valves, fans and blowers, small motors, bells, buzzers, annunciators and signal lamps. Normal-reactance transformers are available for use with standard code wiring and high-reactance transformers for use with annunciator wiring.



Typical G-E Control Transformer

Pyranol Capacitors

In many buildings, the installation of G-E Pyranol Capacitors for power-factor improvement has improved operating conditions in the building and effected remarkable savings in power costs. In those cases where power contracts include a penalty for low power factor, or a bonus for its improvement, substantial returns have been made on the investment.

For example, a power-factor survey was made for a large Detroit office building before its construction. As a result, a 120-kva G-E Capacitor Unit was included in the specifications by the architects. The installed cost of the equipment, according to the consulting engineers who designed the electrical system for the building, was approximately $2500. Calculations based on estimated power costs showed that the equipment would pay for itself within four years, since the Power Company allowed a discount of 5% for power factor over 95% average. Records for the first two years of operation showed the power factor to be close to 100% and the discount earnings were such as to return annually 25% on the investment. Absolutely no service or maintenance was required during this period.

Often even greater savings will be enjoyed by the use of capacitors, which frequently pay for themselves in less than two years.

Pyranol, because of its superior dielectric characteristics, has made possible great savings in space ever since it was introduced in 1931. The size of G-E Capacitors has steadily decreased until now some ratings are as much as 75% smaller than the corresponding units of that time. Pyranol Capacitors have a remarkable record: reported electrical failures amounting to less than .18%—a service record of more than 99.82% perfect.



Installation of Pyranol Capacitor

Rated 3-phase, 60 cycles, 100 kva, 460 volts, with enclosed fused switch

Pyranol Capacitors are available in sizes ranging from the small enclosed units for connection at motor terminals, up to large capacitors consisting of single phase units arranged in racks, complete with fuses and discharge devices. Fusible switches are supplied for connecting and disconnecting the smaller capacitors and oil-circuit breakers for the large capacitors. Standard ratings range from .5 up to 1260 kva, and from 230 up to 6900 volts.

SWITCHING EQUIPMENTS

G-E manufactures a complete line of switchgear for all systems of electrical distribution. This includes switchboards and switching equipments for the control of generators, transformers, feeders, motors, etc.

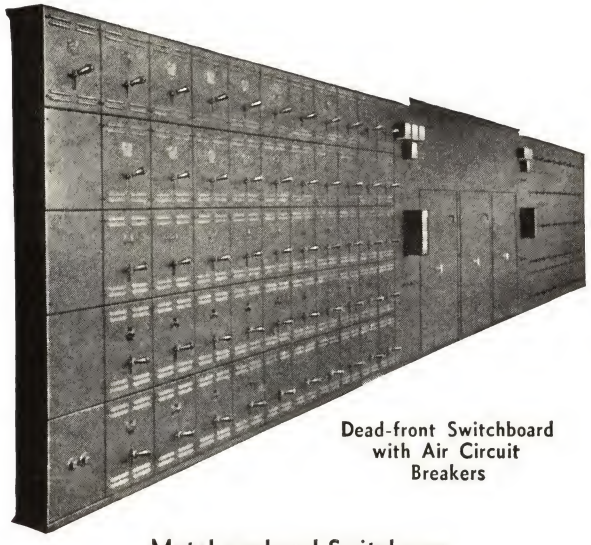
Switchboards—Panels are made of steel, or ebony asbestos, slate, marble, or other material as specified by the purchaser.

To meet usual demands and conditions that have been found to occur repeatedly, a comprehensive line of **Standard Panels** has been developed. When conditions are such that standard panels cannot be applied, the Company's long experience assures the best service in the selection and design of the switchboard to meet the requirements.

Publications giving descriptive information, or detail information, on any equipment, are available.

Switchboards may consist of plain vertical panels or of hinged and duplex panels, or they may be of the safety enclosed type, or benchboards.

Semi-flush type instruments, meters, and relays in uniform types of cases, together with semi-flush mountings of other devices, provide a "streamline" effect that gives to the G-E switchboard a conspicuously improved front of board appearance and allows better visibility of the instruments, due to only one plane view.



Dead-front Switchboard with Air Circuit Breakers

Metal-enclosed Switchgear

Metal-clad Switchgear—This comprises a line of moderate and heavy-duty switching equipment that affords maximum safety to personnel and property, reliability of service, and decreased fire risk, maintenance and installation expense.



G-E Cubicle Switchboard with Semi-flush Devices

Cubicles—A metal housing for manual and automatic switchgear that provides a neat and compact arrangement with safety to personnel and property. Available in isolated units or in combinations to form a switchboard as illustrated.

An outstanding feature of the G-E steel panel and fabricated metal switchgear is the ***"shipped assembled"*** *construction.*

The compact design is factory built and delivered to the purchaser completely assembled. This means not only a reduction in installation, maintenance, and engineering costs, but also a saving in floor space. The number of units which can be shipped assembled together is limited only by transportation and handling facilities.

Automatic Switching Equipments

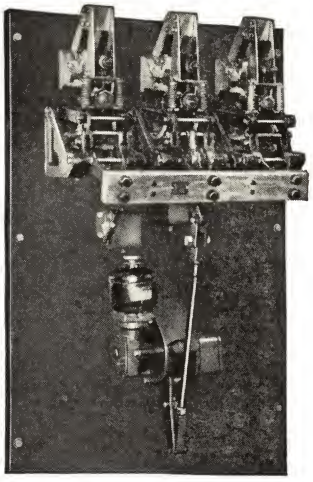
Automatic switchgear is available for practically all classes of service regardless of the size of the machines or units to be controlled.

Automatic supervisory equipments provide for the centralized control and indication of various types of switchgear located at outlying stations.

Automatic telemetering equipments are used to transmit readings of meters, instruments, indicators, etc., to a load supervisor's office.

General Electric Switches

A complete line of switches for switchgear application is available including knife switches, disconnecting switches, control switches, instrument switches and enclosed switches, in all commercial ratings and to meet all usual requirements.



Type AL-2

Motor-operated air circuit breaker, nonautomatic, triple-pole, 250 volts a-c., 2000 amperes

Air Circuit Breakers

The line of G-E air circuit breakers is complete for all purposes. Ratings range from 3 to 10,000 amperes and up, 750 volts, a-c. or d-c. Single pole or multipole, open or safety enclosed type, manually or electrically operated breakers in any desired arrangement can be furnished.

Oil Circuit Breakers

G-E oil circuit breakers include all sizes and styles. They are available rated 200, 400, 600, 1200, 2000 amperes and up; 5000, 7500, 15,000 volts and up; 20,000, 25,000, 50,000, 100,000 kva. and up interrupting ratings; indoor and outdoor, oil blast interruption, manually or electrically operated or with automatic reclosing feature, for any application.

G-E Relays

G-E relays, direct and alternating current, for protection against overcurrent, reverse current, unbalanced current, overvoltage, undervoltage, unbalanced voltage, overpower, underpower, reverse power, reverse phase, reverse polarity and abnormal temperature, are manufactured for all possible applications. Auxiliary, control and signal relays are also available. Relays may be obtained for instantaneous, time-delay or time-limit action. They are simple, durable, accurate and unusually reliable.

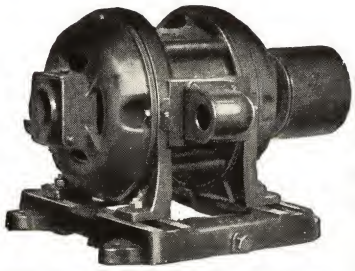
Fittings and Accessories

While G-E switchgear is furnished complete, ready to install, a line of fittings and accessories is available, including pipe fittings, supports, bus clamps, terminals, contact nuts, etc.

When Specifying

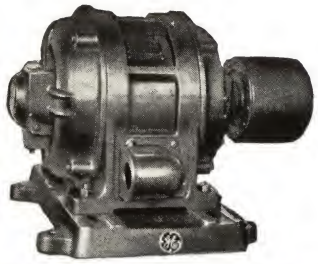
In order to specify correct type of switchboard panels and instruments for each installation, the architect or contractor should consult with the switchgear specialist in the nearest G-E Sales Office.

G-E MOTORS



G-E 3-or-2-phase, 15 Hp. Squirrel Cage Motor

The GENERAL ELECTRIC COMPANY manufactures a complete line of motors and motor controllers for both alternating and direct current service. Motors are available in a variety of ratings from fractional horsepower sizes to 200 hp. and larger and with many different electrical characteristics and mechanical modifications for both general purpose and special duty applications. Specific detailed data on motors and their controllers will be supplied by the nearest G-E sales office on request.

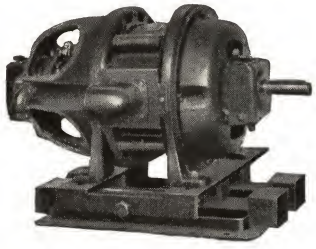


G-E 50 Hp., 3-or-2-phase Squirrel Cage Motor

G-E QUIET MOTORS

Of particular interest to architects and engineers is the G-E line of quiet motors developed to meet the requirements of the building trade. G-E Quiet Motors bear a special additional name plate as shown above which is your guarantee that the motors have been specially designed and tested for this service.





For all applications where quiet operating equipment is necessary, specifications should definitely call for "Quiet Motors."

Motors developed to meet this requirement are the product of years of study of noise problems by our research laboratory and designing engineers in connection with motors and generators and their application in buildings.

In buildings where quietness is desirable, such as hospitals, schools, clubs, hotels, apartment houses, and office buildings, it is common practice to mount motors on concrete foundation blocks supported on more or less efficient vibration-insulating material. The G-E sound-isolating bases are built to replace such hit-or-miss methods and to eliminate guesswork.

These bases are not intended to isolate air-borne noises at audible frequencies, or those disturbances caused by unbalanced pulleys or belt flapping, or sounds caused by propelled air which are, in general, at frequencies below the audible range, but they will greatly reduce the transmission of audible-frequency vibration through the motor frame to the building structure. Objectionable air-borne noises must be confined by suitable acoustic treatment of the machinery room.

These bases are equally effective at any motor speed between 100 per cent and 66 per cent of normal.

The belt-tightening features of the standard bases are included in the construction of these bases.

These bases are for use with G-E Motors only. For best results they should be used with G-E Quiet Motors.

SOME SELECTIONS OF G-E MOTORS AND CONTROL

Application	Motor	Horsepower range	Type	Recommended Control (See also next page)
Pumps, Compressors, Fans	*A-C Polyphase* *Constant speed* *Squirrel cage*	¼–1000 7½–75 3–100	K or KB* KF KG	Manual CR1062, CR1034 Magnetic CR7006, CR7051
	Synchronous	25–2000	TS	Semi-magnetic CR7062† Magnetic CR7061, CR7065
	Constant or Adjustable Speed Wound rotor	½–1000	M & MB*	Manual CR1028, CR1263 Magnetic CR7022†, CR7761, CR7764
	Direct Current Constant or Adjustable Speed	⅛–200	B & CD*	Manual CR1003†, CR1203 Magnetic CR4065, CR4161†
Small Direct Connected Fans	*A-C Single Phase Constant Speed*			
	*Resistance split phase	1/40–⅓	KH*	Manual CR1061† Magnetic CR7006
	*Low torque capacitor	1/50–10	KC*	Manual CR1061†, CR1062 Magnetic CR7006
Belted Fans Centrifugal Pumps	*High torque capacitor	⅛–10	KC*	Manual CR1062 Magnetic CR7006

*Quiet motor.
†Not illustrated.
This table refers only to principal motors used in buildings; for other types and modifications (vertical, enclosed, etc.), ask for Catalog GEA-623.

MOTOR CONTROLLERS

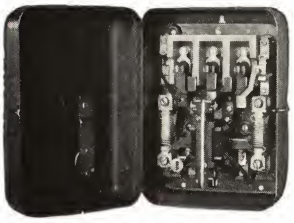
Special Control Developed to Meet Your Application

Illustrations Usually Show Covers Removed

ENCLOSED CONTROLLERS FOR A-C. SQUIRREL CAGE MOTORS—Full Voltage



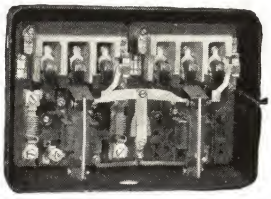
Manual Starting Switches, Type CR-1062—Available in two sizes. Maximum rating: size 1, 2 hp., 600 volts; size 2, 7½ hp., 600 volts. Single-throw, 2 or 3-pole. Thermal overload protection; hand reset. Suitable for group fusing.



Magnetic Switches, Type CR-7006—For starting squirrel cage motors and for use as primary switch for wound rotor induction motors up to 600 hp., 600 volts; 750 hp., 2200 volts, 25 to 60 cycles, overload and undervoltage protection.

Magnetic Reversing Switches, Type CR-7009—

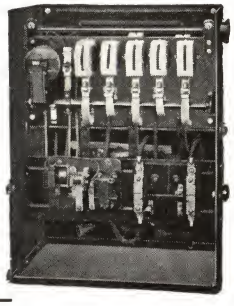
Similar to CR-7006 (above) except for reversing service.



Reduced Voltage



Hand Starting Compensators, Type CR-1034—5 hp. and larger. 60 to 25 cycles. 110 to 550 volts. 2 or 3-phase. Undervoltage release: Instantaneous undervoltage release (standard) or time delay (extra). Overload protection; 2-pole thermal relay.



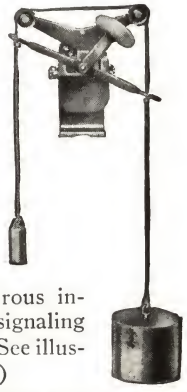
Starting Switches, Type CR-7051—Standard automatic starting compensators. 600 hp. and smaller, 550 volts and less, 60 to 25 cycles, 2 or 3-phase, undervoltage and overload protection. Sizes 50 hp. and smaller, mounted in dust-tight boiler-plate enclosing case are available for use in such places as mills, foundries and refineries.

ACCESSORIES

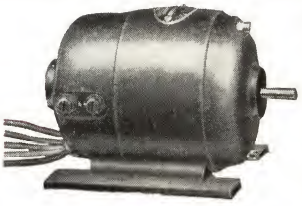


General-purpose Push-button Station, Type CR-2940—This general-purpose push-button station is for use with any of the magnetic controllers described and illustrated on this page.

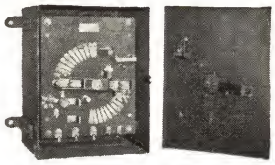
Float Switches, Type CR-2931—For tank or sump operation. Are suitable for use in the control circuit of a-c. or d-c. magnetic starters. (See illustration at right.)



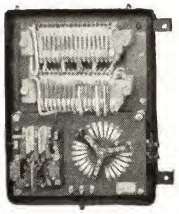
Selsyn Devices, Type CR-9890—For transmission and reproduction of angular motion over electrical conductors. Controls motor starters, etc., from remote points and can be used for numerous indicating and signaling applications. (See illustration at left.)



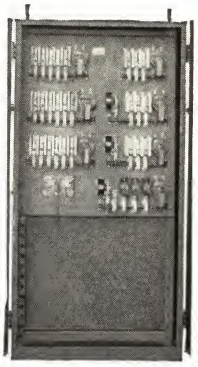
ENCLOSED CONTROLLERS FOR WOUND-ROTOR A-C. MOTORS



Manual Starting Rheostats, Type CR-1028—For secondary control of constant speed motors. 15 hp. and smaller. 60 to 25 cycles. 110 to 550 volts. 2 or 3-phase.



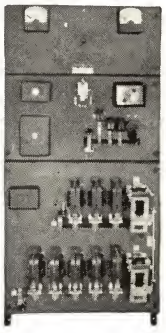
Speed Regulating Controller, Type CR-7764—For fan service, providing 50% speed regulation. Standard enclosed controller, 50 hp. and smaller, 110, 220, 440 and 550 volts, 25 to 60 cycles, 3-phase. Undervoltage and overload protection.



Remote Speed Indicating Controller, Type CR-7761.

For Fan Service. An enclosed controller with push-button station for use with adjustable speed wound-rotor induction motors. 5 to 50 hp., 220 volts, 25 to 60 cycles, 3-phase. Time-limit acceleration. Undervoltage and overload protection. Provides 50% speed regulation.

MAGNETIC CONTROLLERS FOR SYNCHRONOUS MOTORS



Type CR-7061 Reduced Voltage Controller (illustrated) and CR-7065 Full Voltage Controller—Provide undervoltage protection, automatic field removal and reapplying and overload protection for both stator and squirrel cage windings.

CR-7061 reduced voltage controller is for medium and high speed motors.

CR-7065 full voltage controller is for low speed motors.

ENCLOSED CONTROLLERS FOR D-C. MOTORS



Manual Speed Regulating Rheostats, Type CR-1203—¼ to 50 hp. 115 and 230 volts. For shunt-wound adjustable-speed motors. Starting duty and speed variation by field control. Undervoltage protection.



Magnetic Controller, Type CR-4065—For constant speed motors. These magnetic controllers provide definite-time acceleration for d-c. motors ranging from ¾ to 150 hp., overload and undervoltage protection.

For complete information ask for Catalog GEA 606F

THE HART MANUFACTURING CO.

Manufacturers of Diamond H Remote Control Switches for Lighting Circuits

HARTFORD, CONN.

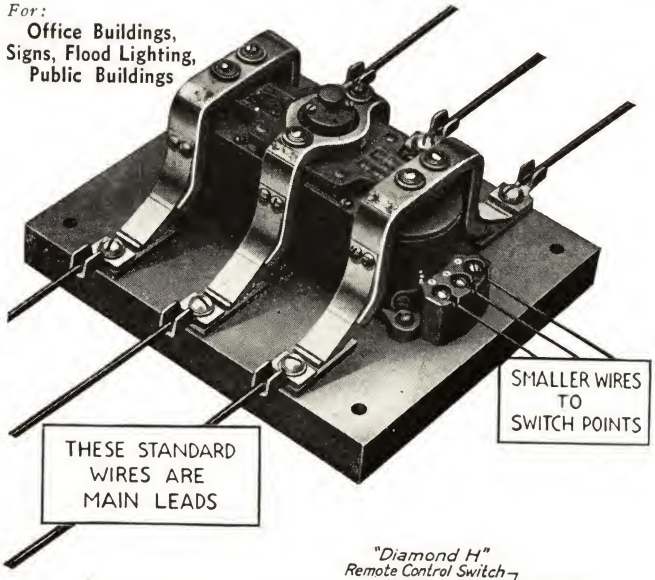
BRANCH OFFICES—NEW YORK. N. Y. and CHICAGO, ILL. FACTORIES—LONDON, ENGLAND and TORONTO, ONT., CANADA

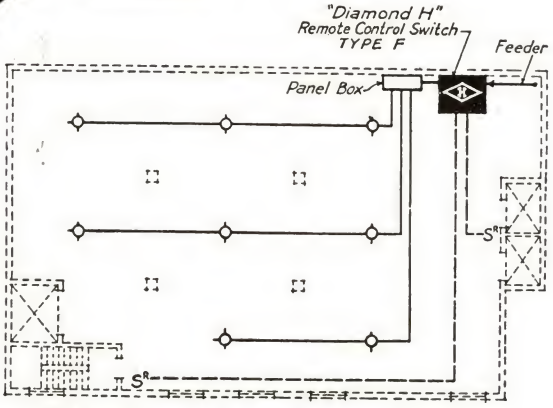
Representatives in All the Large Cities (see Telephone Book)

DIAMOND H SWITCHES

TYPE "F" SINGLE THROW REMOTE CONTROL SWITCH

For:
Office Buildings, Signs, Flood Lighting, Public Buildings





Wiring diagram illustrating use of Type "F". S^R are the momentary contact switches

In locations where many circuits with groups of lights are concentrated, the simple and economical method of controlling these circuits is by the use of Remote Control switches, through Momentary Contact switches placed at convenient control points. For banks, schools, office buildings, airports, stadiums, for window and flood lighting, the possibilities are endless. Savings are made in wire cost since smaller wire is used to MC switch points.

DIMENSIONAL DATA FOR TYPE "F" SWITCHES OF VARIOUS CAPACITIES

Single Pole			Double Pole		
Cat. No.	Ampere capacity	Base size, in.	Cat. No.	Ampere capacity	Base size, in.
716	30	7⅜x 8½	730	30	7⅜x 8½
717	60	7⅜x 8½	740	60	7⅜x 8½
718	75	7⅜x 8½	750	75	7⅜x 8½
719	100	9¾x10	760	100	9¾x10
723	150	9¾x10	770	150	9¾x10
724	200	9¾x10	780	200	9¾x10
725	300	14 x14	781	300	14 x14
726	400	18 x16	792	400	14 x14

Three Pole			Four Pole		
Cat. No.	Ampere capacity	Base size, in.	Cat. No.	Ampere capacity	Base size, in.
790	30	7⅜x 8½	610	30	7⅜x 8½
800	60	7⅜x 8½	620	60	7⅜x 8½
810	75	7⅜x 8½	630	75	7⅜x 8½
820	100	9¾x10	640	100	9¾x10
830	150	9¾x10	645	150	9¾x10
840	200	9¾x10	650	200	9¾x10
850	300	14 x14	.....	.....	.....
860	400	18 x16	.....	.....	.....

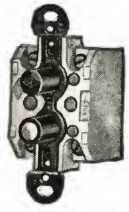


Cat. No. 15009 Toggle Type
Face Plate 7111

MOMENTARY CONTACT SWITCHES

These switches are used with remote control switches to momentarily actuate the switch into action. The momentary contact wall switches can be located in convenient positions, and because of the small amount of current used, it is not necessary to carry the heavy main leads to these switching points. A smaller gauge wire will answer cutting wiring costs. These switches are made in two types, toggle and push button, both fitting standard boxes.

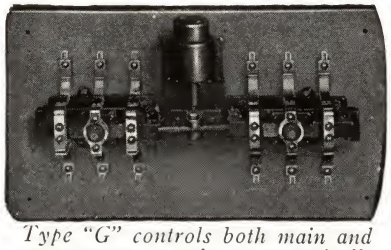
Bullseye signal lights can be supplied when desired.



Cat. No. 090 Push Button Type
Face Plate 1111

TYPE "G" AUTOMATIC CHANGEOVER R.C. SWITCH

For:
Hospitals, Schools, Theatres, Auditoriums



Type "G" controls both main and emergency supply automatically

Wherever emergency lighting circuits are used in addition to the main supply, i.e., in locations where failure of light may mean danger to life, as in hospital operating rooms, schools, theatres, etc., this automatic remote control switch throws from one circuit to another instantly, and back again when main current resumes. They may also be controlled manually by momentary contact switches.

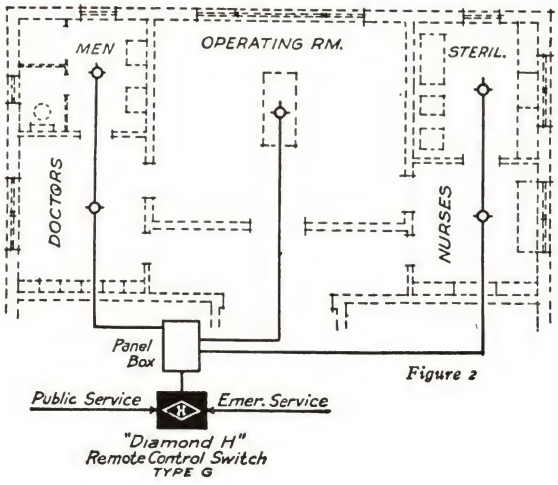


Figure 2

Left:
Wiring diagram of hospital showing control of main and emergency supply by Type "G." Does not interfere with manual operation in rooms

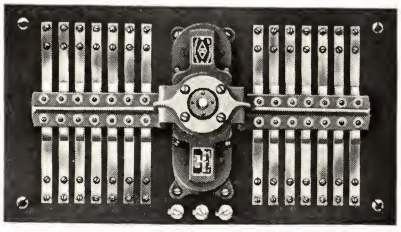
TYPE "G" AUTOMATIC DOUBLE THROW

Double Pole			Three Pole		
Cat. No.	Ampere capacity	Base size, in.	Cat. No.	Ampere capacity	Base size, in.
73025	30	14x24	79025	30	14x24
74025	60	14x24	80025	60	14x24
75025	75	14x24	81025	75	14x24
76025	100	14x24	82025	100	14x24
77025	150	14x24	83025	150	14x24
78025	200	14x24	84025	200	14x24
78125	300	14x24	78135	300	14x24

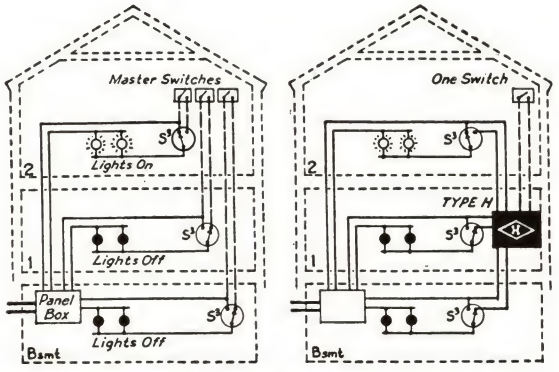
Type "G" can be made in 4 poles; also in 500 amperes. Quotations on request.

TYPE "H" MULTI-CIRCUIT REMOTE CONTROL SWITCHES

For:
House and Grounds, Piers and Docks, Warehouses, Storage Places



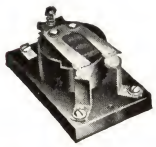
This remote control switch is designed to control all circuits of buildings or grounds where protection from burglar, kidnapper or other trespassers is desired, as for the home and grounds, storage yards and buildings, factories, warehouses, docks and piers, prisons, etc. Made to control from 6 to 48 circuits and operated by master switches conveniently located, this switch instantly lights every light so connected.



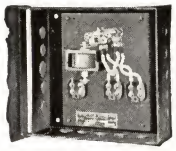
Wiring diagram illustrating the use of Type "H" switch with master control switches

MERCURY TUBE AND MAGNETIC TYPE RELAYS

We make many types of relays suitable for the control of current for signal systems, motors, automatic machines, time and temperature, pressure, speed or auxiliary circuits. Our Engineering Department will co-operate to suggest proper relay for any control need.



Type K Continuous Current Relay



Mercury Tube Relay One to Five Poles, Single Throw, Double Throw



Type C Mechanically Locked Relay



Type M Continuous Current Relay

THE TRUMBULL ELECTRIC MFG. CO.

Members of Producers Council

PLAINVILLE, CONN.

BRANCH SWITCH, SWITCHBOARD FACTORIES AND SALES OFFICES

LOS ANGELES, CAL. LUDLOW, KY. SEATTLE, WASH. SAN FRANCISCO, CAL. TRENTON, N. J. (Porcelain Factory)

SALES OFFICES

NEW YORK, N. Y., 60 E. 42nd Street
PHILADELPHIA, PA., 1505 Race Street
CHICAGO, ILL., 564 W. Monroe Street
DETROIT, MICH., 2457 Woodward Avenue
ATLANTA, GA.
BOSTON, MASS., 1002 Statler Building
NASHVILLE, TENN.

The "Circle T" Line

SAFETY SWITCHES; MOTOR CIRCUIT SWITCHES; ENTRANCE SWITCHES; MULTI-BREAKER LOAD CENTERS; MAGNETIC and MANUAL STARTERS and CONTROLLERS; METER SERVICE SWITCHES; TUMBLER SWITCHES; OPEN KNIFE SWITCHES; SPECIAL SWITCHES.

PANELBOARDS; SWITCHBOARDS; BUSS-WA (the copper bar distribution system); FLEX-A-POWER (the convenience outlet for power in industry); CONTROLITE (the theatre control board); CONVERTI-FUSE (the convertible power panel); "R.B.I." (receding blade-interlocking) dead front distribution board.

Catalogues and bulletins listing "Circle T" products gladly sent on request.

STARTERS AND SWITCHES

Magnetic Starters



"CM-7½"

These starters are equipped either for remote push button control or local control with push button stations in the starter box. Relay heaters ranging in capacity from 1 to 80 amps. provide overload protection. These starters in their various ampere capacities are interchangeable.

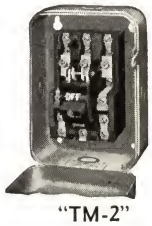
When starter has opened on overload, thermostatic trip automatically resets after a short interval necessary for relay heaters to cool. Hand reset can be furnished on request.

These starters are easily accessible from the front. They can also be furnished in watertight and weatherproof cast iron boxes.

The entire line is described and illustrated in detail in Motor Starter Bulletin, No. 148, sent on request.

Type "T.M." Manual Starters

These manual starters provide thermal protection against overload or damage due to phase failure. Externally operated by simple "on" and "off" movement of the handle. Overload in any phase trips the entire starter mechanism. To reset, just throw the starter "on" after the thermal element has cooled. Handle returns to "off" when starter trips from an overload.



"TM-2"

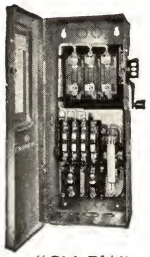
Starters will break stalled rotor current at listed ratings. Ampere capacity regulated by interchangeable relay heaters, ½ to 20 amps. (same as used on Magnetic Starter).

Double butt wiping contacts close under pressure.

Type "T.M.-2" front operated, *maximum rating 2 hp. at 110-500 v. a-c. polyphase.*

Type "T.M.-7½," available front or side operated, *maximum rating 7½ hp. at 575 v. a-c. polyphase.*

Combination Magnetic Starters



"CM-7½" Combination

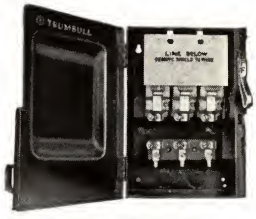
Types: "CM-7½"—"CM-25"—"M-50."

Maximum horsepower: 7½—25—50.

A combination of a magnetic starter for either local, remote, or automatic control, wired to a manually operated fusible or no-fuse motor circuit switch in one box. Listed as standard by the Underwriters' Laboratories, Inc., for a manually operated disconnect switch ahead of a magnetic starter with thermal overload protection. Both starter and switch are capable of breaking the stalled rotor current of motors for which rated and may be readily removed from the box for wiring by loosening the mounting screws.

Type "R.B.A." Safety Switch (Heavy Duty)

This line of safety switches has the following features: self-aligning, double break contacts of very high interrupting capacity and long life; compact moulded bases; interlocking covers. VYSTIPE fuse clamps furnished on all fusible switches, the fuse clamp that grips like a vise. The positive fuse contact clamping screw used on these VYSTIPE fuse terminals permits ease in inserting and removing fuses and at the same time eliminates fuse contact heating.



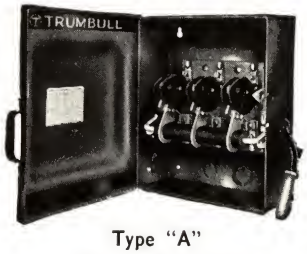
Type "R.B.A."

Rating: 30 to 600 amps.; 2 and 3 poles; 230 and 575 v. a-c. and 250-600 v. d-c.

Suitable for close ganging. Available in cast iron (watertight and dusttight) enclosures.

Type "A" Safety Switches (Heavy Duty)

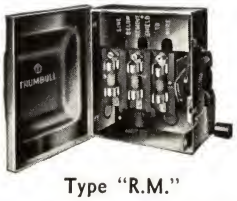
Supplied either single or double throw, in fusible or no-fuse types and will break full load at listed ratings. These quick positive make and quick break switches have an interlocking safety cover. Switches are made of milled foot block construction with built-up contact jaws sweated and pinned into the foot blocks on the larger sizes and swedged into the foot blocks on the smaller sizes. Rated 2, 3 and 4 poles, 30 to 2400 amps. at 230 and 575 v. a-c. and 250 and 600 v. d-c.



Type "A"

Type "R.M." Safety Switches (Heavy Duty)

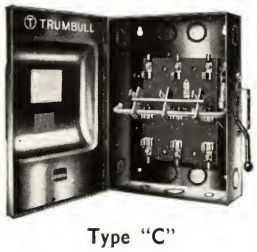
Double break blade construction with *rotor movement* in both fusible and no-fuse types. This design results in a very compact switch for breaking full rated loads. When switch is opened, blades are thrown into deep, narrow slots in the base, cooling and snuffing out the arc. In 2, 3 or 4-pole switches for 30 and 60 amps. and 250 or 600 v. in either drawn steel or cast iron boxes. Also available in 2-position manual starters with the fuses shunted in the starting position.



Type "R.M."

Type "C" Safety Switches (Intermediate Duty)

Externally operated, single throw, quick positive make and quick break switches in no-fuse and fusible types. High class punched clip construction is used, giving maximum electrical and mechanical strength for this type of design.



Type "C"

The box cover does not interlock with the switch handle as in the Type "A," "R.B.A." and "R.M." switches.

These switches are available 2 to 5 poles, inclusive, in 230 v. a-c. and 250 v. d-c. ratings, and 3 and 4 poles at 575 v. a-c. No fuse or fusible 30-600 amps.

Type "D" Safety Switches

Enclosed switches for entrance and light duty. 30-600 amps.; 2, 3 and 4 poles; 230 v. a-c. and 250 v. a-c. or d-c. No fuse, fusible.

PANELBOARDS



Unit Lighting

Unit lighting panelboards are designed for low voltage lighting distribution, 125 v. d-c., 125/250 v., a-c., and 250 v., a-c. Unit sections are of moulded bakelite, affording dead front construction. Tumbler switches are available in both single and double pole having a rating of 30 amps., 250 v.

Fully described in Circular No. 172.



Circuit Breaker Lighting

An improved development designed for 125 v., d-c., 125/250 v. or 250 v., a-c. service. Branch circuit breakers are available in a range of from 15 to 50 amps. Combinations are also possible in single, double and triple pole. This type of panel provides the desirable features of automatic overload protection and flexibility.

Fully described in Circular No. 164.



Multi-breaker Lighting

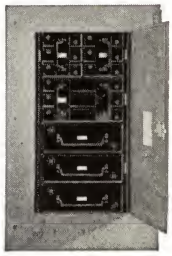
Meets the need for moderately priced circuit breaker panel; neat, compact, simple and trouble-free. Branch circuits are available in 15, 20, 25, 30 and 50 amps., single and double pole capacities, 125/250 v., a-c., or 125 v., d-c. Particularly suitable for installation in restricted space.

Fully described in Circular No. 159.

Converti-Fuse

One of the most popular types of power distribution panelboard available. Complete dead front design is provided—individual base sections and removable caps being made of bakelite. The caps not only serve as holders for the fuses but when pulled act as a disconnect switch.

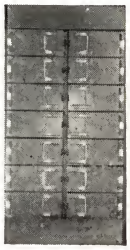
Fully described in Circular No. 154.



Swing-Wa

Swing-Wa Panelboards are designed for heavy duty feeder and power distribution applications where continuous protection is essential. Individual units are enclosed in their own protective steel compartment—having common dimensions, allowing for interchange, re-arrangement and flexibility.

Circular No. 137 describes these panels in further detail.

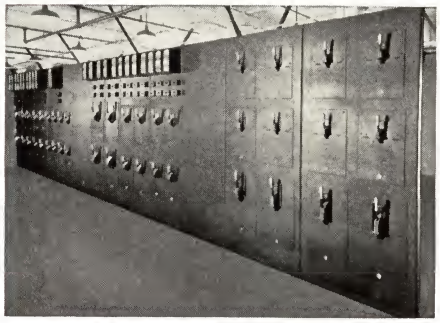


Convertible Distribution

This panelboard offers circuit breaker construction with the maximum degree of convertibility. Branch circuits are available from 15 to 600 amps., 2 and 3-pole, 125/250 v., a-c., 250 v., d-c., and 600 v., a-c. Because of removable trip units, desired changes in capacity may be readily made.



SWITCHBOARDS



FOI

The complete switchboard is an assembly of formed steel panels, each of which contains the required number of FOI units. The FOI switch mechanism itself is composed of heavy duty type "A" parts designed for rugged and severe use and frequent operation. The switchboard provides a neat, compact and safe means of electrical distribution.

Fully described in Circular No. 155.



Swing-Wa

Designed for moderate light and power distribution where space may be at a premium. A neat and compact type of switchboard, flexible in design. Each unit is convertible and complete in itself—readily adaptable to suit varying load requirements.

Fully described in Circular No. 171.



Circuit Breaker

This type of switchboard is dead front, completely enclosed, and built to meet special conditions or requirements of any given job and layout. The circuit breakers incorporated in these boards provide positive control and automatic overload protection for light and power circuits thereby resulting in trouble-free service.

Fully described in Circular No. 166.

FEEDER DISTRIBUTION SYSTEMS



Buss-Wa

Buss-Wa is a standard sectional unit system for distribution of current by means of totally enclosed busbars. It is an extremely flexible type of distribution system which can be easily expanded.

Circular No. 139 and Bulletin No. 165 are available giving complete engineering information on this product.



Flex-a-Power

Flex-a-Power is essentially a power transmission system utilizing a lighter form of Buss-Wa modified to permit the insertion of heavy duty plugging devices known as Flex-A-Plugs which provide power to various load requirements.

Bulletin No. 165 and Circular No. 140 are available for further detailed engineering information.



Trolley-Closur

Trolley-Closur has been developed to provide a better, safer, standardized system for supplying power to portable or moving electrically driven tools.

Bulletin No. 165 and Circular No. 141 are available for further detailed information on this product.

MEMORANDA

ELECTRICAL EQUIPMENT FOR BUILDINGS



WESTINGHOUSE ELECTRIC & MANUFACTURING CO.



Confidence . . . . .

The most important reason for specifying "Westinghouse" is summed up in one word—CONFIDENCE. Fifty-three years of building dependable equipment has made the name Westinghouse synonymous with quality. The architect, therefore, can specify Westinghouse with the confidence that he will get trouble-free apparatus and that his client will concur because he too has faith in Westinghouse products.

As every architect knows, client confidence is vitally important. Naturally, he has such confidence in his architect. But, it is even better when this is extended to products specified for the building—to products manufactured by companies with whom the client is familiar.

The Westinghouse representative provides another reason for the architect's confidence. This man is interested in the entire electrical installation, not in a single piece of equipment. Consequently, he can be depended upon to assist in specifying and supplying the equipment *best* fitted for the particular installation . . . equipment that also is coordinated with the rest of the electrical system.

The efforts of Westinghouse to merit the confidence of its customers do not stop with the installation. Many factors—severe service, fires, inadequate maintenance—may make prompt and efficient repairs necessary at any time in the future. Through a chain of 37 strategically located service shops Westinghouse is prepared to give emergency service. Because these shops are manned by trained personnel and because replacement parts of high quality are used, the repaired equipment is practically as good as when originally installed.

The confidence built up for half a century, the electrical engineering assistance that only a diversified company can give, the service organization to speed repairs in emergencies—these are all advantages beyond the quality of the equipment itself. And yet, these advantages cost not one cent extra, because Westinghouse products cost no more than those of comparable quality.

PARTNER OF THE BUILDING INDUSTRY

ELECTRICAL EQUIPMENT FOR BUILDINGS

In the compilation of this book, Westinghouse has confined the detailed information on Application, Features, How To Select, Dimensions, Typical Specifications and Where To Buy to the electrical products commonly used in the average size building. The other Westinghouse products usually found only in larger structures, briefly are described in the back part of this catalog.

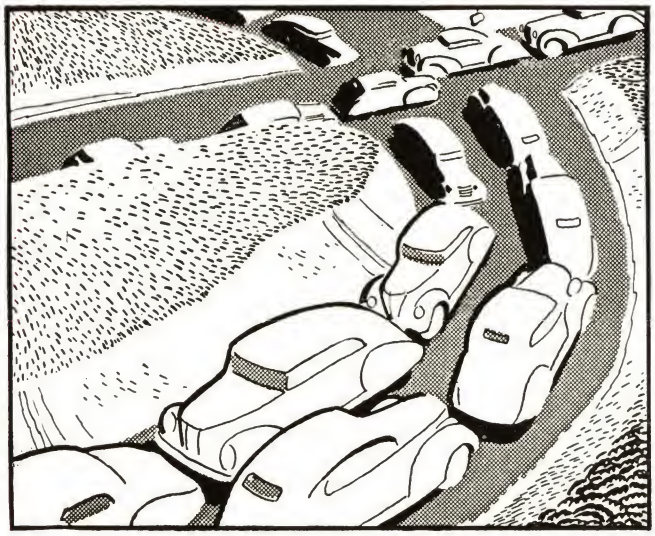
As a further aid to the architect, "Check Lists" of the electrical equipment for various types of buildings have been included. While no claim is made for their completeness, it is hoped that they will serve to remind the architect of equipment that might profitably be used and to guide him to the exact source where he can obtain whatever additional information he needs. Similarly, the wiring layouts, while necessarily general in scope, indicate the location and type of equipment that should be used.

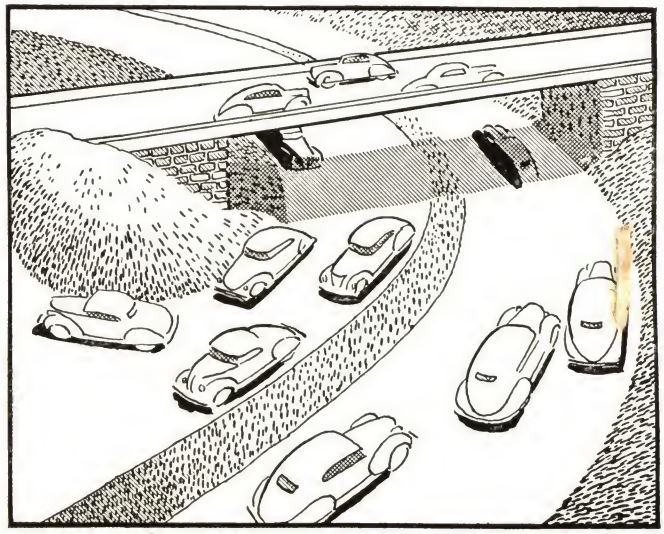
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Westinghouse

PROPER PLANNING AVOIDS ELECTRICAL TRAFFIC JAMS



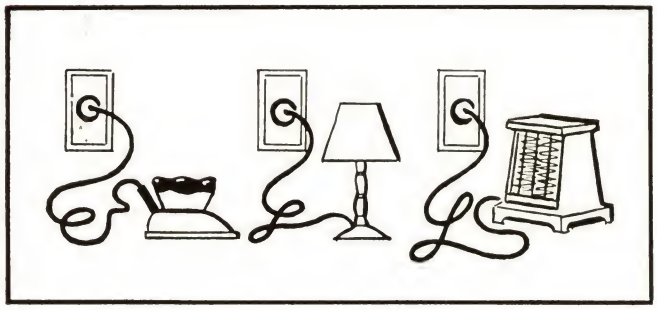


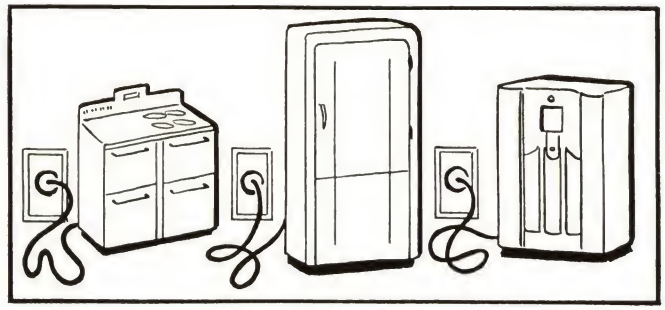
Everyone has had the experience of being caught in a traffic jam. Usually this occurs on a street or road built for traffic conditions of ten, fifteen or twenty years ago. Today, far-seeing road planners are designing roads that will take care of anticipated traffic conditions of future years. The two-lane horse and buggy roads are giving way to four, six and eight-lane concrete highways that will accommodate all types of vehicles.

Everyone that drives is conscious of inadequate, crowded highways. Yet, few recognize that most of the electrical highways in homes, public and commercial buildings are even more inadequate, even more crowded. Great as has been the increase in motor traffic in the past ten or fifteen years, electrical traffic has increased much more. For example, in 1926 the average home used 428 kilowatt hours per hour. In 1937, this consumption had risen to 793 kilowatt hours, an increase of 85 per cent.

There is every reason to expect as great an increase during the next decade, due to the impetus given the sales of heavy-duty appliances.

As indicated in the table below, the 1937 volume of electric ranges is almost four times that of '26 while in the same period electric water heater sales have risen 900%. This does not take into account electric ironers, roasters, air conditioning and similar equipment which requires heavier wiring for best operation. It is cheaper





SALES OF MAJOR DOMESTIC ELECTRIC APPLIANCES

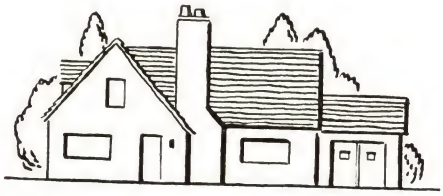
(Date Covers Number of Sales in Thousands for All Outlets)

1926-1937

Year	Flat Irons	Vacuum Cleaners	Elec. Washing Machines	Radio Sets	Elec. Ranges	Elec. Refrigs.	Elec. Clocks	Oil Burners	Wtr. Htrs.
				Sales by Years					
1937	4,040	1,313	1,480	7,631	405	2,369	3,000	224	115
1936	3,765	1,150	1,525	8,825	318	2,080	3,000	225	104
1935	3,700	906	1,229	6,107	215	1,590	9,300	165	70
1934	4,000	722	1,121	4,084	123	1,373	2,100	103	32
1933	2,430	548	967	3,806	50	1,065	2,000	85	13
1932	1,850	447	570	2,620	60	770	2,400	78	14
1931	2,150	687	812	3,420	115	949	2,800	95	23
1930	2,363	960	809	3,828	180	850	1,400	119	27
1929	3,150	1,253	956	4,438	153	840	400	120	25
1928	3,000	1,219	810	3,281	135	560	130	111	20
1927	3,000	1,195	776	1,350	103	390	95	81	15
1926	3,000	1,065	844	1,750	110	210	90	75	...

to foresee this demand and provide for it now than to rewire or provide additional or heavier capacity circuits a few years from now.

This is true for all types of buildings. Safety, economy, and dependability of service, dictate the advisability of originally planning for whatever type of electrical equipment may subsequently be installed.



IN HOMES, electric refrigerators, ranges and water heaters require heavy-duty circuits. Table appliances may be used in any room and should not be carried on lighting circuits. Automatic heating needs electrical provisions for controls, blowers, fans, etc. And so it is throughout every room in the house.



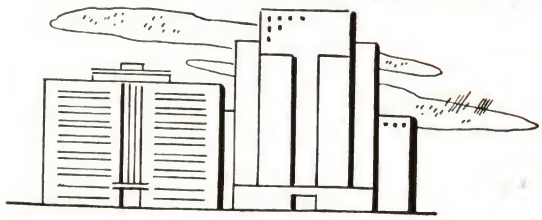
SCHOOLS AND OFFICES require provision for increase of lighting intensities—as well as public address systems, inter-communicating systems, fire alarms, radios, water cooling, motion picture and other modern equipment. Rapid increase in use of electric office devices such as adding and dictating machines, typewriters, etc., indicate the necessity of original planning of circuits to carry this traffic.



THEATRES, CHURCHES, AUDITORIUMS and similar structures are more and more meeting the public's demands for comfort and convenience and safety. Main and auxiliary lighting circuits, fire alarms and exit lights, front and back stage communication, radios, public address systems, elevators, water coolers, air conditioning, etc., all require careful electrical planning.

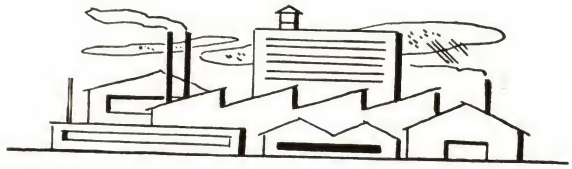


RETAIL STORES—General illumination, and lighting for windows, cases, and special displays require adequate wiring provisions. Stores selling electrical merchandise, or other products requiring lighting or power, need plenty of convenience outlets. Branch circuits for light and heavy loads, included in original design, allow flexibility in location of equipment and merchandise. Air conditioning, water coolers, and other convenience or comfort features should be foreseen. Office space will need provision for appliances, fans, supplementary lighting, etc.

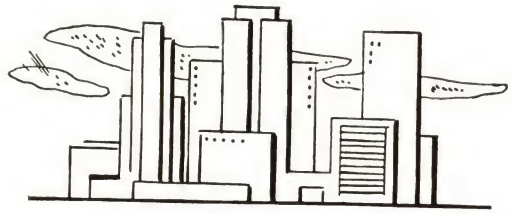


APARTMENTS AND HOSPITALS—Requirements of individual apartments parallel residence needs, with branch circuits, plenty of convenience outlets, and lines for heavy duty equipment such as ranges, air conditioners, refrigerators, etc. Especially important are conveniently located circuit protective devices. Separate circuits for public rooms and halls, and for fire exits, are recommended.

Hospital rooms need many convenience outlets—while for classrooms and auditoriums facilities for public address systems and motion picture equipment are indicated. Built-in radio power circuits, aerials and grounds are always desirable. Diet kitchens as well as main kitchens require refrigeration and range circuits. Lighting circuits are especially important, with adequate protection against excessive concentration on individual circuits. Provision for X-ray and other electrotherapeutic equipment should be adequate.



INDUSTRIAL BUILDINGS—Regardless of type of industry involved, certain fundamentals call for attention in electrical design of industrial buildings. Lighting circuits for working areas, office space, hallways, lavatories; appliance outlets in offices; air conditioning and water cooling requirements; cooking, water heating, and refrigeration for restaurants and cafeterias. While rewiring is usually less expensive in industrial plants than in most types of buildings, it is still sound economy to plan well in advance to take care of future requirements.



IN EVERY BUILDING—Every building, from small residence to huge manufacturing plant, has its own specific problem. In laying out wiring for all of these, certain fundamentals are important, such as:

1. Large enough wire to carry greatest anticipated future load.
2. Branch circuits to prevent overloading, with subsequent breakdown; and at least two circuits per room to prevent too wide-spread interruption of service.
3. Circuit protective devices to meet emergencies, and to enable quick restoration of power after service interruptions.
4. Sufficient outlets to provide flexibility in arrangement of furniture, lamps, etc.
5. Wall switches at convenient locations to provide a ready means of turning lights "on" and "off" without groping in the dark.

In other words, provide enough traffic lanes to carry the load; design them according to the type of load; install circuit protective devices to police them; and make it easy to restore service after "traffic jams" or other accidents.

RESIDENTIAL ELECTRIC PLANNING

Should Anticipate Future Requirements



To enjoy modern electrical conveniences, today, in many homes built a decade or less ago, often requires expensive revisions of electrical circuits, which might have been prevented by planning adequately when the house was built.

Houses being built today should anticipate future needs—by providing ample "Electric highways" to carry future as well as today's traffic. Installation of adequate wiring when the house is being built costs little more than "minimum" requirements—while to replace it or add to it in the future means greatly increased expense and inconvenience.

WIRE SIZES

Best practice recommends 3-wire circuits throughout the home, with wire sizes adequate to carry the maximum possible load on any circuit. Convenience outlets and lighting circuits should be served by No. 12 wire. The following table shows standard recommendations for Service Entrance, which are condensed from "The Handbook of Wiring Design."

Floor Area of Dwelling, Sq. Ft.	Number of Rooms	Size of Service Conductors Gauge No.	Main Circuit Bkr. Capacity
Up to 1,000	4	6	50 amperes
1,000–1,500	5	4	70 amperes
1,500–3,000	6–9	4	70 amperes
3,000–4,000	10–13	2	90 amperes

LOAD CENTERS

Provision should be made for suitable load centers, preferably of the "Nofuze" type. Lighting outlets in rooms with more than one entrance should have 3-way or 4-way switches, for safety and convenience.

PROVIDE SPACE AND OUTLETS FOR FUTURE NEEDS

Adequate wiring having been provided, floor plans should permit installation of such major appliances as washers, ironers, refrigerators, ranges, water heaters, air conditioners at the most advantageous locations. Even though all of these may not be installed when the home is being built, there is always the possibility that they will be added later if adequate and convenient space is provided.

KITCHEN AND LAUNDRY PLANNING

The new or modernized residence falls short of complete comfort and convenience if it does not include a planned kitchen and laundry.

The kitchen should be of sufficient size to provide adequate storage space, based on number of bedrooms in the house. Refrigerator size is of vital importance, wrong specifications resulting in dissatisfaction with produce. Equally important are proper organization and placement of the three work centers. A too-small, or misplaced work center can ruin an otherwise perfect kitchen.

Likewise, laundry planning is something to consider before building or modernizing. The clothes chute, for example, should end very near the stationary tubs, with room between chute terminal and tubs for a sorting table. Unless this is done, the housewife tramps needless miles every year. In other words, the laundry should be planned as a compact, convenient workroom, instead of a mere locating of stationary tubs.

The Westinghouse Home Planning Department, staffed by registered architects, has specialized on the planning of kitchens and laundries because of a desire to enable users to get the greatest possible enjoyment and use from Westinghouse appliances. Principles of planning have been developed by using the entire country as a proving ground. More than 5,000 homes have been carefully studied.

The results of this specialized research are available to architects in the form of definite principles which can be readily applied both in new construction and in modernizing. Basic principles of kitchen planning are explained on pages 28 and 29. Laundry planning principles are set forth on page 35. The Westinghouse Home Planning Department invites architects to make full use of these principles and plans. The department is always available in a consulting capacity on this type of planning. Address inquiries to Westinghouse Electric & Mfg. Co., Home Planning Dept., Mansfield, Ohio.

CONVENIENCE OUTLETS

Convenience outlets should provide for the use of floor and table lamps and table appliances, the latter even in living rooms and bedrooms. Electric clocks, radios, toasters, waffle irons, coffee makers and other appliances are apt to be used almost anywhere in the house, and circuits and outlets should be provided, separate from lighting circuits.

The table on the next page may be used as a guide for laying out both wiring and outlets; the list of domestic electric servants, cross-referenced to the product pages, will enable the planner to check his plans to see that all or most of these much used items are taken into account, either for immediate or for future use.

RESIDENTIAL WIRING AND CIRCUIT GUIDE

Rooms	Outlets	Control	Use and Remarks
Front Entrance	Ceiling or wall, outside Convenience	Switch inside Switch inside	For general illumination For decorative lighting
Side and rear doors	Ceiling or wall, outside	Switch inside	For general illumination
Covered porches	Ceiling Convenience—1 for each 100 sq. ft.	Switch inside Master switch inside	For general illumination Lamps, radios, appliances, etc.
Porches, terraces and patios	Convenience, each 15 ft. of wall	Switch inside	Lamps, radios, appliances, etc.
Halls and stairways	One ceiling or wall outlet One outlet for each 15 ft. of wall	3-Way switch Switch	To illuminate head or foot of staircase Supplementary illumination
Living rooms, bedrooms, reception hall, library, sun room, enclosed porches, recreation rooms, etc.	One ceiling outlet in each room Wall outlets as desired Convenience—not more than 12 ft. apart and in every usable wall space 3 ft. or more in length	Switch, with multiple control if doorways more than 10 ft. apart Wall Switch	For general illumination Supplementary illumination For lamps, radios, appliances, etc.
Dining room, dinette, breakfast room or nook, etc.	Ceiling Wall Convenience—at least two for each 100 sq. ft. located at least one in each wall	3-Way switch	For general illumination For decorative or supplementary illumination For table appliances
Kitchen, kitchenette, and pantry	Ceiling Supplementary outlets at range, sink, etc. Convenience outlets at every work surface Outlets	Switch	For general illumination For direct illumination For appliances, mixers, etc. Individual circuits for refrigerator, dishwasher, range For referigerator, range, dishwasher, clock, ventilating fan.
Bath rooms and lavatories	Ceiling Wall outlets Ceiling Convenience Convenience	Switch	For general illumination For mirrors For vapor-proof fixtures in completely enclosed shower compartment For electric razor, curling iron, etc. Not adjacent to tub For electric heater
Closets	Ceiling or wall		For illumination for any closet 3 ft. or more deep or more than 10 sq. ft. of floor area
Laundry	Ceiling Ceiling Outlets Convenience	Switch at entrance One combination switch, receptacle, and pilot light for connecting washer or ironer	Over tubs or trays Over ironer or iron board. Separate circuit for iron outlet and waterheater For hot water heater Hotplate, portable clothes dryer, etc.
General basement (If recreation room is provided in basement, see above for requirements)	Ceiling Ceiling Convenience—at least one	Wall switch and pilot light at head of stairs; switch at bottom In front of furnace, at work bench, and in each enclosed space	For illumination For illumination For general use
Unfinished attic	Ceiling Additional outlets for each enclosed space Convenience—at least one	Switch and pilot at foot of stairs	For illumination For illumination For general use
Garage	Ceiling over hood of each car Wall outlet, exterior Convenience—at rear wall at each car location, not less than 4 ft. above floor	Switch at door or other convenient location. In multiple garage, no more than 2 outlets on same switch Multiple control from garage or house	General illumination General illumination General use

SPECIAL CIRCUITS

Range — For ranges up to 8500 watts, three No. 8 wires will be satisfactory if the length of the circuit does not exceed 40 feet. For greater length, the circuit shall be not smaller than two No. 6 and one No. 8 wires and shall be carried to the range location and terminated in the wall or floor in accordance with local regulations.

Heaters — Water Heater Circuits of at least two No. 10 wires should be carried to suitable locations for each heavy duty heating unit planned for the kitchen, laundry, etc.

Water Pump — Where pressure water service is not available, two No. 12 wires should be carried to the pump location.

Oil Burner or Stoker — If an oil burner or automatic stoker is to be installed, a circuit consisting of two No. 12 conductors should be provided. Emergency switch control should be provided at cellar entrance.

Air Conditioning — If central air conditioning is planned, the wiring requirements should be based on the particular equipment chosen. Switch control.

Radio — At least three outlets with radio antenna and ground connections and power service in each 6 room or smaller house. Proportionately more in larger houses. Most often installed in living room, kitchen, bedrooms, and recreation room.

Telephone — At least one outlet box with concealed wiring on each active floor.

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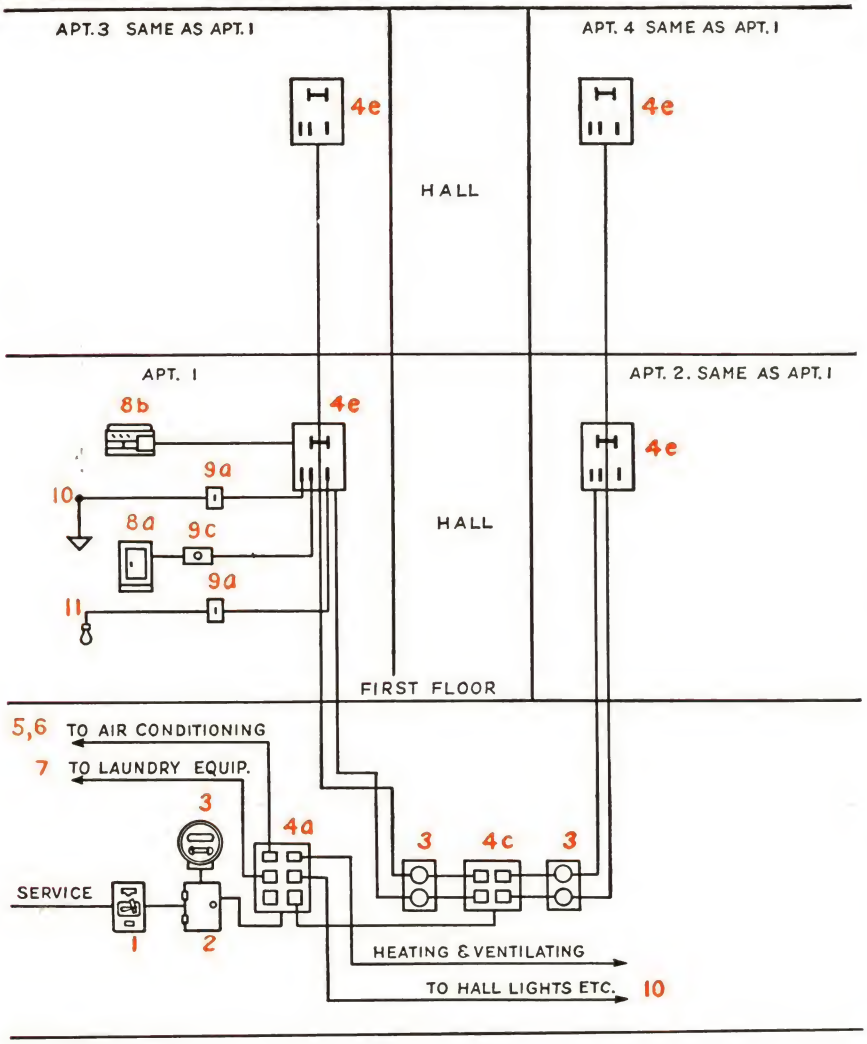
See page listed below for detailed information

1. Entrance Device
   - (a) Enclosed Breaker 13
   - (b) Safety Switch 14
   - (c) Nofuze Load Center 20
   - (d) Panelboard 17, 22
2. Current Transformers 43
3. Meter 43
4. Air Conditioning 38
5. Air Cleaning, Precipitron 44
6. Electric Laundry 35
   - (a) Washer 35
   - (b) Ironers 35
   - (c) Water Heaters 33
7. Electric Kitchen 28
   - (a) Ranges 32
   - (b) Refrigerators 30
   - (c) Dishwashers 34
8. Wiring Devices
   (See Section 23 for Bryant Electric Co. pages)
   - (a) Wall Switches
   - (b) Convenience Outlets
   - (c) Clock Outlets
   - (d) Fan Hangers
9. Lighting
   (See Section 24 for Westinghouse Lighting Fixtures)
   - (a) Indirect (Magnalux)
   - (b) Semi-Indirect (Lunaire, Lunalux)
   - (c) General Diffusing (Magnalaire)
   - (d) Direct (Flush Mounting Reflectors) (with Louvers, Industrial)
   - (e) Outdoor (Floodlights, Weatherproof Brackets)
10. Lamps 42-44
11. Wire and Cable ..... *
12. Conduit, BX, etc. ..... *
13. Outlet Boxes ..... *
14. Radio Equipment ..... *

*Not manufactured by Westinghouse. See agent-jobber listed on pages 46 and 47 for more information.

APARTMENTS AND APARTMENT HOTELS





CHECK LIST

PRODUCT	For details see page
1. Entrance Equipment	
(a) Switchboard	43
(b) Enclosed Breaker	13
(c) Safety Switch	14
(d) Power Panelboard	16
(e) Cubicles	43
(f) Metal Clad Switchgear	43
2. Current Transformer	43
3. Meter	43
4. Panelboards	
(a) Main Distribution	16
(b) Lighting	16
(c) Sub-Distribution	16
(d) Multi-Breaker	22
(e) Load Center	20
5. Air Conditioning	36
6. Air Cleaning, Precipitron	44
7. Laundry Equipment	
(a) Washers	35
(b) Ironers	35
8. Electric Kitchens	28
(a) Refrigerators	30
(b) Ranges	32
(c) Dishwashers	34
9. Wiring Devices (See Section 23 for Bryant Electric Co. pages)	
(a) Wall Switches	
(b) Door Switches	
(c) Convenience Outlets	
(d) Clock Outlets	
(e) Fan Hangers	
(f) Radio Outlets	
10. Lighting (See Section 24 for Westinghouse Lighting Fixtures)	
(a) Indirect (Magnalux)	
(b) Semi-Indirect (Lunaire, Lunalux)	
(c) General Diffusing (Sollaire, Sollux, Magnalaire, Sollite)	
(d) Direct (Flush Mounting Reflectors with Louvers, Industrial)	
(e) Outdoor (Floodlights, Weatherproof Brackets)	
11. Lamps	40
12. Water Coolers	39
13. Stokers	44
14. Capacitors	27
15. Motors and Control	24
16. Elevators	44
17. Wire and Cable	*
18. Conduit, BX, etc.	*
19. Outlet Boxes	*
20. Annunciator Systems	*
21. Fire Alarm Systems	*
22. Emergency Lighting	*
23. Telephone Systems	*
23. Radio Equipment	*

*Not manufactured by Westinghouse. See Westinghouse agent-jobber listed on pages 46 and 47 for more information.

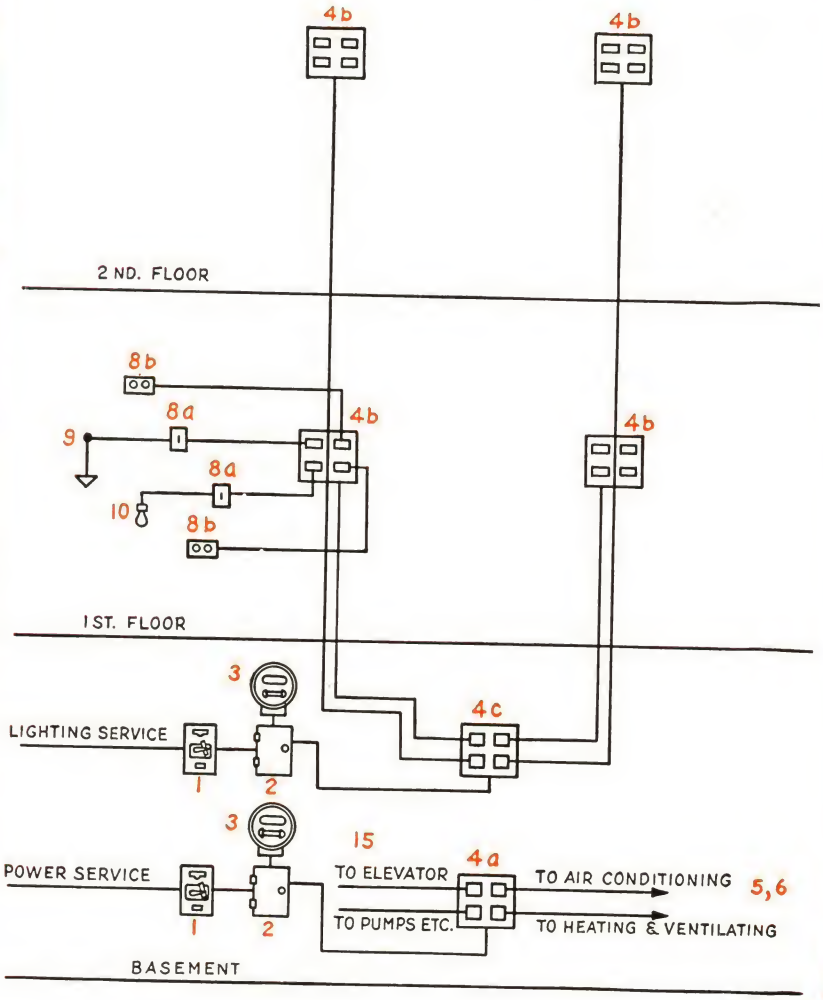
HOTELS, HOSPITALS, CLUBS AND SCHOOLS

CHECK LIST

PRODUCT	Hotels	Hospitals	Clubs	Schools	For details see page
1. Entrance Equipment					
(a) Switchboard	x	x	x	x	43
(b) Enclosed Breaker	x	x	x	x	13
(c) Safety Switch	x	x	x	x	14
(d) Power Panelboard	x	x	x	x	16
(e) Cubicles	x	x	x	x	43
(f) Metal Clad Switchgear	x	x	x	x	43
2. Current Transformer	x	x	x	x	43
3. Meter	x	x	x	x	43
4. Panelboards					
(a) Main Distribution	x	x	x	x	16
(b) Lighting	x	x	x	x	16
(c) Sub-Distribution	x	x	x	x	16
(d) Multi-Breaker	x	x	x	x	22
(e) Load Center	x	x	x	x	20
5. Air Conditioning	x	x	x	x	36
6. Air Cleaning, Precipitron	x	x	x	x	44
7. Electric Kitchens					28
(a) Refrigerators		x		x	30
(b) Ranges			x	x	32
(c) Dishwashers		x	x		34
(d) Water Heaters		x	x	x	33
8. Wiring Devices					
(See Section 23 for Bryant Electric Co. pages)					
(a) Wall Switches	x	x	x	x	
(b) Door Switches	x	x	x	x	
(c) Convenience Outlets	x	x	x	x	
(d) Clock Outlets	x	x	x	x	
(e) Fan Hangers	x	x	x	x	
(f) Radio Outlets	x	x	x	x	
(g) Signaling Devices		x			
9. Lighting					
(See Section 24 for Westinghouse Lighting Fixtures)					
(a) Indirect (Magnalux, Silvurn, TI, MB, GB)	x	x	x	x	
(b) Semi-Indirect (Lunaire, Lunalux)	x	x	x	x	
(c) General Diffusing (Sollaire, Sollux, Sollite)	x	x	x	x	
General Diffusing (Magnalaire)	x	x	x		
(d) Direct (Flush Mounting Reflectors with Louvers)	x		x	x	
Direct (Miscellaneous Industrial Apparatus)	x	x		x	
(e) Outdoor (Floodlights, Weatherproof)	x	x	x	x	
10. Lamps	x	x	x	x	40
11. Water Coolers		x	x	x	39
12. Stokers	x	x	x	x	44
13. Capacitors	x	x	x	x	26
14. Motors and Control	x	x	x	x	24
15. Elevators	x	x	x	x	44
16. X-Ray Equipment		x			44
17. Wire and Cable	x	x	x	x	*
18. Conduit, BX, etc.	x	x	x	x	*
19. Outlet Boxes	x	x	x	x	*
20. Annunciator Systems	x	x	x	x	*
21. Fire Alarm Systems	x	x		x	*
22. Emergency Lighting	x	x	x	x	*
23. Telephone Systems	x	x	x	x	*
24. Master Clock and Program System				x	*
25. Duct System	x	x	x	x	*

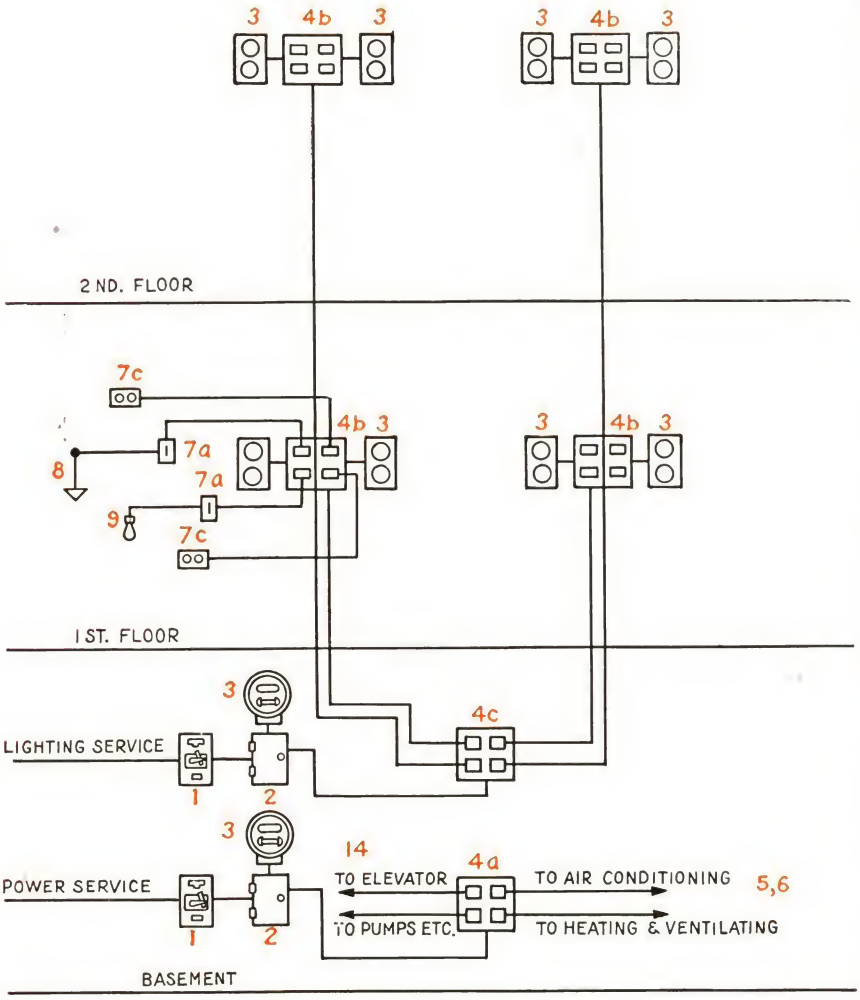
* Not manufactured by Westinghouse. See agent-jobber listed on pages 46 and 47 for more information.





OFFICE BUILDINGS





CHECK LIST

PRODUCT	For details see page
1. Entrance Equipment	
(a) Switchboard	43
(b) Enclosed Breaker	13
(c) Safety Switch	14
(d) Power Panelboard	16
(e) Cubicles	43
(f) Metal Clad Switchgear	43
2. Current Transformer	43
3. Meter	43
4. Panelboards	
(a) Main Distribution	16
(b) Metering	†
(c) Sub-Distribution	16
(d) Lighting	16
(e) Multi-Breaker	22
(f) Load Center	20
5. Air Conditioning	36
6. Air Cleaning, Precipitron	44
7. Wiring Devices (See Section 23 for Bryant Electric Co. pages)	
(a) Wall Switches	
(b) Door Switches	
(c) Convenience Outlets	
(d) Clock Outlets	
(e) Fan Hangers	
8. Lighting (See Section 24 for Westinghouse Lighting Fixtures)	
(a) Indirect (Magnalux, Silvurn, TI, MB, GB)	
(b) Semi-Indirect (Lunaire, Lunalux)	
(c) General Diffusing (Sollaire, Sollux, Sollite)	
(d) Outdoor (Weatherproof Brackets)	
9. Lamps	40
10. Water Coolers	39
11. Stokers	44
12. Capacitors	27
13. Motors and Control	24
14. Elevators	44
15. Wire and Cable	*
16. Conduit, BX, etc.	*
17. Outlet Boxes	*
18. Annunciator Systems	*
19. Fire Alarm Systems	*
20. Emergency Lighting	*
21. Telephone Systems	*
22. Duct Systems	*

* Not manufactured by Westinghouse. See agent-jobber listed on pages 46 and 47 for more information.

† See Westinghouse office.

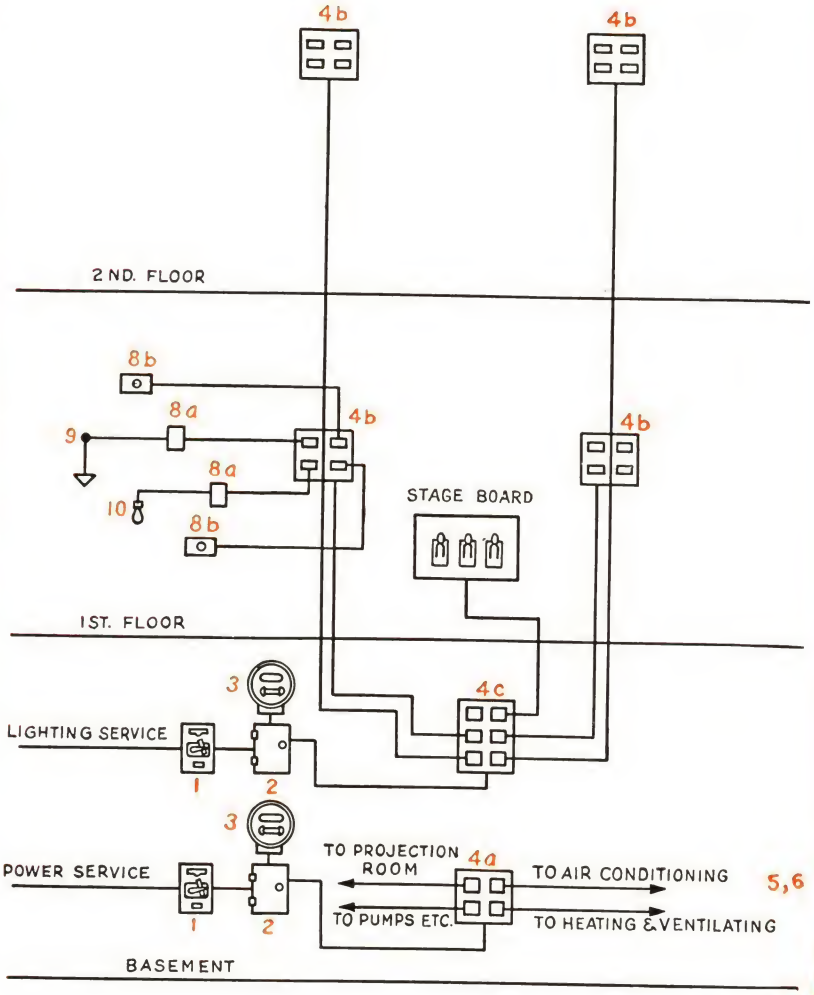
THEATRES, CHURCHES AND AUDITORIUMS

CHECK LIST

PRODUCT	Theatres	Auditoriums	Churches	For details see page
1. Entrance Equipment				
(a) Switchboard	x	x	x	43
(b) Enclosed Breaker	x	x	x	13
(c) Safety Switch	x	x	x	14
(d) Power Panelboard	x	x	x	16
(e) Cubicle	x	x	x	43
(f) Metal Clad Switchgear	x	x	x	43
2. Current Transformer	x	x	x	43
3. Meter	x	x	x	43
4. Panelboards				
(a) Main Distribution	x	x	x	16
(b) Lighting	x	x	x	16
(c) Sub-Distribution	x	x	x	16
(d) Multi-Breaker	x	x	x	22
(e) Load Center	x	x	x	20
5. Air Conditioning	x	x	x	36
6. Air Cleaning, Precipitron	x	x	x	44
7. Electric Kitchens				28
(a) Refrigerators			x	30
(b) Ranges		x	x	32
(c) Water Heaters			x	33
8. Wiring Devices (See Section 23 for Bryant Electric Co. pages)				
(a) Wall Switches	x	x	x	
(b) Convenience Outlets	x	x	x	
(c) Clock Outlets	x	x	x	
(d) Fan Hangers	x	x	x	
9. Lighting (See Section 24 for Westinghouse Lighting Fixtures)				
(a) Indirect (Magnalux, Metal Bipost, Glass Bipost)	x	x	x	
Indirect (Silvurn, TI)		x	x	
(b) Semi-Indirect (Lunaire, Lunalux)			x	
(c) General Diffusing (Sollaire, Sollux, Magnalaire, Sollite)			x	
(d) Direct (Flush Mounting Reflectors with Louvers)	x	x		
Direct (Miscellaneous Industrial)	x			
(e) Outdoor (Floodlights)	x		x	
Outdoor (Weatherproof Brackets)	x	x	x	
10. Lamps	x	x	x	40
11. Water Coolers	x	x	x	39
12. Stokers	x	x		39
13. Capacitors	x	x	x	26
14. Motors and Control	x	x	x	24
15. Wire and Cable	x	x	x	*
16. Conduit, BX, etc.	x	x	x	*
17. Outlet Boxes	x	x	x	*
18. Annunciator Systems	x	x	x	*
19. Fire Alarm Systems	x	x	x	*
20. Emergency Lighting	x	x	x	*
21. Telephone Systems	x	x	x	*
22. Public Address System		x		*
23. Duct Systems	x	x	x	*

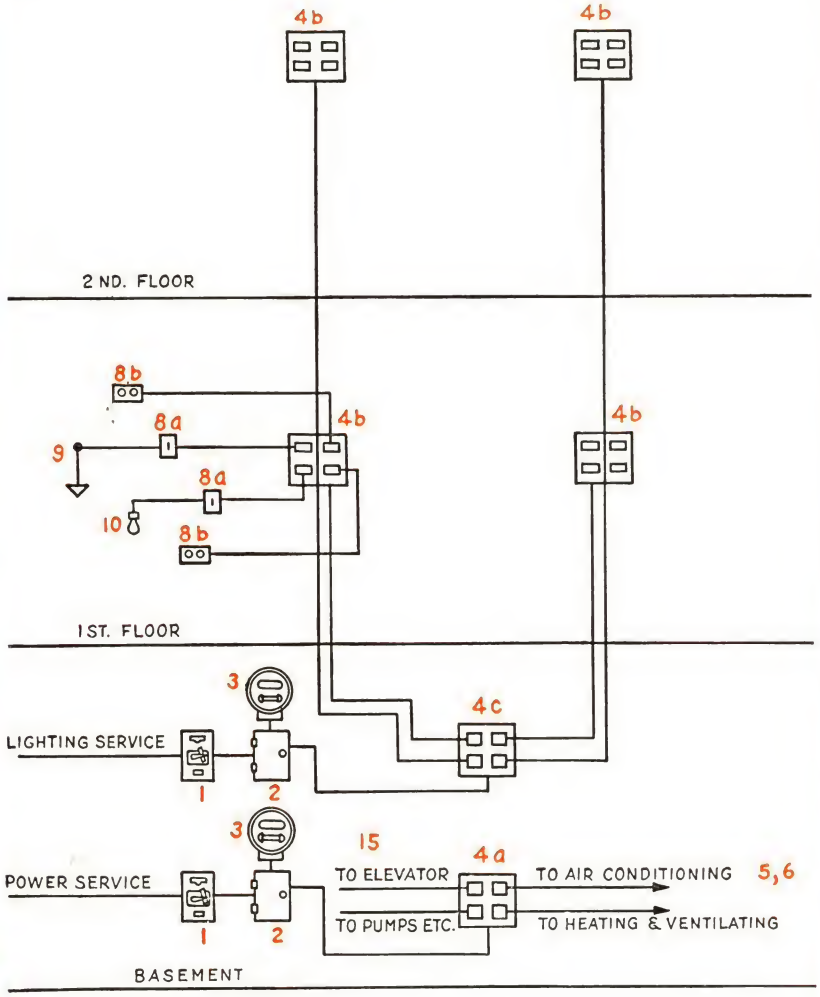
* Not manufactured by Westinghouse. See agent-jobber listed on pages 46 and 47 for detailed information.





STORES AND RESTAURANTS





CHECK LIST

PRODUCT	Stores	Restaurants	For details see page
1. Entrance Equipment			
(a) Switchboard	x	x	43
(b) Enclosed Breaker	x	x	13
(c) Safety Switch	x	x	14
(d) Power Panelboard	x	x	16
(e) Cubicles	x	x	43
(f) Metal Clad Switchgear	x	x	43
2. Current Transformer	x	x	43
3. Meter	x	x	43
4. Panelboards			
(a) Main Distribution	x	x	16
(b) Lighting	x	x	16
(c) Sub-Distribution	x	x	16
(d) Multi-Breaker	x	x	22
(e) Load Center	x	x	20
5. Air Conditioning	x	x	36
6. Air Cleaning, Precipitron	x	x	44
7. Electric Kitchen			28
(a) Refrigerator		x	30
(b) Range	x		32
8. Wiring Devices (See Section 23 for Bryant Electric Co. pages)			
(a) Wall Switches	x	x	
(b) Convenience Outlets	x	x	
(c) Clock Outlets	x	x	
(d) Fan Hangers	x	x	
(e) Radio Outlets	x	x	
9. Lighting (See Section 24 for Westinghouse Lighting Fixtures)			
(a) Indirect (Magnalux, Silvurn, TI, MB, GB)	x	x	
(b) Semi-Indirect (Lunaire, Lunalux)	x	x	
(c) General Diffusing (Sollaire, Sollux, Sollite, Magnalaire)	x		
(d) Semi-Direct (Storlite)	x		
(e) Direct (Flush Mounting Reflectors with Louvers, Miscellaneous Industrial Apparatus)	x	x	
(f) Outdoor (Weatherproof Brackets)	x	x	
10. Lamps	x	x	40
11. Water Coolers	x	x	39
12. Stokers	x		44
13. Capacitors	x	x	26
14. Motors and Control	x	x	24
15. Elevators	x		44
16. Wire and Cable	x	x	*
17. Conduit, BX, etc.	x	x	*
18. Outlet Boxes	x	x	*
19. Fire Alarm Systems	x		*
20. Emergency Lighting	x		*
21. Telephone System	x		*
22. Duct System			*

* Not manufactured by Westinghouse. See agent-jobber listed on pages 46 and 47 for more information.

ENCLOSED "DE-ION" NOFUZE CIRCUIT BREAKERS
TYPE ABI



TYPE ABI 100 AMP. INDUSTRIAL BREAKER. SURFACE-MOUNTING DUST-RESISTING ENCLOSURE. 250 VOLTS D-C., 600 VOLTS A-C. MAX.





ABI LIGHT DUTY BREAKER WITH COVER REMOVED, 125/250 VOLTS



TYPE ABI BREAKER IN CAST ALUMINUM WEATHER-RESISTING ENCLOSURE, 250 VOLTS D-C., 600 VOLTS A-C. MAX.



EXPLOSION-RESISTING 50 AMPERE, TYPE ABI "NOFUZE" BREAKER, 250 VOLTS D-C., 600 VOLTS A-C. MAX.

APPLICATION

ABI Circuit Breakers are ideally adapted for the protection of electrical circuits. Ratings are available in single, double and triple pole from 15 amperes up to 50 amperes, 125/250 volts a-c. or d-c.; 15 amperes up to and including 600 amperes, 2 and 3 pole rated 230 volts a-c., 125/250 volts d-c., 250 volts d-c. and 600 volts a-c. Enclosures for practically all applications are available; sheet steel, sheet steel dust-resisting, cast iron or aluminum weather-proof and explosion-proof.

FEATURES

FUSELESS CIRCUIT PROTECTION. Operation is of the thermal principle and tripping is accomplished by bi-metals. There are no elements to renew after circuit interruption.

TIME DELAY TRIPPING. The inverse-time-limit feature of the bi-metallic trip elements prevent unnecessary tripping on momentary overloads, but provides instantaneous tripping on heavy short circuits.

TRIP FREE HANDLE. It is impossible to hold the circuit breaker closed against abnormal overloads or short circuits.

TAMPER PROOF. The tripping mechanisms are sealed to prevent unauthorized changing of calibration.

HOW TO SELECT

Breakers are calibrated to conform to commercial wire sizes. The Proper breaker should be selected from the table on page 23.

1—If circuits feed motors, select rating of branch circuit breaker from Westinghouse Application Data 29-500.

DIMENSIONS AND RATINGS

See Westinghouse Catalog 29-500.

TYPICAL SPECIFICATIONS

Enclosed circuit breakers shall be of the De-ion thermal type either 2 or 3 pole, 250 volts, d-c. or 600 volts, a-c. with trip elements calibrated from 15 to 600 amperes as indicated on the plans or specified herein.

THE ENCLOSURE shall be constructed of code gauge steel protected with a baked black japan finish, Cast Aluminum Water and Dust-Tight, Cast Iron Water and Dust-Tight or Cast Iron Explosion Resisting as indicated on plans or specified herein. The enclosure shall have a front-operated handle with a bracket that permits the use of three padlocks for locking in the "off" position. The code gauge steel enclosure is to be gasketed to make it dust-resisting and the cover interlocked so that it can be opened only when the breaker is in the "off" position.

The enclosure shall be equipped with a 2-way centering cover latch with knockouts for padlocking or sealing the cover in place.

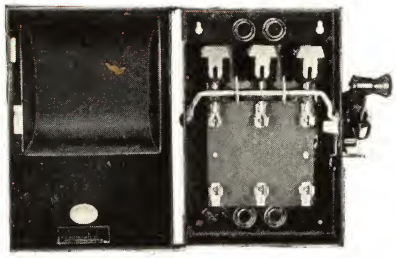
AUTOMATIC CIRCUIT BREAKER (See page 15 Spec. A for detailed circuit breaker specifications.)

WHERE TO BUY

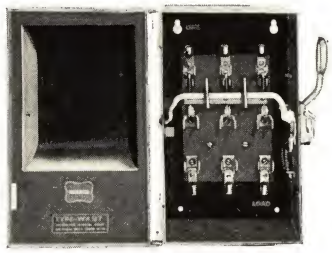
See your nearest Westinghouse district office or agent jobber. For complete information on ABI circuit breakers request a copy of Catalog Section 29-500. Addresses of local offices are given on the back cover.

W WESTINGHOUSE ELECTRIC

SAFETY SWITCHES



60 AMP. TYPE A, QUICK-MAKE AND QUICK-BREAK INTERLOCKING SAFETY SWITCH, 575 VOLTS, EQUIPPED WITH DE-ION ARC QUENCHERS



60 AMP. TYPE C, QUICK-MAKE AND QUICK-BREAK SAFETY SWITCH, 250 VOLTS



100 AMPERE TYPE D SLOW MAKE, QUICK BREAK SAFETY SWITCH, 250 VOLTS

APPLICATION

Used for service entrance and the protection of motor and feeder circuits. Available in standard ratings from 30 to 1200 amperes (NEMA sizes), 125/250 volts a-c. or d-c., to 600 volts d-c., 575 volts a-c. fusible and non-fusible.

FEATURES

DIAMOND POINTED BREAK JAW and EXTENDED BLADE construction, used on all switches, carries the arcing outside the contact area.

FRONT REMOVABLE one-piece copper parts are used.

"DE-ION" ARC QUENCHER. The Westinghouse "De-ion" arc quencher is used on all 575 and 600 volt switches. It consists of a series of cadmium plated, slotted steel plates so mounted that the blades of the switch must pass through the slot when the switches are being opened. The arc is divided, cooled and deionized by these plates, causing it to be extinguished instantly.

HOW TO SELECT

Type A switches are quick make and quick break with interlocked door; Type C switches are quick make and quick break; Type D are quick break. A switch of the rating desired and type required by the application should be selected.

DIMENSIONS

See Westinghouse Catalog 29-500.

TYPICAL SPECIFICATIONS

Safety switches shall be of type (A), (C), (D) construction, and shall be fusible or non-fusible as required with ratings as indicated on the plans or as specified herein.

Type "A" Switches shall be Westinghouse or equivalent, externally operated with a quick make and quick break mechanism, and shall be provided with a mechanical interlock to prevent the door being opened unless switch is in the "off" position.

Type "C" Switches shall be Westinghouse or equivalent, externally operated with a quick make and quick break mechanism.

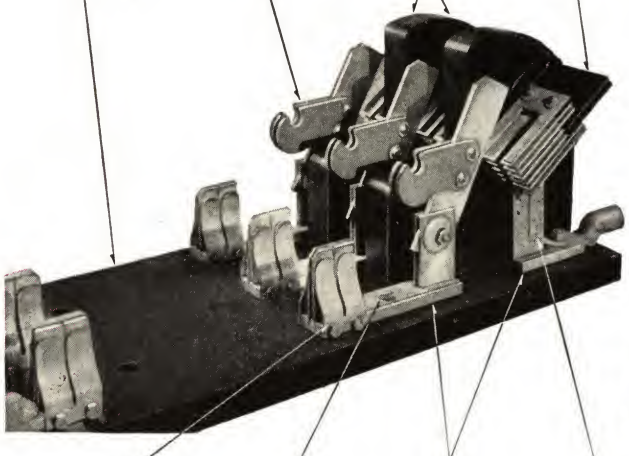
Type "D" Switches shall be Westinghouse or equivalent, externally operated with a quick break mechanism.

All Safety Switches shall conform with the requirements and have the approval of Underwriters' Laboratories, Inc.

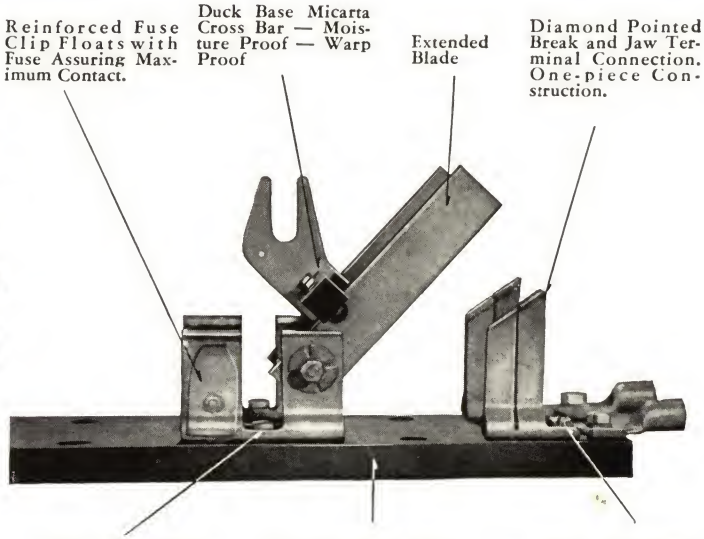
WHERE TO BUY

See your nearest Westinghouse Agent Jobber listed on back cover. For complete information request catalog 29-500.

DISTINCTIVE FEATURES

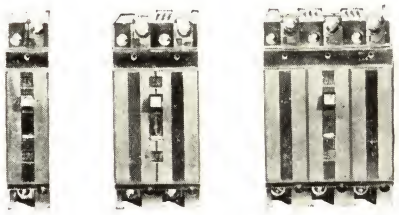


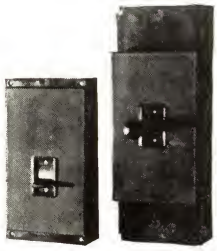
BASE ASSEMBLY FOR TYPE A SWITCH, 400 AMPERES, 575 VOLTS



BASE ASSEMBLY FOR TYPE A SWITCH, 100 AMPERES 250 VOLTS

TYPICAL SPECIFICATIONS FOR AUTOMATIC CIRCUIT BREAKERS





"AB" DE-ION SWITCHBOARD AND PANELBOARD BREAKERS 600 AMPERES AND BELOW

TYPICAL SPECIFICATION A

De-ion Circuit Breakers 600 Amperes and Below

Except for circuit breakers in lighting panelboard branch circuits which shall be single pole calibrated at 15 ampere, automatic circuit breakers shall be 2 pole or 3 pole, with trip elements calibrated for 15 to 600 amperes, in wire size capacities as shown on plans. Multi-pole breakers shall be so designed that all poles will break simultaneously and all poles shall be effectively barried from one another. All breakers shall be approved by the Underwriters for at least 250 volt a-c. per pole.

Breakers of 50 ampere frame capacity or less shall be unit type with permanent trip elements. Breakers of 70 to 600 ampere capacity shall have removable trip elements for ready interchangeability.

Pole spacing on all 50-A frame breakers shall be uniform. Pole spacing on 100 to 600 ampere frames shall be uniform and twice that of the 50 ampere frame.

Automatic tripping of 50 ampere frame breakers is to be secured by means of a bimetallic thermal element on each pole engaging a common trip. All breakers above the 50 ampere frame size shall have a similar trip arrangement supplemented by an instantaneous trip on current values not less than 5 times normal and above. The trip of elements shall insure constant calibration and be capable of withstanding excessive short circuit conditions without injury.

The individual tripping elements shall be enclosed and sealed in units of approved molded composition to eliminate tampering or unauthorized changes in calibration.

The circuit breakers shall have inverse-time-limit characteristics, so that tripping will be prevented on momentary overloads but will occur before dangerous values are reached.

The breakers shall be operable in any position and removable from the front of panelboard without disturbing adjacent units.

The mechanism shall trip free from the handle so that contacts cannot be held closed against short circuit or abnormal overloads.

The breaker shall have a quick make and quick-break toggle mechanism whether actuated automatically or manually. Contacts shall be non-welding under operating conditions. The stationary contacts shall be an integral part of the breakers.

Automatic tripping shall be positively indicated from the manual "on" and "off" by the position of the handle.

Current-carrying parts, except thermal elements, if of copper or copper alloy, shall not rise in temperature in excess of 30 deg. C. while carrying rated current at rated frequency.

All individual breakers shall bear the Underwriters' Laboratories Inspection Label.

TYPICAL SPECIFICATION B

Air Circuit Breakers Above 600 Amperes*

Air Circuit Breakers shall be rated (select rating).
480 volts a-c. or 250 volts d-c. without Barriers
650 volts a-c. or 750 volts d-c. with Barriers
Breakers shall have interrupting capacities of: (specify)
20,000 amps. 40,000 amps. 60,000 amps. 80,000 amps.

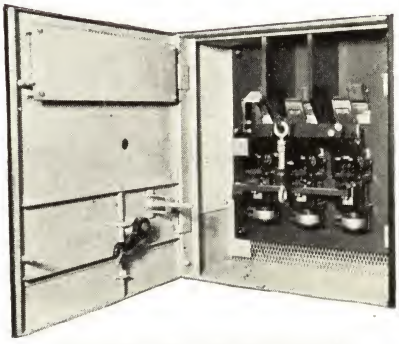
Amp. capacities and number of poles shall be as indicated on the drawings or as specified herein.

Silver shall be furnished on the main contact surfaces. All main conductors shall be of high conductivity copper. Arcing and auxiliary contacts shall provide adequate protection to the main contacts when opening current.

The breakers shall be of the type known as "trip free" which cannot be held closed on overload. The latch tripping device shall have a preliminary movement so that the tripping point will be independent of latch friction.

All breaker parts shall be easily accessible for inspection and repairs. The breaker frame will be of sturdy construction, yet provide accessibility to both the upper and lower main contacts, and working parts. Means shall be provided for reducing the shock incident to breaker opening and also for preventing excessive rebound of the mechanism or contacts, once they have opened.

The breaker mechanism shall conform with N.E.M.A. Standards for live frame construction, and shall be furnished with insulated handles. The mechanism shall be so designed that equal pressures will be maintained on both the upper and lower contacts, when the breaker is closed.



DEAD FRONT SWITCHBOARD MOUNTED AIR CIRCUIT BREAKER (COVER DOOR OPEN)

Circuit breakers shall be provided with

SELECT REQUIREMENTS	Series Overload Trip attachment (1, 2 or 3) Inverse Time Limit attachment Shunt Trip attachment (Give control voltage) Under Voltage attachment Reverse Current attachment Auxiliary Switches (A and B stages required) Bell Alarm Switch Field Discharge Switch and arranged for
SELECT DESIRED METHOD OF OPERATION	Manual D-C. Solenoid (..... volts) A-C. Rectox Solenoid operation

The millivolt drop shall not exceed 4 millivolts across each contact at rated current. No circuit breaker shall exceed a temperature rise of 30° C. on the contacts, when carrying its rated load at 40° C. ambient, in accordance with N.E.M.A. Standards.

*Also available with trip elements calibrated in ratings from 15 amperes up when high interrupting capacity is required.

WESTINGHOUSE ELECTRIC

NOFUZE PANELBOARDS

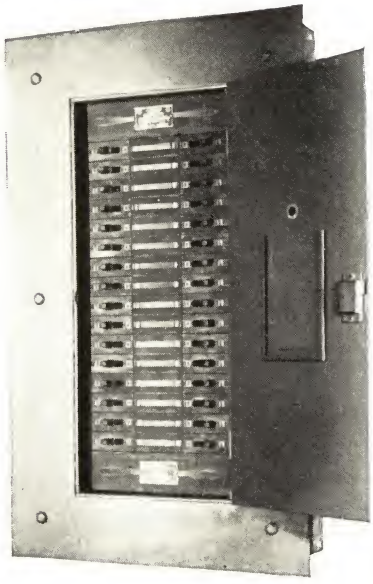


NOFUZE CONVERTIBLE DISTRIBUTION PANELBOARD



MODERNISTIC FLUSH TYPE LOCK

LIGHTING BRANCH CIRCUIT PANELBOARD



APPLICATION

Nofuze panelboards are used for the distribution of secondary electrical energy for power and lighting circuits of 600 volts a-c. or 250 volts d-c. and below with capacities from 15 to 600 amperes, one, two and three poles.

There are three types of Nofuze panelboards (not including the Multi-Breaker Panelboard):

1—Convertible distribution panelboards.
2—Low capacity distribution panelboards
3—Lighting branch circuit panelboards

CONVERTIBLE (OR HIGH CAPACITY PANELBOARDS) are available with two or three pole main and branch breakers in capacities from 15 to 600 amperes.

LOW CAPACITY DISTRIBUTION PANELBOARDS are designed for low capacity power and lighting applications in which the capacity of any branch circuit need not exceed 50 amperes, 230 volts a-c. although one feeder up to 225 ampere capacity may be supplied. Main lugs up to 400 ampere capacity or main breakers up to 225 ampere capacity can be supplied.

NOFUZE LIGHTING BRANCH CIRCUIT BREAKERS are used for protecting and controlling branch lighting circuits. They are available in ratings from 15-50 ampere, 230 volt a-c. or 125 volt d-c. with from 4 to 42 single pole branch breakers and from 4 to 20 two-pole branch breakers, either with or without main breakers.

FEATURES

ELIMINATES FUSES AND SWITCHES—The use of Nofuze "De-ion" circuit breakers in mains and branches gives full circuit protection and makes the use of switches and fuses unnecessary.

ATTRACTIVE APPEARANCE—Cabinet Fronts finished in an attractive olive green Duco. The modernistic chromium plated combination lock and catch, and flush type hinges adds to the finished appearance of the front.

HOW TO SELECT

Before laying out a panel, all circuit capacities must be carefully checked for the following three requirements:

1—If circuits feed motors, select rating of branch circuit breaker from Westinghouse Application Data 29-500.

2—For all circuits other than motor circuits, it is essential that the branch circuit wire size be known so that a breaker of the proper capacity is used and not one of a capacity larger than the wire size it is protecting. Nofuze De-ion Breakers are rated by ampere capacities corresponding to the current carrying capacity of commercial rubber covered wire. See table, page 23.

3—The actual load on the circuit should be given full consideration, so that in case an extra heavy wire is being used to avoid voltage drop, a breaker larger than necessary to carry the load is not used. For instance, a No. 00 (150 ampere) wire might be used to avoid voltage drop when under ordinary circumstances a No. 1 wire would be satisfactory, since the actual load being carried is not over 100 amperes. In this case a 100-ampere breaker would be satisfactory as it would afford full protection to the wire being used, and at the same be able to carry the load.

LIGHTING BRANCH CIRCUIT PANELBOARDS may be selected from the tables on page 18.

NARROW OR LOW CAPACITY DISTRIBUTION PANELBOARDS may be selected from the tables on page 19.

CONVERTIBLE OR HIGH CAPACITY DISTRIBUTION PANELBOARDS are built to order according to requirements. To determine the layout for specific requirements, it is necessary to determine the number of "X" areas as explained below.

DIMENSIONS

Dimensions for LIGHTING BRANCH CIRCUIT PANELBOARDS and LOW CAPACITY DISTRIBUTION PANELBOARD CABINETS are 20 inches wide, 5¾ inches deep and of the height given in the tables on page 18 and page 19.

CONVERTIBLE OR HIGH CAPACITY PANELBOARDS:

Determine the number of "X" areas required for the complete panel, and then the dimensions may be obtained from the tables on page 19.

TO DETERMINE THE NUMBER OF X AREAS—In the construction of the panelboards, three types of sections are employed. These are designated as "A," "B," and "C" sections. The "A" sections accommodate the 50 and 100-ampere frame breakers and have a length equal to one-half the width of the panel (two rows of "A" sections being necessary to make up the complete width). The "B" section extends the full width of the panel and accommodates the 225-ampere frame breaker, as well as the neutral and main lug sections. The "C" sections are 2 inches longer (the horizontal dimension when assembled) than the "B" sections, but otherwise are the same and accommodate the 400 and 600-ampere frame breakers. All sections, however, can be assembled in the same panel.

In order to facilitate laying out the panel, it has been split up into units of area called "X" which are one-half the panel width

and 1⅜ inches high. Each branch circuit, or frame size, is a multiple of "X" units. Diagram shows the correct number of "X" units per section or frame size. For instance, a 3-pole, 100 ampere frame breaker requires a space of 6X. This being an "A" section means that it occupies one-half the width of the panel and is 8¼ inches high. A 3-pole, 225 ampere frame breaker occupies a space of 12X but is a type "B" section. Therefore, it is only 8¼ inches high, since it extends the full width of the panel.

The neutral section, when the panel has main lugs only, is always placed at the opposite end of the panel from the main lugs and its main feed lug is brought to the main lug section. Under these conditions the neutral section occupies 6X space when the capacity of its largest branch lug is not over 400 amperes.

When a neutral section is required on panels having a main breaker, it is placed at the same end of the panel as the main breaker. In such cases its space requirements should be the same as a main lug section of capacity equal to main breaker capacity.

TYPICAL SPECIFICATIONS

CIRCUIT BREAKERS—(See page 15, Circuit breaker specification A.)

PANELBOARDS—Furnish and install where shown on plans or specified, panelboards mounted in enclosing cabinets on which shall be mounted equipment, as required, specified or shown in the drawings.

Panelboards shall be of the dead front type and shall be equipped with automatic branch circuit breakers for each branch circuit. Automatic branch circuit breakers shall conform to the detailed specifications as hereinafter specified. Number of branch circuits shall be as indicated on plans, specified or required by the number of branch circuits which will be connected to the panel.

Panelboards shall be of the unit type construction so designed that individual units can be removed from the front of the panel without disturbing adjacent units after first removing the trim.

Current carrying parts exclusive of circuit breakers shall be based on a maximum density of 1000 amp. per square inch.

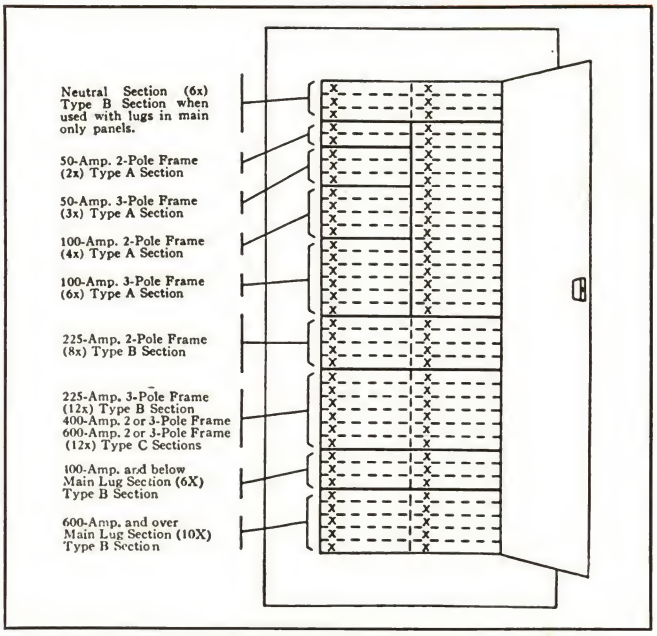
Panelboards shall have bus bars and branch circuits designed to suit the system and voltage.

CONVERTIBLE OR HIGH CAPACITY DISTRIBUTION PANELBOARDS
PANEL AND BOX DIMENSION DATA

All Inside Dimensions, in Inches

Total "X" Panel Space (obtained from diagram above)	Panel Only Height, Inches	Main Bus Capacity	
		100, 200 and 400-Ampere Box Height Inches	600, 800 and 1000-Ampere Box Height Inches
24X	16½	29½	35
25X to 32X	22	35	40½
33X to 40X	27½	40½	46
41X to 48X	33	46	51½
49X to 56X	38½	51½	57
57X to 64X	44	57	62½
65X to 72X	49½	62½	68
73X to 80X	55	68	73½
81X to 88X	60½	73½	79
89X to 96X	66	79	84½

LARGEST BREAKER IN THE PANEL	Box Width	Box Depth
FOR 50, 100 AND 225-AMPERE FRAME SIZE 2 AND 3-POLE BREAKERS	30 Inches	8 Inches
FOR 226 TO 400-AMPERE, 2 AND 3-POLE BREAKERS—With or Without 50, 100 and 225-Ampere Frame Sizes	35 Inches	10 Inches
FOR 401 TO 600-AMPERE, 2 AND 3-POLE BREAKERS—With or Without 50, 100, 225 or 400-Ampere Frame Sizes	40 Inches	10 Inches



LAYOUT DIAGRAM USED WITH NOFUZE CONVERTIBLE DISTRIBUTION PANELBOARDS

Bus bars shall run up the center of the panel and shall have connected thereto the various branch circuits.

Unless otherwise specified, bus bars for each panelboard shall be equipped with main lugs only, the capacity of which shall be as required and shown on the plans. Where main protection is required automatic circuit breakers shall be used.

All current carrying parts exclusive of circuit breakers shall be of copper firmly fastened to the panelboard and arranged so as not to be displaced during installation.

Where several panelboards are fed by one feeder, solid through connections shall be made in the gutters as required.

Unless otherwise specified all panelboards shall be mounted in enclosing cabinets consisting of a code gauge, sheet steel box with trim and door. The box shall be manufactured from commercial galvanized sheet steel with corners lapped and riveted or by other approved methods. The trim shall be manufactured from one piece of full finish sheet steel (not galvanized).

Cabinets shall be of sufficient size to allow a gutter space of at least 4 inches on all sides around lighting panelboards.

Trim shall be fastened to cabinet by means of approved adjustable clamps.

Doors and trims of enclosing cabinet for lighting panelboards shall be painted with two coats of paint, the first being a primary coat and the second a finish coat of olive green lacquer.

All trims shall have door equipped with chorme plated flush type combination lock and catch, two keys being supplied with each lock. Doors over 48 inches in height shall be equipped with a chrome plated vault handle and 3 point catch with built-in lock using same key as flush locks and arranged to fasten door at top, bottom and center.

A directory holder with metal frame shall be furnished and installed upon the inside of the door of each cabinet.

All panelboards shall be built in accordance with the requirements of Underwriters' Laboratories specifications and recommendations of NEMA, and shall bear the Underwriters' Inspection Label.

Panelboards shall be as manufactured by the Westinghouse Electric & Manufacturing Company or approved equal.

WHERE TO BUY

See nearest Westinghouse Office or agent jobber shown on back cover. For further information request Catalog 29-000.

NOFUZE LIGHTING BRANCH CIRCUIT PANELBOARDS

Number of Circuits	Main Amps.	Types NAIB-3L and NAIB-3AB—Single Pole—Solid Neutral Mains 125/250 Volt, 3 Wire—Branches 125 Volt, 2 Wire			Types NA1B-4L and NA1B-4AB—Single Pole—Solid Neutral Mains 125/250 Volt, 3-Phase, 4 Wire Branches 125 Volt, 2-Wire		
		Panel, box and front Cat. No.	Height of Box I. d., In.	Approx. Ship. Wt., Lb.	Panel, box and front Cat. No.	Height of Box I. d., In.	Approx. Ship. Wt., Lb.
LUGS IN MAINS							
4	50	NA1B04-3L050	16¼	75	NA1B04-4L050	16¼	75
6	50	NA1B06-3L050	19	86	NA1B06-4L050	19	86
8	50	NA1B08-3L050	19	95	NA1B08-4L050	19	95
10	50	NA1B10-3L050	21¾	101	NA1B10-4L050	21¾	101
12	100	NA1B12-3L100	21¾	105	NA1B12-4L050	21¾	105
14	100	NA1B14-3L100	24½	112	NA1B14-4L050	24½	112
16	100	NA1B16-3L100	24½	120	NA1B16-4L100	24½	120
18	100	NA1B18-3L100	27¼	127	NA1B18-4L100	27¼	127
20	100	NA1B20-3L100	27¼	135	NA1B20-4L100	27¼	135
22	100	NA1B22-3L100	30	142	NA1B22-4L100	30	142
24	100	NA1B24-3L100	30	150	NA1B24-4L100	30	150
26	100	NA1B26-3L100	32¾	155	NA1B26-4L100	32¾	155
28	100	NA1B28-3L100	32¾	160	NA1B28-4L100	32¾	160
30	100	NA1B30-3L100	35½	179	NA1B30-4L100	35½	179
32	100	NA1B32-3L100	35½	180	NA1B32-4L100	35½	180
34	200	NA1B34-3L200	38¼	200	NA1B34-4L100	38¼	200
36	200	NA1B36-3L200	38¼	215	NA1B36-4L100	38¼	215
38	200	NA1B38-3L200	41	222	NA1B38-4L100	41	222
40	200	NA1B40-3L200	41	230	NA1B40-4L100	41	230
42	200	NA1B42-3L200	43¾	238	NA1B42-4L100	43¾	238
MAIN NOFUZE CIRCUIT BREAKER							
4	50	NA1B04-3AB050	21¾	105	NA1B04-4AB050	21¾	105
6	50	NA1B06-3AB050	24½	112	NA1B06-4AB050	24½	112
8	50	NA1B08-3AB050	24½	125	NA1B08-4AB050	24½	120
10	50	NA1B10-3AB050	27¼	130	NA1B10-4AB050	27¼	133
12	100	NA1B12-3AB100	32¾	140	NA1B12-4AB050	27¼	145
14	100	NA1B14-3AB100	35½	145	NA1B14-4AB050	30	150
16	100	NA1B16-3AB100	35½	150	NA1B16-4AB100	35½	155
18	100	NA1B18-3AB100	38¼	160	NA1B18-4AB100	38¼	165
20	100	NA1B20-3AB100	38¼	170	NA1B20-4AB100	38¼	175
22	100	NA1B22-3AB100	41	182	NA1B22-4AB100	41	187
24	100	NA1B24-3AB100	41	195	NA1B24-4AB100	41	200
26	100	NA1B26-3AB100	43¾	202	NA1B26-4AB100	43¾	207
28	100	NA1B28-3AB100	43¾	210	NA1B28-4AB100	43¾	215
30	100	NA1B30-3AB100	46½	217	NA1B30-4AB100	46½	222
32	100	NA1B32-3AB100	46½	225	NA1B32-4AB100	46½	230
34	200	NA1B34-3AB200	54¾	255	NA1B34-4AB100	49¼	243
36	200	NA1B36-3AB200	54¾	275	NA1B36-4AB100	49¼	255
38	200	NA1B38-3AB200	57½	300	NA1B38-4AB100	52	270
40	200	NA1B40-3AB200	57½	325	NA1B40-4AB100	52	285
42	200	NA1B42-3AB200	60¼	350	NA1B42-4AB100	54¾	300

Number of Circuits	Main Amps.	Types A2B-2L and A2B-2AB—Double Pole Mains 125 Volt, 2 Wire—Branches 125 Volt, 2 Wire			Types NA2B-3L and NA2B-3AB, 3 Wire Mains, 3 Wire Branches—Mains 125/250 Volt, 3 Wire Solid Neutral Branches 125/250 Volt, 3 Wire Solid Neutral		
		Panel, box and front Cat. No.	Height of Box I. d., In.	Approx. Ship. Wt., Lb.	Panel, box and front Cat. No.	Height of Box I. d., In.	Approx. Ship. Wt., Lb.
MAIN LUGS ONLY							
4	50	A2B04-2L050	19	85	NA2B04-3L050	19	87
6	100	A2B06-2L100	21¾	95	NA2B06-3L100	21¾	97
8	100	A2B08-2L100	24½	115	NA2B08-3L100	24½	117
10	100	A2B10-2L100	27¼	125	NA2B10-3L100	27¼	127
12	200	A2B12-2L200	30	140	NA2B12-3L200	30	142
14	200	A2B14-2L200	32¾	155	NA2B14-3L200	32¾	157
16	200	A2B16-2L200	35½	170	NA2B16-3L200	35½	172
18	200	A2B18-2L200	38¼	200	NA2B18-3L200	38¼	202
20	200	A2B20-2L200	41	215	NA2B20-3L200	41	217
		Same Dimensions for 250 Volt, 2/Wire A.C. Panels					
MAIN NOFUZE CIRCUIT BREAKER							
4	50	A2B04-2AB050	24½	115	NA2B04-3AB050	24½	117
6	100	A2B06-2AB100	32¾	130	NA2B06-3AB100	32¾	132
8	100	A2B08-2AB100	35½	145	NA2B08-3AB100	35½	147
10	100	A2B10-2AB100	38¼	160	NA2B10-3AB100	38¼	162
12	200	A2B12-2AB200	46½	215	NA2B12-3AB200	46½	217
14	200	A2B14-2AB200	49¼	230	NA2B14-3AB200	49¼	232
16	200	A2B16-2AB200	52	245	NA2B16-3AB200	52	247
18	200	A2B18-2AB200	54¾	260	NA2B18-3AB200	54¾	262
20	200	A2B20-2AB200	57½	275	NA2B20-3AB200	57½	277

LOW CAPACITY NOFUZE DISTRIBUTION PANELBOARDS

Number of Circuits	Main Amps.	Types A3B-3HL and A3B-3HAB 250 Volt Service Mains 250 or 125 V., 3 Ph., 3 W. Branches 250 V., 3 Ph., 3 W.			Types A2B-3HL and A2B-3HAB 250 Volt Service Mains 250 or 125 V., 3 Ph., 3 W. Branches 250 V., 1 Ph., 2 W.			Types A2B-2HL and A2B-2HAB 250 V. a-c. or 125 V. d-c. service Mains 250 V. a-c. or 125 V. d-c., 2 Wire Branches 250 Volt, 2 Wire		
		Panel box, and front Cat. No.	Height of Box I.d., In.	Approx. Ship. Wt. Lb.	Panel, box and front Cat. No.	Height of Box I..d, In.	Approx. Ship. Wt. Lb.	Panel, box and front Cat. No.	Height of Box I.d., In.	Approx. Ship. Wt. Lb.
			MAIN LUGS						MAIN LUGS	
4	50	A3B04-3HL050	21¾	112	A2B04-3HL050	19	102	A2B04-2HL050	19	100
6	50	A3B06-3HL050	27¼	134	A2B06-3HL050	21¾	112	A2B06-2HL050	21¾	110
8	50	A3B08-3HL050	30	157	A2B08-3HL050	24½	127	A2B08-2HL050	24½	125
10	50	A3B10-3HL050	35½	186	A2B10-3HL050	27¼	142	A2B10-2HL050	27¼	140
12	50	A3B12-3HL050	38¼	215	A2B12-3HL050	30	157	A2B12-2HL050	30	155
14	50	A3B14-3HL050	43¾	242	A2B14-3HL050	32¾	167	A2B14-2HL050	32¾	165
16	50				A2B16-3HL050	35½	187	A2B16-2HL050	35½	185
18	50				A2B18-3HL050	38¼	212	A2B18-2HL050	38¼	210
20	50				A2B20-3HL050	41	224	A2B20-2HL050	41	222
4	100	A3B04-3HL100	21¾	113	A2B04-3HL100	19	103	A2B04-2HL100	19	101
6	100	A3B06-3HL100	27¼	135	A2B06-3HL100	21¾	113	A2B06-2HL100	21¾	111
8	100	A3B08-3HL100	30	158	A2B08-3HL100	24½	128	A2B08-2HL100	24½	126
10	100	A3B10-3HL100	35½	188	A2B10-3HL100	27¼	143	A2B10-2HL100	27¼	141
12	100	A2B12-3HL100	38¼	217	A2B12-3HL100	30	158	A2B12-2HL100	30	156
14	100	A3B14-3HL100	43¾	242	A2B14-3HL100	32¾	169	A2B14-2HL100	32¾	167
16	100				A2B16-3HL100	35½	189	A2B16-2HL100	35½	187
18	100				A2B18-3HL100	38¼	214	A2B18-2HL100	38¼	212
20	100				A2B20-3HL100	41	226	A2B20-2HL100	41	224
4	225	A3B04-3HL225	24½	114	A2B04-3HL225	21¾	104	A2B04-2HL225	21¾	102
6	225	A3B06-3HL225	30	136	A2B06-3HL225	24½	114	A2B06-2HL225	24½	112
8	225	A3B08-3HL225	32¾	159	A2B08-3HL225	27¼	129	A2B08-2HL225	27¼	122
10	225	A3B10-3HL225	38¼	189	A2B10-3HL225	30	144	A2B10-2HL225	30	142
12	225	A3B12-3HL225	41	218	A2B12-3HL225	32¾	159	A2B12-2HL225	32¾	157
14	225	A3B14-3HL225	46½	245	A2B14-3HL225	35½	170	A2B14-2HL225	35½	168
16	225				A2B16-3HL225	38¼	190	A2B16-2HL225	38¼	188
18	225				A2B18-3HL225	41	215	A2B18-2HL225	41	213
20	225				A2B20-3HL225	43¾	227	A2B20-2HL225	43¾	225
4	400	A3B04-3HL400	27¼	116	A2B04-3HL400	24½	106	A2B04-2HL400	24½	104
6	400	A3B06-3HL400	32¾	138	A2B06-3HL400	27¼	116	A2B06-2HL400	27¼	114
8	400	A3B08-3HL400	35½	161	A2B08-3HL400	30	131	A2B08-2HL400	30	129
10	400	A3B10-3HL400	41	192	A2B10-3HL400	32¾	146	A2B10-2HL400	32¾	144
12	400	A3B12-3HL400	43¾	221	A2B12-3HL400	35½	163	A2B12-2HL400	35½	161
14	400	A3B14-3HL400	49¼	246	A2B14-3HL400	38¼	173	A2B14-2HL400	38¼	171
16	400				A2B16-3HL400	41	193	A2B16-2HL400	41	191
18	400				A2B18-3HL400	43¾	218	A2B18-2HL400	43¾	216
20	400				A2B20-3HL400	46½	230	A2B20-2HL400	46½	228
			MAIN BREAKER						MAIN BREAKER	
4	50	A3B04-3HAB050	27¼	150	A2B04-3HAB050	24½	144	A2B04-2HAB050	24½	142
6	50	A3B06-3HAB050	32¾	168	A2B06-3HAB050	27¼	162	A2B06-2HAB050	27¼	161
8	50	A3B08-3HAB050	35½	195	A2B08-3HAB050	30	180	A2B08-2HAB050	30	178
10	50	A3B10-3HAB050	41	220	A2B10-3HAB050	32¾	198	A2B10-2HAB050	32¾	196
12	50	A3B12-3HAB050	43¾	255	A2B12-3HAB050	35½	216	A2B12-2HAB050	35½	214
14	50	A3B14-3HAB050	49¼	282	A2B14-3HAB050	38¼	234	A2B14-2HAB050	38¼	232
16	50				A2B16-3HAB050	41	252	A2B16-2HAB050	41	250
18	50				A2B18-3HAB050	43¾	270	A2B18-2HAB050	43¾	268
20	50				A2B20-3HAB050	46½	298	A2B20-2HAB050	46½	296
4	50	A3B04-3HAB100	32¾	157	A2B04-3HAB100	30	146	A2B04-2HAB100	30	144
6	50	A3B06-3HAB100	38¼	175	A2B06-3HAB100	32¾	164	A2B06-2HAB100	32¾	162
8	50	A3B08-3HAB100	41	202	A2B08-3HAB100	35½	182	A2B08-2HAB100	35½	180
10	50	A3B10-3HAB100	46½	227	A2B10-3HAB100	38¼	200	A2B10-2HAB100	38¼	198
12	50	A3B12-3HAB100	49¼	262	A2B12-3HAB100	41	218	A2B12-2HAB100	41	216
14	50	A3B14-3HAB100	54¾	289	A2B14-3HAB100	43¾	236	A2B14-2HAB100	43¾	234
16	50				A2B16-3HAB100	46½	254	A2B16-2HAB100	46½	252
18	50				A2B18-3HAB100	49¼	272	A2B18-2HAB100	49¼	270
20	50				A2B20-3HAB100	52	300	A2B20-2HAB100	52	298
4	225	A3B04-3HAB225	41	175	A2B04-3HAB225	38¼	169	A2B04-2HAB225	38¼	167
6	225	A3B06-3HAB225	46½	193	A2B06-3HAB225	41	187	A2B06-2HAB225	41	185
8	225	A3B08-3HAB225	49¼	220	A2B08-3HAB225	43¾	205	A2B08-2HAB225	43¾	203
10	225	A3B10-3HAB225	54¾	245	A2B10-3HAB225	46½	223	A2B10-2HAB225	46½	221
12	225	A3B12-3HAB225	57½	280	A2B12-3HAB225	49¼	231	A2B12-2HAB225	49¼	229
14	225	A3B14-3HAB225	63	307	A2B14-3HAB225	52	259	A2B14-2HAB225	52	257
16	225				A2B16-3HAB225	54¾	277	A2B16-2HAB225	54¾	275
18	225				A2B18-3HAB225	57½	295	A2B18-2HAB225	57½	293
20	225				A2B20-3HAB225	60¼	323	A2B20-2HAB225	60¼	321

INCREASE IN BOX HEIGHTS FOR INCREASED MAIN BUS CAPACITY

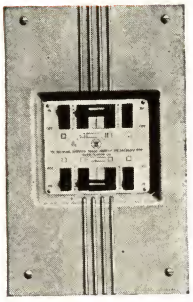
FOR LUGS ONLY IN THE MAINS

Type of Panelboard	From 50 Amperes to 100 Amperes	From 50 Amperes to 200 Amperes	From 100 Amperes to 200 Amperes
NA1B-3L	None	None	None
A2B-2L	None	None	None
NA2B-3L	None	None	None
NA1B-4L	None	None	None
A2B-3L	None	None	None

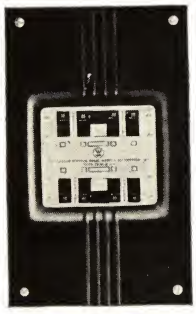
FOR CIRCUIT BREAKER IN MAINS

Type of Panelboard	From 50 Amperes to 100 Amperes	From 50 Amperes to 200 Amperes	From 100 Amperes to 200 Amperes
NA1B-3AB	5 ½″	11″	5 ½″
A2B-2AB	5 ½″	11″	5 ½″
NA2B-3AB	5 ½″	11″	5 ½″
NA1B-4AB	5 ½″	11″	5 ½″
A2B-3AB	5 ½″	11″	5 ½″

NOFUZE LOAD CENTER



FLUSH TYPE FRONT



SURFACE TYPE
FRONT



TYPE M
LOAD CENTER

APPLICATION

The new Westinghouse Nofuze Load Center is an ideal form of circuit protection for residences, small stores, farm buildings and elsewhere for the control of range, water heater, lighting and appliance branch circuits. It has been inspected and approved by the Underwriters' Laboratories, Inc., and bears their label.

FEATURES

ELIMINATES FUSES AND SWITCHES—Westinghouse Nofuze Load Centers completely eliminate the need for replacing fuses when a short circuit or overload endangers the electrical wiring in the home. Instead of fuses, the Westinghouse Nofuze Load Center employs small circuit breakers which automatically trip open under conditions which would cause a fuse to "blow." With Nofuze circuit protection you have merely to remove the cause of the "short" or overload, then flip the breaker handle first to "Off," then to "On"—much as you turn the lights on or off with a wall switch. There is nothing to renew or replace. Anyone can easily and safely restore service with a Westinghouse Nofuze Load Center.

LOW COST—Westinghouse Nofuze load center prices are little if any more than the old type switch and fuse.

SAFETY—Factory seal prevents exposure of live parts to unskilled fingers.

POSITIVE PROTECTION FOR WIRING SYSTEM—Factory calibration cannot be changed since the construction is tamper-proof. The breaker handle cannot be held closed against a continuous short circuit or dangerous overload.

CONVENIENCE—Because of its small size and neat appearance you can install the Nofuze Load Center in a hallway or similar location where it will be most convenient to restore service "when the lights go out." You will not even need to light a match or candle. By merely running your fingers over the Nofuze breaker handles in the dark you can immediately locate the handle which has tripped. A flip with your finger and the lights come on.

HOW TO SELECT

Before attempting to select a load center, determine which type is required. The grounded neutral load center is used primarily as service entrance equipment and is limited to six branch circuits when a main switch is not used (refer to paragraph 2351-A of N.E.C. code). The insulated neutral type is generally required when the installation is made at some point other than the point of entrance of the service conductors.

This load center can be obtained up to 16 single poles.

After the type has been decided, determine the number of circuits required, keeping in mind that each 115/230-volt or 230-volt circuit requires a two-pole breaker (2 poles) and that each 115-volt circuit requires a single-pole breaker (1 pole). 2-pole breakers are actually two single-pole breakers with handles tied together mechanically. See page 21 for listings.

DIMENSIONS

Outline dimensions of load center boxes are shown in inches on the drawing.

TYPICAL SPECIFICATION

Load Center equipment shall be of the NOFUZE MULTI-BREAKER LOAD CENTER type. It shall include:

....branch circuits ....ampere single pole (2 wire S/N) 115 volt for lighting

....branch circuits ....ampere single pole (2 wire S/N) 115 volt for appliances

....branch circuits ....ampere two pole (3 wire S/N) 115/230 volt for ranges

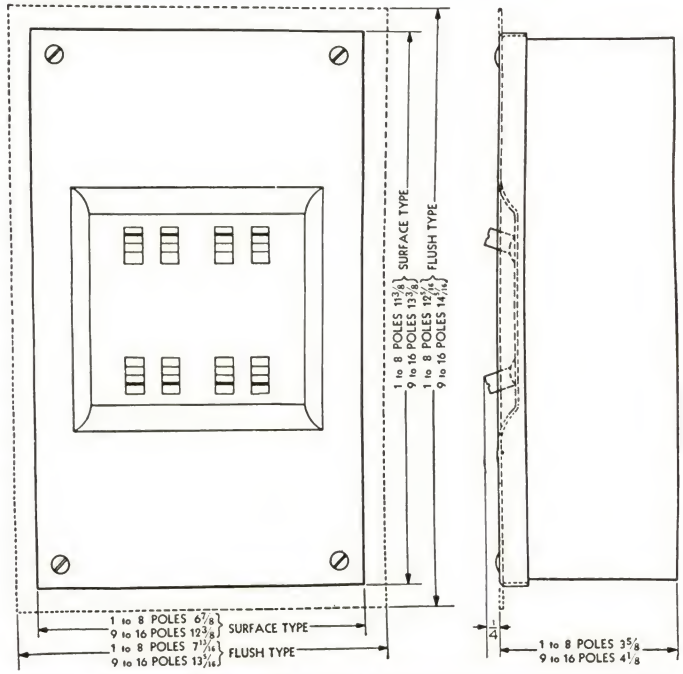
....branch circuits ....ampere two pole (3 wire S/N) 115/230 volt for appliances

The box shall be equipped with a swing-out interior and adapted to (flush) (surface) mounting. Solid mains shall be supplied for (2 wire 115 volt a-c.) (3 wire 115/230 volt a-c.) single phase or 3 phase 4 wire, with ....ampere terminals. When application is for service entrance work, the load center shall bear Underwriters' Service Equipment Label.

WHERE TO BUY

See your nearest Westinghouse agent jobber. See list on the inside back cover.

For complete information on Nofuze Load Centers request a copy of Catalog 29-300.



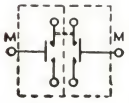
OUTLINE DIMENSIONS FOR BOTH 8 AND 16-POLE LOAD CENTERS

NOFUZE LOAD CENTERS AND MULTI-BREAKER PANELBOARDS*

TYPICAL 8-CIRCUIT COMBINATIONS

Mains —3-Wire 115/230 Volt (A.C.) Grounded or Insulated Solid Neutral.
Branches—2-Wire 115 Volt, S.N. with 15, 20, 25, 35, or 50-Ampere, 1-Pole Nofuze Circuit Breakers or 3-Wire 115/230 Volt S. N. 2-Pole Nofuze Circuit Breakers.

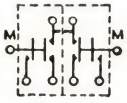
GROUNDED NEUTRAL TYPE



FOUR BRANCH POLE UNIT

LUGS IN MAINS			DESCRIPTION BRANCH CIRCUITS		
Max. Amp. Mains	Cat. No. F-Flush S-Surface	List Price	Total No. of Branch Poles	Capacity and No. of 2-Pole Branch Breakers	Capacity and No. of 1-Pole Branch Breakers
70	25040-01	$ 9.00	4	....	4-15
70	25021-51	9.00	4	1-50	2-15
70	25031-46	10.00	5	1-35	2-15—1-20
70	25060-61	11.00	6	.....	6-15
70	35041-41	11.00	6	1-35	4-15
70	25041-51	11.00	6	1-50	4-15
70	25041-56	11.00	6	1-50	1-20—3-15
70	25042-58	13.50	8	1-50—1-35	4-15
70	25042-51	13.50	8	2-50	4-15

INSULATED SOLID NEUTRAL TYPE



SIX BRANCH POLE UNIT

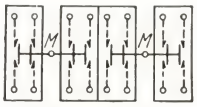
Amp. Mains	No. of Poles	Circuit Arrangement	Cat. No. F-Flush S-Surface	List Price
70	6	6 SP or 4 SP 1 DP or 2 SP 2 DP	5006 5104 5202	$11.50 12.00 12.50
70	7	7 SP or 5 SP 1 DP or 3 SP 2 DP	5007 5105 5203	12.50 13.00 13.50
70	8	8 SP or 6 SP 1 DP or 4 SP 2 DP	5008 5106 5204	13.50 14.00 14.50

All orders must show ampere ratings of Each Circuit.

TYPICAL 16-CIRCUIT COMBINATIONS

SINGLE PHASE — 3-WIRE SERVICE

Mains —3-Wire 115/230 Volts (A.C.) Insulted S. N.
Branches—2-Wire 115 Volts, S.N. with 15, 20, 35 and 50-Ampere, 1-Pole Nofuze Circuit Breakers or 3-Wire 115/230 Volt S. N. 2-Pole Nofuze Circuit Breakers.

Typical Layout and Wiring Diagram	Amperes Main	Pole	Circuit Arrangement	Diagram	Cat. No. F-Flush S-Surface	List Price
 DIAGRAM C	100	12	12 SP or 10 SP 1 DP or 8 SP 2 DP	C C C	7012 7110 7208	$30.00 30.00 30.00
		14	14 SP or 12 SP 1 DP or 10 SP 2 DP	C C C	7014 7112 7210	33.00 33.00 33.00
		16	16 SP or 14 SP 1 DP or 12 SP 2 DP	C C C	7016 7114 7212	35.00 35.00 35.00

All orders must show ampere ratings of Each Circuit.

TYPICAL TYPE M COMBINATIONS FOR WATER HEATER OR RANGE

SINGLE AND DOUBLE POLE BREAKERS (DOUBLE POLE BREAKERS SEPARATE TRIP)

Main or Branch Circuits	Circuit Ratings 2 Wire S/N 115 V. Single Pole Breaker and Neutral	3 Wire S N 115/230 V. Double Pole Breaker and Neutral	GROUNDED SOLID NEUTRAL		INSULATED SOLID NEUTRAL	
			Cat. No. F-Flush S-Surface	List Price	Cat. No. F-Flush S-Surface	List Price
1	1-15 A.		16101	$4.70	16501	$5.00
	1-20 A.		16102	4.70	16502	5.00
	1-25 A.		16103	4.70	16503	5.00
	1-35 A.		16104	4.70	16504	5.00
	1-50 A.		16105	4.70	16505	5.00
1		1-15 A.	16311	6.00	16711	6.30
		1-20 A.	16322	6.00	16722	6.30
		1-25 A.	16333	6.00	16733	6.30
		1-35 A.	16344	6.00	16744	6.30
		1-50 A.	16355	6.00	16755	6.30
2	2-15 A.		16211	5.70	16611	6.00
	2-20 A.		16222	5.70	16622	6.00
	2-25 A.		16233	5.70	16633	6.00
	2-35 A.		16244	5.70	16644	6.00
	2-50 A.		16255	5.70	16655	6.00

TYPICAL PANELBOARDS—SAFETY TYPE NM1B

3-WIRE — SINGLE POLE — SOLID NEUTRAL

Mains —115/208 Volts (A.C.) Only, 3-Wire Solid Neutral.
Branches—115 Volt, 2-Wire with 15-Ampere, 115-Volt, Single-Pole Nofuze Circuit Breaker.
Boxes —Code Gauge Galvanized Sheet Steel, 4-Inch Gutters. All Boxes are 4¼ Inches Deep (I. D.).
Fronts —Code Gauge, Dull Finish, Sheet Steel, Patrol Green Duco Finish, Flush or Surface Type.

Branch Poles	Main Amperes	PANEL, BOX AND FRONT			BOX ONLY	
		Approx. Ship. Wt., Lb.	Catalog No.	List Price	Style No.	Height I. D. Inches
12	100	56	NM1B12-3L100	$ 62.00	K-80433	23¾
14	100	60	NM1B14-3L100	68.00	K-80433	23¾
16	100	62	NM1B16-3L100	74.00	K-80433	23¾
32	100	84	NM1B32-3L100	114.00	K-80437	32¾
34	200	90	NM1B34-3L200	136.00	K-80438	35
36	200	93	NM1B36-3L200	140.00	K-80438	35

*The circuit combinations shown on this page represent only some of the more popular types. For official prices and complete circuit listings see Westinghouse Catalogs 29-300 and 29-409.

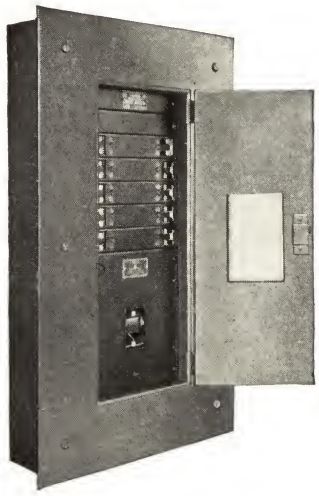
WESTINGHOUSE ELECTRIC

MULTI-BREAKER LIGHTING PANELBOARDS SAFETY TYPES NM1B AND NMM



LEFT — NM1B PANELBOARD

RIGHT — NMM PANELBOARD WITH MAIN BREAKER



APPLICATION

The types NM1B and NMM Nofuze Panelboards meet the need of low priced circuit breaker type lighting panelboards. They can be used where the service is a-c. and not over 115 volts to ground. They meet all Underwriters' requirements.

FEATURES

CIRCUIT BREAKER UNITS—The circuit breaker units used are the same as those used in the latest Nofuze load centers and have from one to four single-pole breakers mounted in a common unit. The breakers are slow-make and slow-break when actuated manually although automatic tripping is quick-break.

PANELBOARD CONSTRUCTION—The type of construction is of a design that almost any normal lighting application can be taken care of including some cases of light-duty power circuits.

Service can be arranged for 3/2-wire single-phase or 3-phase 4-wire. While catalog numbers cover branch circuits calibrated at 15 amperes; 20, 25, 35, and 50-ampere calibrations can be furnished if specifically requested.

The design provides for branch circuits from 4 to 40 single-pole or 2 to 20 double-pole.

The boxes are of the same high-grade construction as employed for other lines of Westinghouse panelboards.

HOW TO SELECT

First determine the number, size and type of branch circuits and mains. Branch breaker ratings should be selected from the table on page 23 to protect the size wire used. Then select the proper panel from Page 21 or Westinghouse Catalog 29-409.

Unless otherwise specified, boxes will be furnished with standard knockouts, but in the event users desire to drill their own boxes or require special drillings either will be furnished at no extra charge provided the information accompanies the order and that where special drillings are required no changes in box dimensions are necessary in order to place the knockouts.

Under no conditions will knockouts be furnished in the back of the boxes nor will special size cabinets or cabinets to include other apparatus than listed be manufactured.

This is necessary because of the fact that the low cost of these panelboards can only be maintained by manufacturing a standardized product.

DIMENSIONS

Width of NM1B boxes is approximately 15″, depth 4½″ inside dimensions except the 3-phase, 4-wire main breaker panels which take a 20″ wide by 5¾″ deep box. NMM panels take the larger box. Box heights for some of the NM1B panels are given on Page 21. The complete line of Westinghouse NM1B and NMM panelboards is shown in Catalog 29-409.

TYPICAL SPECIFICATIONS

Lighting panelboards shall be of the safety Nofuze automatic Multi-Breaker type.

The branch circuit breakers shall be single pole and shall be rated 115 volt a-c. with trip elements calibrated for 15-20-25-35 or 50 amperes as shown on plans. Automatic release is to be secured through action of a bimetallic thermal trip element engaging the releasing latch of the mechanism.

The circuit breakers shall have inverse-time-limit characteristics and shall be trip free on overloads.

The breakers shall be enclosed and sealed in units of approved moulded composition to eliminate tampering or unauthorized change in calibration.

They shall be interchangeable and operable in any position and removable from the front of the panelboard without disturbing adjacent units. Each branch circuit shall be distinctly numbered.

Unless otherwise specified, all panelboards shall be arranged with main terminal lugs at bottom.

The assembled panelboard shall be fastened to the cabinet by adjustable supports to provide for proper alignment.

Boxes shall be constructed of code gauge galvanized sheet steel. They shall be provided with 4″ wiring gutters at top, bottom and sides.

Fronts shall be of code gauge stretcher leveled sheet and steel with trim of proper width. The door shall be fastened to the trim with concealed hinges and provided with flush type chrome-plated combination latch and lock. The front shall have a priming coat of paint over which shall be supplied a finished coat of green duco.

The panelboards and cabinets shall conform to the requirements of the Underwriters' Laboratories.

WHERE TO BUY

See nearest Westinghouse Office or agent jobber listed on back cover. For further information request Catalog 29-409.

COMMERCIAL COPPER WIRES AND METAL CONDUITS

B. & S. Gauge No.	Area In Circular Mils	Resistance* per 1000 Ft. at 68° F.	Breaker Size Required to Protect Wire, Amps.	RUBBER INSULATION		VARNISHED CAMBRIC INSULATION		Minimum Size of Conduit 2 and 3 Wire Systems								
				Allowable Current Carrying Capacity	Volts Drop per 1000 Ft. at Rated Current	Allowable Current Carrying Capacity	Volts Drop per 1000 Ft. at Rated Current	No. of Conductors in One Conduit								
								1	2	3	4	5	6	7	8	9
....	2,000,000	0.0052	.....	1,050	5.5	1,260	6.6	3	5	6	...	...	...	...	...	...
....	1,900,000	0.0055	.....	1,010	5.6	1,210	6.7	3	5	6	...	...	...	...	...	...
....	1,800,000	0.0058	.....	970	5.6	1,160	6.7	3	5	6	6	...	...	...	...	...
....	1,700,000	0.0062	.....	930	5.8	1,120	6.9	3	5	5	6	...	...	...	...	...
....	1,600,000	0.0065	.....	890	5.8	1,070	7.0	2½	5	5	6	...	...	...	...	...
....	1,500,000	0.0070	.....	850	6.0	1,020	7.1	2½	4½	5	6	...	...	...	...	...
....	1,400,000	0.0075	.....	810	6.1	970	7.3	2½	4½	5	6	...	...	...	...	...
....	1,300,000	0.0084	.....	770	6.5	920	7.7	2½	4½	5	6	6	...	...	...	...
....	1,200,000	0.0088	.....	730	6.4	880	7.7	2½	4½	4½	6	6	...	...	...	...
....	1,100,000	0.0095	.....	690	6.6	830	7.9	2½	4	4½	6	6	...	...	...	...
....	1,000,000	0.0105	.....	650	6.8	780	8.2	2	4	4	5	6	6	...	...	...
....	950,000	0.0111	.....	625	6.9	750	8.3	2	4	4	5	6	6	6	...	...
....	900,000	0.0117	600	600	7.0	720	8.4	2	3½	4	4½	5	6	6	...	...
....	850,000	0.0124	550	575	7.1	690	8.6	2	3½	4	4½	5	6	6	...	...
....	800,000	0.0131	550	550	7.2	660	8.6	2	3½	4	4½	5	6	6	6	...
....	750,000	0.0140	500	525	7.4	630	8.8	2	3½	3½	4½	5	6	6	6	...
....	700,000	0.0150	500	500	7.5	600	9.0	2	3½	3½	4½	5	5	6	6	...
....	650,000	0.0168	450	475	8.0	570	9.6	2	3½	3½	4	4½	5	6	6	6
....	600,000	0.0175	450	450	7.9	540	9.5	2	3	3½	4	4½	5	6	6	6
....	550,000	0.0191	400	425	8.1	510	9.7	1½	3	3½	4	4½	5	5	6	6
....	500,000	0.0210	400	400	8.4	480	10.1	1½	3	3	3½	4	4½	5	5	6
....	450,000	0.0234	350	365	8.5	435	10.2	1½	3	3	3½	4	4½	4½	5	6
....	400,000	0.0263	325	325	8.5	390	10.3	1¼	3	3	3¼	4	4	4½	5	5
....	350,000	0.0300	300	300	9.0	360	10.8	1¼	2½	3	3½	3½	4	4½	4½	5
....	300,000	0.0350	275	275	9.6	330	11.6	1¼	2½	3	3	3½	3½	4	4½	4½
....	250,000	0.0420	250	250	10.5	300	12.6	1¼	2½	2½	3	3	3½	3½	4	4½
0000	211,600	0.0497	225	225	11.2	270	13.4	1¼	2	2½	2½	3	3	3½	3½	4
000	167,800	0.0625	175	175	10.9	210	13.1	1	2	2	2½	3	3	3	3½	3½
00	133,100	0.0789	150	150	11.8	180	14.2	1	2	2	2½	2½	3	3	3	3½
0	105,500	0.0995	125	125	12.4	150	14.9	1	1½	2	2	2½	2½	3	3	3
1	83,690	0.1258	100	100	12.6	120	15.1	¾	1½	1½	2	2	2½	2½	3	3
2	66,370	0.1579	90	90	14.2	110	17.4	¾	1¼	1½	1½	2	2	2½	2½	2½
3	52,630	0.2004	70	80	16.0	95	19.0	¾	1¼	1¼	1½	2	2	2	2½	2½
4	41,740	0.2525	70	70	17.7	85	21.5	¾	1¼	1¼	1½	2	2	2	2	2½
5	33,100	0.3130	50	55	17.2	65	20.3	¾	1¼	1¼	1¼	1½	2	2	2	2
6	26,250	0.394	50	50	19.7	60	23.6	½	1	1¼	1¼	1½	1½	2	2	2
8	16,510	0.641	35	35	22.4	40	25.6	½	¾	1	1	1	1¼	1¼	1¼	1¼
10	10,380	1.010	25	25	25.3	30	30.3	½	¾	¾	1	1	1	1¼	1¼	1¼
12	6,530	1.601	20	20	32.0	25	40.0	½	½	¾	¾	¾	1	1	1	1¼
14	4,107	2.565	15	15	38.5	18	46.2	½	½	½	¾	¾	1	1	1	1

*Also volts drop per 1000 feet per ampere.

MOTORS AND CONTROLS

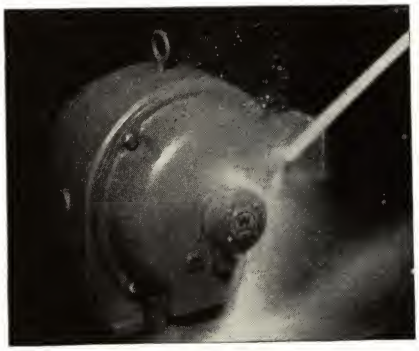
TYPE OF MOTOR		APPLICATIONS	DESCRIPTION
GENERAL PURPOSE TYPE CS—1-200 HP.		Blowers Buffers Compressors (unloaded start) Dish Washers Fans Lineshafts Polishers Pumps (centrifugal) Saws Stokers Woodworking Machines	Normal starting torque (up to 150% of full load). Low starting current 30 hp., 1800 r.p.m. and below (same as Linestart Class I). Full voltage starting, Standard voltages, 2 and 3 phase, 25, 50, 60 cycles, constant speed. Sealed sleeve or ball bearings.
LINESTART—CLASS I TYPE CS—1-200 HP.		*Meets Low Starting Current Requirements.* Applications same as General Purpose Motor.	Low starting current (no more than 5 to 6 times full load current). Other features same as General Purpose Motor.
LINESTART—CLASS II TYPE CS—1-200 HP.		*For Heavy Starting Duty Drives such as:* Compressors (without unloaders). Heavy Conveyors Reciprocating Pumps	High starting torque (up to 250% of full load). Low starting current. Other features similar to General Purpose Motor.
WOUND ROTOR TYPE CW—1-200 HP.		*For Adjustable—Varying Speed Drives, such as:* Blowers Conveyors Fans Pumps	Adjustable—varying speed. Heavy starting effort. Extremely low starting current with high starting effort for either constant or variable speed.
FH, FJ, CR, CU SINGLE PHASE—1-7½ HP.		*Heavy Starting Duty for Drives, such as:* Blowers Compressors Fans Pumps Shop Tools Stokers	Type FH Split Phase 1/6—⅓ hp. Type FJ Capacitor Start 1/50—¾ hp. Type CR Repulsion Start—Induction Run ¾—3 hp. Type CU Repulsion Induction 3—7½ hp.
GEARMOTORS		For use where the motor speed must be reduced. The types of motors shown above are available as gearmotors with built-in speed reduction.	46 standard ratios from 1.12:1 to 200:1. Gears capable of carrying maximum motor output. Output speeds from 4.4 to 1550 r.p.m. Motors and gearing parts matched. Minimum of moving and wearing parts. Small space requirements.

MOTORS FOR SPECIAL CONDITIONS

QUIET OPERATING

Where standard motors may not be quiet enough for certain building applications, quiet operating motors are necessary. Specifications should definitely call for "Westinghouse Quiet Operating Motors," with *nameplates designating them as such.*

SPLASH PROOF



A complete line of motors and control, fully protected against splashing or dripping water, may be used outdoors or indoors where the hose is used freely for cleaning.

VERTICAL



Vertical Squirrel Cage motors can be supplied in all commercial speeds, frequencies and voltages.

TOTALLY ENCLOSED



For use where conditions of abrasive or conducting dust are severe. The primary laminations, windings and all electrical parts are tightly sealed within the frame.

MOTORS AND CONTROLS

MANUAL CONTROL			MAGNETIC CONTROL		CIRCUIT PROTECTION (In Specifying, State Size and Type of Motor)
* FULL VOLTAGE	*† REDUCED VOLTAGE	† SPEED ADJUSTMENT	*† FULL VOLTAGE	*† REDUCED VOLTAGE	
Manual Starters Types WK-16 & WK-18 Up to 7½ Hp.	Autostarter (overload protection) Class 10-700	no	Linestarter Class 11-299—or Combination Linestarter Class 11-206	Resistance Type Starter Class 11-400 Up to 50 Hp. Autotransformer Type Class 11-600 Above 50 Hp.	Nofuze "De-ion" Circuit Breaker or Safety Switch
Same as general purpose	Same as general purpose	Same as general purpose	Same as general purpose	Same as general purpose	Same as general purpose
Same as general purpose	no	no	Same as general purpose	no	Same as general purpose
no	Rheostat Class 12-012 up to 25 Hp. Drum Controller Class 12-300 Linestarter Class 11-200 for primary	Rheostat Class 12-016 up to 25 Hp. Drum Controller Class 12-300 Linestarter Class 11-200 for primary	Linestarter Class 11-200—or Combination Linestarter Class 11-206 with Secondary Controller	Resistance Type Starter Class 13-100	Same as general purpose
Sentinel Breaker Up to 1 Hp. Manual Starters Types WK-16 & WK-18	Rheostat Class 10-030	no	Linestarter Class 11-200	Special	Nofuze Flipon or Safety Switch
Depends upon type of motor used. See above.			Depends upon type of motor used. See above.		

*With overload protection. †With low voltage protection.

MOTOR CONTROL EQUIPMENT



"DE-ION" COMBINATION LINESTARTERS CLASS 11-206



NOFUZE "DE-ION" CIRCUIT BREAKERS



SAFETY SWITCHES



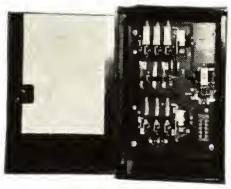
MANUAL STARTERS TYPES WK-16 AND WK-18



SENTINEL BREAKER TYPE H



"DE-ION" LINESTARTERS CLASS 11-200



CLASS 11-400 MAGNETIC REDUCED VOLTAGE STARTER



AUTO STARTERS CLASS 10-700



RHEOSTATS



DRUM CONTROLLER (CLASS 12-300)

Westinghouse

POWER FACTOR CORRECTION

The power factor of an a-c. system is the ratio of the true power (watts) to apparent power (volts × amps.). Its value depends on the type of load. For instance, a lighting load is nearly unity power factor while induction motor loads may have a PF of from 30% to 90% depending on the size, speed and per cent load carried. See table.

The rates of most power companies take power factor into consideration in one of the following manners:

1—Bonus—lower rates for high power factors.

2—Demand rates—power rate depends on Kv-a. demand—high PF lowers Kv-a. demand thus lowering rate.

3—Penalty—higher rates at low power factors.

From most power companies you can obtain information about your power factor, the amount of your electric bill over a period of time, and data that will enable you to determine how much this power bill can be decreased by raising your PF. In many cases the power company has facilities to work out all the details for you. They will recommend the level to which your PF should be raised, the size of capacitor required, and estimate the net savings.

To assist in determining the sizes of capacitor needed to raise the PF to any desired level Westinghouse has developed the hart shown on Page 27.

Let us assume the following conditions: Present PF 70%, 400 Kw. load. How large a capacitor is needed to raise the power factor to 100%?

Lay a straight edge across the chart so that 70 on the left hand scale (present PF) and 100 on the right hand scale (desired PF) are connected. The middle scale shows the per cent reactive Kv-a. required—in this case 101%. Multiply the kilowatt load (400) by the per cent reactive Kv-a. (101%) to determine the size of capacitor needed. Size is $400 \times \frac{101}{100} = 404$ Kv-a.

Capacitors may be mounted at each motor or grouped in one place. It is usually better to place the correction as near to the source of low power factor as possible to reduce feeder loss and improve voltage regulation.

Synchronous motors designed for 80% leading PF are often used for PF corrections. On a new installation of a large motor, it is often more economical to install an 80% PF synchronous motor in place of a squirrel cage induction motor because of the beneficial effect on the total power factor. The corrective Kv-a. of typical 80% PF synchronous motors at full load is 60% of the motor horsepower.

KW. LOAD AND POWER FACTOR FOR THREE-PHASE CS MOTORS

220-440-550 VOLT MOTORS

Hp.	Poles	½ Load		Full Load		Hp.	Poles	½ Load		Full Load	
		Kw.	P.F.	Kw.	P.F.			Kw.	P.F.	Kw.	P.F.
½	4	.27	54	.53	72	40	4	16.32	86	32.61	92
1	4	.53	55	.91	83	40	6	16.21	79	32.40	89
1½	4	.72	67	1.37	84	40	8	16.98	77	33.97	89
						40	10	17.25	73	33.91	85
2	4	.96	78	1.80	86						
3	4	1.35	63	2.65	87	50	4	20.00	93	40.50	93
3	6	1.36	66	2.78	80	50	6	21.40	85	41.90	93
						50	8	20.42	76	41.50	88
5	4	2.22	76	4.35	87	50	10	20.40	76	41.49	88
5	6	2.06	68	4.43	81	50	12	21.42	66	42.20	83
5	8	2.36	65	4.45	80						
						60	6	24.67	85	51.03	91
7½	4	3.08	81	6.46	88	60	8	25.00	78	49.42	89
7½	6	3.30	69	6.27	85	60	10	24.90	76	50.50	87
7½	8	3.37	71	6.60	83	60	12	25.60	67	50.30	82
10	4	4.36	81	8.70	88						
10	6	4.24	74	8.66	85	75	6	30.70	80	61.00	88
10	8	4.38	64	8.60	79	75	8	31.15	81	61.80	91
						75	10	31.21	74	62.30	87
15	4	6.16	85	13.30	92	75	12	30.75	64	61.10	81
15	6	6.30	75	12.90	87						
15	8	6.30	66	12.71	82	100	8	41.50	80	83.20	90
						100	10	41.45	71	81.50	85
20	4	8.09	88	16.83	91	100	12	42.20	72	82.70	86
20	6	8.45	79	16.35	89						
20	8	7.60	71	16.60	84	125	8	51.80	85	101.40	92
20	10	8.20	64	16.96	79	125	10	51.30	77	101	89
						125	12	51.50	73	101.80	87
25	4	10.28	90	20.95	92						
25	6	10.38	80	20.50	88						
25	8	10.62	75	21.00	86	150	8	55.95	84	122	92
25	10	10.41	70	20.80	82	150	10	62.50	75	120.90	88
						150	12	61.50	69	122.10	85
30	4	12.10	91	24.60	93						
30	6	12.30	77	24.70	88	200	8	80.40	84	161	93
30	8	12.58	78	24.74	88	200	10	83.50	73	163.2	86
30	10	12.86	75	25.42	87	200	12	82.50	71	163.2	84

2200 VOLT MOTORS

40	4	18.50	67	35.08	82	75	10	31.13	71	61.93	85
40	6	16.90	59	34.00	73	75	12	37.75	68	63.44	84
40	8	17.40	73	35.41	87						
40	10	17.42	61	34.10	80	100	8	40.10	84	82.80	91
						100	10	41.40	78	82.90	89
50	4	22.00	69	43.60	88	100	12	42.90	75	82.60	87
50	6	21.29	80	41.55	91						
50	8	20.64	68	43.20	86	125	8	52.00	80	103.60	91
50	10	21.38	70	42.80	85	125	10	50.70	76	101.10	88
50	12	21.18	65	44.00	82	125	12	52.50	66	102.30	83
60	6	25.40	79	50.40	91	150	8	59.40	80	123.50	91
60	8	25.53	71	51.60	86	150	10	61.70	70	121.40	86
60	10	24.90	69	50.10	84	150	12	62.90	66	123	82
60	12	25.18	66	50.25	83						
						200	8	82.00	77	161.50	85
75	6	30.10	79	59.80	84	200	10	83.50	74	164	86
75	8	31.10	75	61.15	86	200	12	83.00	71	164	84

EXAMPLE

I. Assume that a certain building requires 3 induction motors, a 25 Hp. 10 pole, a 50 Hp., 12 pole, and a 75 Hp., 12 pole. What size capacitor would be required to raise the PF to 100%? From the table of Kw. load and power factor for a 25 Hp., 10 pole motor the Kw. is 20.8 and the PF 82%. From the power factor chart the reactive Kv-a. necessary to raise the PF to 100% is 68%. $20.8 \times \frac{68}{100} = 14.2$ reactive Kv-a. needed for the 25 Hp. motor. Do the same for each motor and we find that the total reactive Kv-a. needed is $14.2 + 30.0 + 43.4 = 87.6$ total reactive Kv-a. needed to increase the PF to 100%.

II. The above calculations are based on full load values but let us assume that for some reason the 12 pole, 75 Hp. motor was running at ½ load. From the table it takes 30.75 Kw. at 64% PF on ½ load. From the PF chart the reactive Kv-a. needed to correct from 64 to 100% is 119%. $30.75 \times \frac{119}{100} = 36.6$ reactive Kv-a. The total reactive Kv-a. is then $36.6 + 30 + 14.2 = 80.8$.

In example I the Kv-a. required to correct to 100% PF was 87.6 Kv-a. To correct the same load to 90% PF would require only 28.3 Kv-a. For this reason, it is seldom economical to correct PF beyond 90 or 95 per cent.

WESTINGHOUSE ELECTRIC

CAPACITORS



APPLICATION

Westinghouse capacitors for power factor correction are for use wherever the load is of such a nature as to have a low power factor. They can be supplied in types and capacities to meet various installation requirements.

FEATURES

NON-INFLAMMABLE and NON-EXPLOSIVE—All capacitors are impregnated with a non-inflammable fluid, "Inerteen." No fire-proof vault is required for mounting indoors.

HERMETICALLY SEALED UNITS—Heavy welded steel cases and solder sealed bushings provide a type of construction which hermetically seals the capacitor unit and prevents any leakage or contamination of the impregnating fluid.

SOLDER SEALED BUSHINGS—An exclusive process which eliminates necessity of gum, cork or other materials for sealing bushings to capacitor cases and provides an absolute hermetic seal for protection of the capacitor unit.

LOW LOSSES—Losses will not exceed ⅓ of one per cent of the normal Kv-a. rating.

SAFETY—Live parts are enclosed to prevent accidental contact. Inductive discharge coils automatically discharge capacitor in a minimum of time, when equipment is disconnected.

HOW TO SELECT

To determine required capacitor size, see page 26.

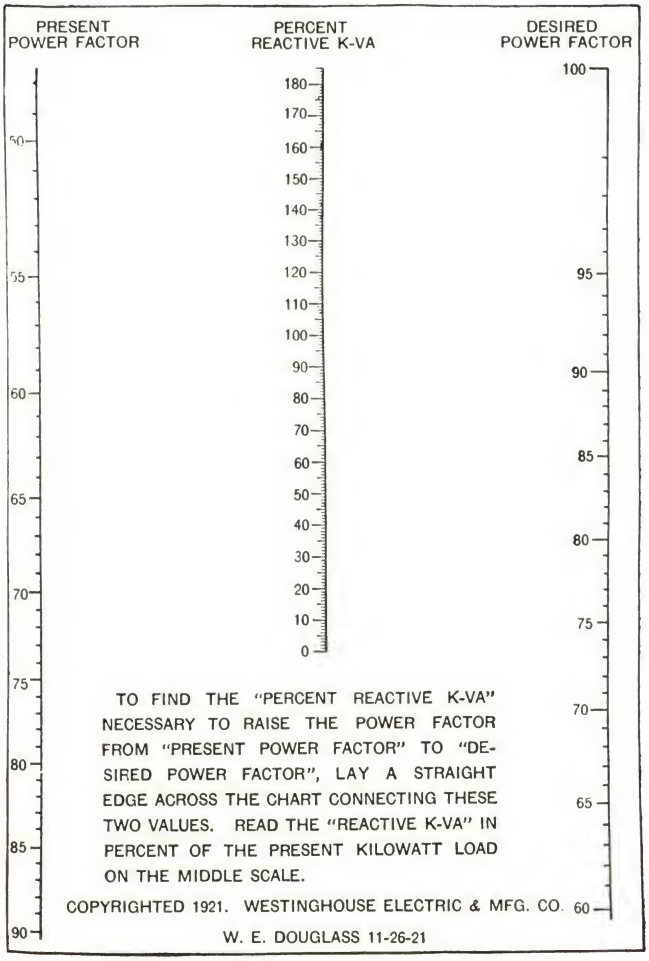
After determining the required size, select the proper capacitor from the tables below.

For complete information on types and sizes of capacitors and their application request a copy of Catalog 49-000.

TYPICAL SPECIFICATIONS

Capacitor equipment shall be Westinghouse inerteen rack type or approved equal, for operation on .....volts .....phase .....cycles with a rated capacity of .....Kv-a.

Capacitor equipment shall consist of capacitor units mounted in a frame or rack for (indoor) (outdoor) and (floor) (wall) mounting, dischargers, bus, connectors, circuit breakers, and necessary accessories.



CAPACITOR UNITS shall be an assembly of internal sections of aluminum foil separated by Kraft paper or equal, all enclosed in a welded steel case, vacuum dried and impregnated with a non-inflammable, non-explosive liquid. Terminal bushings shall be of the soldered to porcelain type, or equal, and form a positive hermetic seal.

RACKS shall be of welded sheet steel and angle iron construction with metal screen or sheet steel enclosures.

DISCHARGERS shall be of the wire wound induction type capable of reducing the residual voltage across the capacitor to 30 volts crest in not more than one minute.

BUS BARS shall be part of the frame and rigidly mounted on strong porcelain insulators.

CIRCUIT BREAKERS shall be equal to Westinghouse
{De-ion (600 volts, 600 amp. and below)
CL carbon (600 volts, 600 amp. and above)} mounted in
Oil (above 600 volts)
a steel encolsure and form an integral part of the equipment.

OPERATING LOSSES shall not exceed ⅓% of Kv-a. rating.

The complete equipment shall meet requirements of the Underwriters and tests and standards of A.I.E.E. and N.E.M.A.

RATINGS, WEIGHTS AND DIMENSIONS

Kv-a. Max.	Approx. Dimensions (Inches)—Weights (Lbs.) INDOOR FLOOR MOUNTING 230 Volts D.	H.	W.	Wt.	460-575 Volts D.	H.	W.	Wt.	2300-4000-4600 V. D.	H.	W.	Wt.	Watts Loss
*SMALL RACK TYPE													
30	19	53	15	430	18	29	16	175	18	29	16	200	100
45	24	53	15	595	....	....	....	.....	....	....	....	.....	150
60	30	53	15	755	19	53	15	370	19	53	16	405	200
90	....	....	....	.....	24	53	15	505	....	....	....	.....	300
120	....	....	....	.....	30	53	15	635	30	53	16	695	400
180	....	....	....	.....	....	....	....	.....	41	53	16	760	600
*LARGE RACK TYPE													
180	39	82	30	2600	....	....	....	.....	....	....	....	.....	600
270	69	82	30	2700	....	....	....	.....	....	....	....	.....	900
360	83	82	30	4700	39	82	30	2250	57	82	30	2400	1200
540	111	82	30	6950	69	82	30	3200	71	82	30	3350	1800
630	125	82	30	8000	....	....	....	.....	....	....	....	.....	2100
720	....	....	....	.....	83	82	30	4250	85	82	30	4200	2400
1080	....	....	....	.....	111	82	30	5950	113	82	30	6125	3600
1260	....	....	....	.....	125	82	30	6900	127	82	30	6950	4200

*Can also be supplied for outdoor mounting.

WHERE TO BUY

Consult nearest Westinghouse Office. See back cover. For complete information request a copy of Catalog 49-000.

ELEC-TRI-CENTER KITCHENS



FOR RESIDENCES • FOR APARTMENTS

WHAT THE ELEC-TRI-CENTER KITCHEN IS

The Westinghouse ELEC-TRI-Center Kitchen has been designed to meet the fast-growing demand for a modern kitchen that offers more than just "personality." It is ELEC-TRI-Center because it is all-electric—and planned around *three* work centers, incorporating widely advertised, universally accepted Westinghouse *Kitchen-proved* Range, Refrigerator, Dishwasher and (in some instances) Water Heater.

Women know about these kitchens, approve them, want them because they're timesaving, worksaving, moneysaving . . . because they make it easier to keep "help" or do without a maid . . . because they transform drudgery into a pleasant task.

Architects and builders specify ELEC-TRI-Center Kitchens because they're basically sound in design, plan and application—low in cost, easy to install.

CENTERS PROPERLY ORGANIZED AND LOCATED

Each center in this modern kitchen is organized according to *Home-proved* principles, in one complete, convenient work-unit.

Refrigerator and Preparation Center—Consists of cabinets, generous work surface and Westinghouse *Kitchen-proved* Refrigerator. Here are stored perishable and staple foods, preparation and baking dishes, preparation cutlery and gadgets. This brings food storage and preparation together at one logical point.

Range and Serving Center—This section includes Westinghouse *Kitchen-proved* Range, serving counter, upper and lower cabinets for storing platters, serving dishes, cooking utensils, such as frying pans and deep fat kettles, pot lids, cutlery, coffee maker, teapot and other equipment used during the actual cooking process.

Sink and Dishwasher Center—This *Center* is planned around the Westinghouse Kitchen-proved Dishwasher. Includes upper and lower cabinets and sink with work surface on each side. According to the established principle of storage, this *Center* houses the silver, china, glassware, paring knives, saucepans, cleaning materials—provides a ventilating compartment big enough for a week's supply of potatoes.

Note: Centers are available in precision-made wood cabinets and porcelain enamel work surface, and backsplashers. Or de luxe steel cabinets, Monel Metal, linoleum or Micarta work surface and backsplashers at slightly higher prices.

The centers are also placed in right relation to each other, so work flows easily, almost effortlessly, from one center to the next. The following proved *principles* govern their location.

1. *The Refrigerator and Preparation Center* is located near the outside entry where food is delivered.

2. *The Range and Serving Center* is nearest the dining room door, for greater convenience.

3. *The Sink and Dishwasher Center* must always be placed between the other two, to cut down kitchen mileage.

EASY ANSWERS TO "HOW MUCH STORAGE"

Westinghouse has developed a scientific method for figuring out exactly how much cabinet storage space is needed for EVERY installation. The method is accurate, easy to apply, tested by actual surveys of thousands of homes.

The number of bedrooms establishes the normal occupancy based on one adult person per bedroom for all except the master bedroom, for which two persons should be counted. Add two persons to number normally occupying a residence for entertaining and accumulation of articles that need storing.

CABINET STORAGE REQUIREMENTS FOR RESIDENCES

(Figured on the field-tested basis of 6 square feet of wall cabinet space for each person.)

Number of Bedrooms	Upper Shelf Storage Sq. Ft.	Base Storage Linear Feet	
		Minimum	Maximum
1	24	3	4½
2	30	4½	6
3	36	6	7½
4	42	7½	9
5	48	9	10½

STORAGE REQUIREMENTS FOR APARTMENTS

	Upper Shelf Storage Sq. Ft.		Base Storage Linear Feet	
	Min.	Max.	Min.	Max.
1 room with alcove kitchen and in-a-door bed.....	8	12	1½	2
1 bedroom.....	12	18	2	3

WESTINGHOUSE EQUIPMENT SPACE REQUIREMENTS

No. of Bedrooms	Ranges			Refrigerators			Dishwashers	
	Width		D'th	Width		D'th	W'th	D'th
	Min.	Max.		Min.	Max.			
1	21½″	38½″	25″	24″	.....	25″	48″	25″
2	38½″	42½″	25″	30″	.....	25″	48″	25″
3	38½″	42½″	25″	30″	36″	25″	48″	35″
4	38½″	42½″	25″	36″	36″	25″	48″	25″
5	42½″	42½″	25″	36″	54″	25″	48″	25″

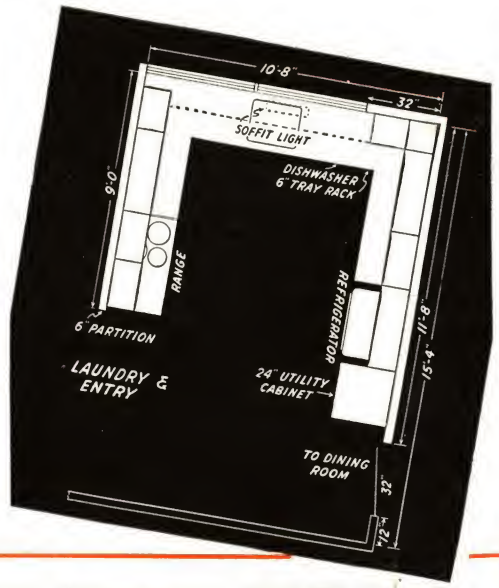
Both widths are given in the above table, because these large appliances are of absolute dimensions and cannot be squeezed into smaller spaces. Inch fractions are given for ranges to allow for easy installation. It is essential that these dimensions be adhered to.

Naturally, where minimum spaces are used, the selection of models is limited to the smaller sizes. Where maximum space is allowed, however, any Westinghouse Range or Refrigerator with sufficient capacity for the size of the residence may be installed. In the case of the small apartment, minimum range capacity and standard refrigerator capacity apply.

Westinghouse Ranges and Dishwashers are uniformly 36″ high, which is standard height of work surfaces of cabinets. Cabinets are 25″ deep, to conform to uniform appliance depth. From work surface to underside of wall cabinets is 16″, which is standard except over the range, where 20″ is the minimum.

KITCHEN PLANNING SERVICE





STANDARD KITCHEN PLANS

After careful study over a long period of time it has been found that certain kitchen *standard* arrangements can be used in a large percentage of present homes, and that these same standards can be of invaluable service to the architect, designer and builder in planning the kitchen area for new residences.

These standard plans have been designed carefully as to arrangement, balance of storage and practical use. You will find them efficient, and the kitchen a joy to the owner when installed. To the architect, designer or builder, these plans are definite guides that can be incorporated into residence plans in a minimum amount of time, solving the problem of just what is required in a kitchen. They are the result of over five years of extensive study of several thousand actual home kitchens. And they are designed to eliminate the guesswork from the planning of this important room.

Westinghouse kitchen plans cover the seven types of kitchens, which have come to be the accepted kitchen classification:

1. "U"-Shaped Kitchen
2. "L"-Shaped Kitchen
3. "Broken-U" Kitchen
4. "Broken-L" Kitchen
5. "Two-Wall" Kitchen
6. Individual Center Kitchen
7. Straight Wall Kitchen

A Typical Westinghouse ELEC-TRI-Center Kitchen

This attractive "U"-Shaped Kitchen was planned by Westinghouse to fit one of the "modern" LIFE Houses, so widely publicized and duplicated all over the country. It is one of the many plans offered free to builders and architects.

DINING FACILITIES: The matter of auxiliary dining facilities is important, as data collected during the last three years prove conclusively that the average home requires some place aside from the dining room where breakfast and snacks can be served. This same data indicates also that, in a very high percentage of homes, 60% to 70% of the meals are eaten in the kitchen or in a breakfast alcove.

MAKE USE OF WESTINGHOUSE KITCHEN PLANNING SERVICE

Westinghouse has a free kitchen planning consulting service to assist architects and builders with their kitchen planning problems. Ask your nearest Westinghouse dealer, or Westinghouse distributor for details. Two books of plans are also available. (1) Westinghouse Kitchen Planning Architects' File, scale drawings of 7 standard types, with 20 basic designs; (2) Kitchen-Laundry Plans for LIFE Houses. Either, or both, will be sent free on request. Write to Westinghouse Kitchen Planning Department, Mansfield, Ohio.



HOUSEHOLD REFRIGERATORS

APPLICATION

Household, self-contained type, domestic refrigerator for use in single or multiple dwelling construction, as well as clubs, schools, and miscellaneous application.

FEATURES

HERMETICALLY SEALED:	No belts, no pulleys, no shaft seal—not necessary to close valves if not in operation
FREON REFRIGERANT:	Odorless, non-inflammable — efficient—safe-proven
AUTOMATIC FUSING:	Built-in watchman—exclusive—automatically resets fuse, protecting mechanism—eliminates superintendant's attention to reset fuse on refrigerator
ALL STEEL:	No wood—termite proof—sturdy
THERMO-SEALED INSULATION:	High efficiency sealed with hot hydralene—non-hydroscopic
SANALLOY FROSTER:	Exclusive alloy—high conductivity—extra space for frozen food storage
TEMPERATURE CONTROL:	Mounted on unit in machine compartment—away from moisture
RESERVE CAPACITY:	Low running time, approximately one-sixth of time—uses little current. Lasts years longer, provides reserve capacity for hot weather
LEAST DEPRECIATION:	Can be amortized conservatively over longer period because of quality
5-YEAR WARRANTY:	Complete sealed-in mechanism guaranteed

Other features include convenient shelf arrangement, more usable space, automatic interior recessed light, heavy easy latch hardware, Dulux or Porcelain exterior models. MEAT-KEEPER, built in HUMIDRAWER, in some styles, and the exclusive easy EJECT-O-CUBE tray—express tray release in all models.

HOW TO SELECT

Refrigerators should carry reliable brand name, high grade service facilities locally and have proven low operating cost. On substantial quantities, the operating cost should be evaluated with the original cost over a 10-year period, in a similar manner as P.W.A. specifications on its recent purchase of 16,697 refrigerators in one order. Bidder to furnish guaranteed KWH figure with price per unit, delivered, installed and serviced, including 5-year warranty.

SPECIFICATIONS GENERALLY ADOPTED

Refrigerators shall be of the self contained, air-cooled, portable type. They shall be completely charged with refrigerant and oil, and properly adjusted at the factory so that no further immediate charging, oiling or adjustment may be necessary.

Refrigerator units shall be listed under the Underwriters' Laboratories Re-examination Service.

Refrigerators shall be constructed of materials that will not impart undesirable odors or tastes to food placed in the storage compartment.

All refrigerators shall be of a make and type that has been manufactured commercially for at least two years, and is known by the purchaser to have given satisfactory service. (This shall not be interpreted to exclude minor design changes which have not been in production two years).

REFRIGERATOR CABINET EXTERIOR

The front, side and top coverings of the refrigerator cabinet shall be sheet steel of not less than 20 gauge U.S.S. Steel shall be bonderized or treated in some equivalent manner to resist rusting.



The outer surface shall be finished with one prime coat and at least one finish coat of white lacquer, baked on.

CABINET CONSTRUCTION AND INSULATION

Cabinets shall be the type of construction known as "all steel" without the use of wood framing.

The insulation space shall be effectively sealed to prevent the entrance of moisture. This may be shown by placing the refrigerator in a 100° room of 100% humidity and running it for 30 days. The gain in weight shall not exceed 2 pounds.

The insulation shall be such as to prevent sweating of the cabinet. This may be shown by running the refrigerator in a 90° room of 75% relative humidity, maintaining a box temperature of approximately 43°. The exterior of the refrigerator should show no signs of sweating.

HARDWARE

The hardware shall be of sturdy construction and shall be attached to the cabinet in a substantial manner. Hinges shall be attached by other means than wood screws.

SHELVES

Shelves shall be so constructed and supported as to have adequate strength. Shelf supports shall be firmly fastened to the food liner and shall be tight and strong enough so that they cannot be readily turned or loosened with the fingers.

CONDENSING UNIT

This shall be of the hermetic type (no shaft seal).

Compressor shall be direct connected to the motor. The interior of the compressor shell shall be under low side pressure. All refrigerant joints shall be welded or brazed. Bolted joints and screw or flare tubing connections will not be acceptable. Condenser shall be of the finned tube type, cooled by a fan.

Overload protection shall be automatic resetting.

REFRIGERANT

Shall be Carbon dioxide; Dichlorodifluoromethane (Freon 12); Dichloromethane (Carrene No. 1); Dichloromonofluoromethane (Freon 21); Dichlorotetrafluoromethane (Freon 114); or Trichloromonofluoromethane (Freon 11).

WESTINGHOUSE ELECTRIC

OPERATING GUARANTEES AND TESTS

The performance of the refrigerators shall be equal to or better than the following values under conditions as specified. Bidders shall submit in their bids guaranteed performance data:

(A) No Load or Load Performance (4 cu. ft. Refrigerators).

	Average Room Temperature °F	Average Cabinet Temperature °F	Maximum KWH per 24 hrs.
No Load	90	43	1.05
No Load	110	48	1.80
Load	90	45	2.10
Load	110	50	3.0

(B) No Load and Load Performance (5 cu. ft. Refrigerators).

	Average Room Temperature °F	Average Cabinet Temperature °F	Maximum KWH per 24 hrs.
No Load	90	43	1.06
No Load	110	48	1.90
Load	90	45	2.20
Load	110	50	3.40

(C) No Load and Load Performance (6 cu. ft. Refrigerators).

	Average Room Temperature °F	Average Cabinet Temperature °F	Maximum KWH per 24 hrs.
No Load	90	43	1.08
No Load	110	48	2.10
Load	90	45	2.3
Load	110	50	3.7

The bidder shall state the guaranteed KWH consumption for 24 hours as determined by the average of 90° and 110° F. no load and load tests, specified under the detailed specification of the work to be performed, for the specific size refrigerator required.

ICE FREEZING PERFORMANCE

In a 110° F. room with a maximum average cabinet temperature of 48° F. at start of test, the refrigerator shall be capable of freezing the complete charge of water in less than six hours. The water shall be at a temperature of not less than 90° F. when it is placed in the refrigerator.

In conducting the load tests, the control shall be adjusted to give the average temperature given under "A", "B" and "C", with a constant 25 watt heating load in the food storage space. If the heating element is of the open type, it shall be shielded from the thermocouples. The heating element shall be placed 5″ above the bottom of the inside of compartment, and as remote from the nearest thermocouple as practical.

In all tests, cabinet air temperature shall be determined by three thermocouples located as follows:

All thermocouples shall be in a vertical line halfway between the evaporator and the side of the cabinet and halfway between the front and back walls. One thermocouple shall be located 5″ from the top of the liner, one 12″ from the top and the other 5″ from the bottom.

The recorded average cabinet temperature shall be the average of the temperatures as recorded by the three thermocouple readings. The thermocouples shall be in good thermal contact with a mass having a heat equivalent of not more than 5 grams of water.

For the no-load tests the thermocouples shall be read when the unit starts and stops and in all other tests the thermocouples shall be read at intervals of 30 minutes. The readings used in determining the no-load and food load performance shall be taken over a period of 24 hours for each test.

All accessories furnished with the refrigerator shall be in place during the test. In all tests the line voltage at the unit shall be maintained at 115 volts plus or minus 2 volts. Each refrigerator shall be separated by a distance of not less than 2′ from the other refrigerators, from test room walls, and from heating and cooling devices used in the test room.

The refrigerator shall be so placed or shielded as not to be affected by direct radiation to or from the heating and cooling equipment. Air circulation in the test room shall be such as to secure the specified uniformity of temperature distribution but shall not cause a direct draft upon the refrigerator under test. Windows in the test room shall be provided with suitable radiation shield. The ambient temperature shall be maintained within plus or minus 1° F. of the specified values at points 3′ above the floor and 1′ from the sides, front and back of the cabinet. The vertical temperature gradient from the floor to a height of 7′ shall not exceed .5° F. for each foot of vertical distance. All thermocouples used either for recording ambient temperatures or cabinet temperatures shall be shielded.

EVALUATION OF BIDS

For the purpose of determining the award, bids shall be evaluated based on the cost of the refrigerators, delivered, installed and serviced, including the bidder's 5-year unit protection plan, plus cost of operation of 1c per KWH for 10 years, as follows:

THE BID shall be evaluated by adding to the unit prices of the refrigerators, the respective guaranteed KWH consumption per 24 hours as determined by the average of the 90° F. and 110° F. room, no-load and load tests, multiplied by $36.50, which is the estimated cost of current for 10 years at $.01 per KWH. The resultant evaluated unit figures shall be multiplied by the respective quantities and the two evaluated total figures shall be added, and the result shall constitute the evaluated bid.

GUARANTEE

In order to check the guaranteed performance of the refrigerators after the award the Purchaser has the privilege of selecting four refrigerators of the type herein specified from stock for tests to be conducted in accordance with these specifications, the average of the four refrigerators tested to determine conformance.

If the KWH consumption as determined in these tests exceeds the guaranteed KWH consumption as given in the bid, the Contractor shall be liable for the difference in dollars between the guaranteed and the actual KWH consumption shown on these tests, evaluated over a 10-year period at a rate of 1c per KWH.

Such tests as desired by the Purchaser shall be made at the Purchaser's expense. If the Contractor so elects, the tests may be made at an impartial laboratory selected by the Contractor subject to the Purchaser's approval, at the Contractor's expense, exclusive of the traveling and subsistence expenses of the Purchaser's representatives. If the tests are to be conducted at a laboratory selected by the Contractor, the Purchaser reserves the right to have not more than two representatives present to witness such tests. The Contractor shall ship at his expense the required number of units to be tested to the laboratory selected.

WHERE TO BUY

Your local Westinghouse refrigerator distributor will gladly supply detailed specifications, illustrations, prices, etc. For nearest office, consult your phone book or obtain from Westinghouse District office—see list on pages 46 and 47.

ELECTRIC RANGES



Model RH-640 The Regent



Model BH-64 The Dictator



Model LH-63 The Coronet

APPLICATION

A domestic range for all types of cooking operations. Individual surface units—each providing high, medium, low and, in some cases, simmer heats—will handle every possible surface cooking operation. The oven, with two heaters and a control of temperature from 175° to 525°, takes care of all other cooking operations including—baking, roasting, broiling, oven meals, etc.

This range operates on standard, three wire service and can be plugged into a wall receptacle for a flush installation.

FEATURES

Following are a few of the many outstanding features:

(1) SOLID TOP COROX ECONOMIZER SURFACE UNIT. Element wires are completely enclosed between stainless steel discs for more protection and long life, easy cleaning and more speed. The Economizer feature offers even simmer heat for better cooking results and more economy. Unit has heat retention quality to afford cooking as long as fifty minutes after current is turned off.

(2) SUPER OVEN. Two heaters at top and bottom for greater speed—bakes biscuits in eight minutes from cold oven start. Scientific heat evener assures uniform results and even browning. Overlapped blanket insulation for better heat seal. For average baking, current on only one fifth of time. Easy, waist high broiling with top 3000 watt unit.

(3) SINGLE DIAL CONTROL. Combination switch and temperature setting. This one dial controls all oven operations.

(4) DEEP WELL COOKERS. All long, slow cooking can be done economically.

(5) EASY ACTION SWITCHES. Cam action, silver contacts give positive action and long life. All switches identified and numbered to correspond with surface units.

(6) FRONT OPENING OVEN VENTS. Direct excess oven steam away from wall. Allow range installation flush with wall.

(7) PORCELAIN ENAMEL FINISH. With acid-resisting platform.

(8) ONE PIECE UNIT BODY CONSTRUCTION. With one piece combination platform and back-splasher.

HOW TO SELECT

Different sizes and capacities are available to meet all requirements. Sizes range from 24 inch width apartment size to 42 inch width de luxe. Capacity varies from apartment model with three surface units and one oven to four surface units and cooker with two ovens.

SPECIFICATIONS

1. Specifications apply to electric ranges, intended for domestic use. An electric range is defined as consisting of a cooking top, and an oven suitable for baking, roasting and broiling operations.
2. Contractors shall secure Underwriters' Laboratories listing of the range before shipment is made on any orders.
3. It is the intent of specifications to define ranges which are substantially constructed of heavy gauge materials so that they will be enabled to stand extremely heavy service with a minimum amount of maintenance. These requirements apply equally to mechanical and electrical construction, as well as the design of the range, switches, surface units and related parts.
4. The ranges shall have the following over-all dimensions: "W" "H" "D".
5. The range shall be so constructed that the back-splasher may be placed against a wall at the rear. Underwriters' approval must be specifically secured as to this feature. There shall be no controls, outlets or projections on either side of the range which would prevent cabinets or other pieces of apparatus, to be placed directly adjoining the range.
6. Ranges shall be designed to operate on . . . volt, 3-wire single phase, 60-cycle service.
7. Each range shall be equipped with an oven which with the door closed shall have an inside width not less than 16″, inside height not less than 14″, and inside depth not less than 17″.

The oven lining shall be of enameling sheet not less than .025 thickness, finished inside and out in ground coat porcelain enamel.

Each oven shall be equipped with a unit or units which make possible satisfactory baking, broiling and roasting operations. Oven heating units shall be readily removable without the use of tools.

8. The cooking top shall have surface units with a diameter of the heated surface not less than 6″ or more than 7″ and with 1200 watts input at not in excess of 120 volts; also a unit or units with heated surface of not less than 8″ or more than 9″ diameter of 2000 to 2200 watts input at not in excess of 120 volts; where required a 5 to 6 quart capacity deep well cooker with a low heat of less than 150 watts shall be supplied in place of a large unit in four surface unit ranges.

All units shall be of the enclosed or metal encased type. The heated surface shall be of stainless steel or nickel chromium alloys which have been proved by experience to withstand continuous operation at 1300 degrees F. Units with cast iron heated surfaces will not be acceptable. Each unit shall have a supporting ring or pan of porcelain enameled ground coat steel, stainless steel, ribbed cast iron or nonferrous materials which will not deteriorate under the action of food spillage. Heating units in deep well cookers shall be of current design acceptable by the Underwriters' Laboratories.

9. Each surface heating unit shall be controlled by a switch. These switches shall be of not less than four positions, three heat, reversible, rotating type.

Surface unit switches shall be of the load balancing type such that the neutral and the two outer wires of the circuit are connected to the heating unit with the switch in the HIGH heat position.

10. A terminal connection shall be provided to permit the fastening of the range connecting cable lugs (furnishing and connection of this cable will be done by others).
11. Each range shall be substantially crated to conform with the specifications of the Railroad Freight Inspection Bureau.

WHERE TO BUY

Contact the local Westinghouse Electric Supply Company or Westinghouse distributor as listed on pages 46 and 47.

SPECIFICATIONS AND DIMENSIONS

Type and Name	Dimensions	No. of Ovens	Platform Height From Floor	Oven Size	Surface Units	Surface Cooker	Toe Base	Maximum Input KW
MH-664 Emperor	(W) (H) (D) 42″x48″ x25″	2	36″	(W) (H) (D) 16″x14″x19½″	4	No	Yes	15.81
RH-640 Regent	42″x48″ x25″	1	36″	16″x14″x19½″	3	1	Yes	10.7
BH-64 Dictator	38″x41⅝″x24⅞″	1	36″	16″x14″x19½″	3	1	Yes	9.79
KH-64 Diplomat	38″x41⅝″x24⅞″	1	36″	16″x14″x19½″	3	1	Yes	9.76
TH-64 Conqueror	38″x41⅝″x24⅞″	1	36″	16″x14″x19½″	3	1	(Legs)	9.76
LH-63 Coronet	21″x41⅝″x24″	1	36″	16″x14″x18⅛″	3	No	Yes	8.4

ELECTRIC WATER HEATERS

APPLICATION

Electric water heaters are primarily designed to supply complete domestic hot water service, and are available in various capacities for different home requirements. Round and square models are available for either kitchen or basement installations, including two counter height (36″) models with one piece porcelain enamel top and back-splasher.

These heaters may also be used in commercial and industrial applications, such as lavatory and washroom installations, where installation at the point of use is desirable from an economic standpoint.

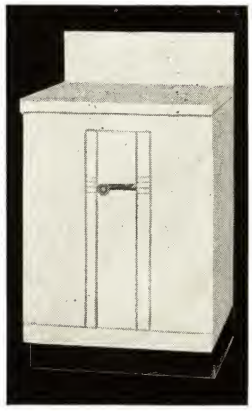
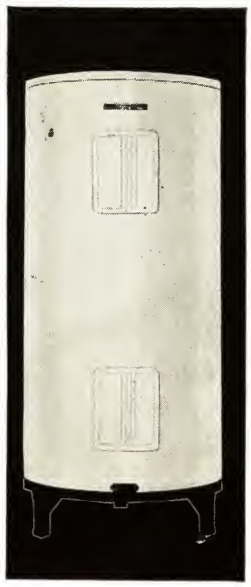
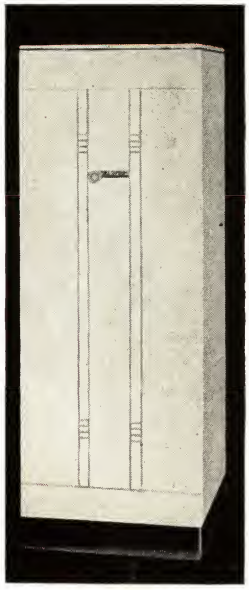


Table Top Model—
capacities 15 or 30 gal.



Round Model—
capacities 30, 40, 52, 66, 80 and 120 gal.



Square Model—
capacities 5, 10, 30, 40, 52, 66, 80 and 120 gal.

FEATURES

COMPLETELY AUTOMATIC — Thermostatically controlled, requiring no attention from user.

HIGHLY EFFICIENT—Heat is supplied by inserting elements directly in the tank, in direct contact with the water, thus realizing practically 100% heat transfer. Thoroughly insulated at all points, radiation losses are at a minimum.

MAXIMUM HOT WATER DELIVERY—A specially designed baffle, directly over the cold water inlet, prevents incoming cold water from mixing with the heated water, thus guaranteeing maximum hot water delivery.

SAFETY—All hazard of flame and fumes is eliminated. All live parts are insulated, and protected by steel casing, to protect against accidental contact. Heaters are grounded when connected to piping system, eliminating possibility of shock.

LOW MAINTENANCE COSTS—Design and construction are such that service is negligible. Being completely automatic, requiring no attention from user, possibility of accidental damage is practically eliminated.

MODERN APPEARANCE—Casings are simple in design and finished in White Dulux over bonderized steel and, as no combustible fuel is used, will retain their newness for years.

EASE OF INSTALLATION—All heaters, except the 120 gallon size, are completely assembled when shipped, and require only connection to water and electric service.

HOW TO SELECT

(A) Heaters are available with either galvanized or Monel tanks, and local water conditions will determine which may be used.

(B) Capacities required are somewhat dependent on the type of electric rate available, and the local utility should be checked as to this point.

(C) Wattages, voltage and wiring specifications are also dependent on the utility rate structure, and should be checked.

DIMENSIONS

Due to the multiplicity of models and sizes available, space does not allow listing of all dimensions. However, these heaters are all designed for home use, and only unusual conditions will prevent their easy installation in space normally available for such equipment.

TYPICAL SPECIFICATIONS

1. GENERAL—Storage type electric water heaters are to be completely assembled, or complete for assembly on installation. They are to be automatic, the standard catalog product of manufacturers regularly engaged in the electric water heater business.

2. APPROVAL—Heaters are to be listed by the Underwriters' Laboratories, Inc.

3. CONSTRUCTION—Storage tanks shall be constructed of galvanized steel or non-ferrous alloy,* all joints welded or riveted, or both. Tanks shall be designed for a hydrostatic test pressure of not less than 300 lbs. per square inch. Pipe and fittings shall be of galvanized iron, brass or copper.* The hot water outlet shall be equipped with a heat trap. Provision shall be made for installation of an approved relief valve locally. A drain valve with hose connection shall be provided at the extreme bottom of the tank. A baffle shall be provided within the tank, to minimize mixing of cold with hot water. Exterior jacket shall be of steel suitably rustproofed and with baked enamel finish in manufacturer's standard colors. Tanks shall be insulated with approved material, Palco Wool or equal, to an average thickness of not less than 3″ at sides, 4″ at top, and 2″ at bottom.

(*Depending on local water conditions.)

4. HEATING ELEMENTS—Shall be of immersion type, bolted to tank in such manner that they can be easily removed for service or cleaning. One heating element shall be provided approximately ¼ of tank capacity down from the top of tank and a second element shall be provided as near the bottom of the tank as practicable. Elements shall be rated in accordance with requirements of the local utility.

5. THERMOSTATS—Each heating element shall be controlled by a separate thermostat adjustable over a minimum range of 120° F. to 170° F. Settings shall be plainly indicated, and thermostats should be set, at factory, at 145° to 150° F.

6. WIRING—All wiring shall be of approved asbestos covered type, installed in rigid conduit or tubing within the casing, and shall terminate in an outlet box easily accessible for electrical connections.

7. GUARANTEE—Heaters furnished under these specifications shall be guaranteed, as to materials and workmanship, for a period of one year from date of purchase.

OPTIONAL SPECIFICATIONS—In the event of the local utility having specific requirements for the approval of electric storage water heaters, these specific requirements should be added.

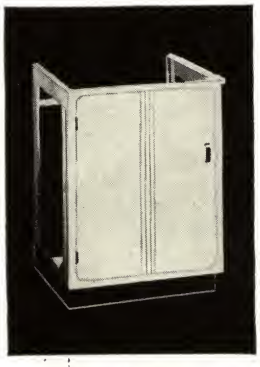
WHERE TO BUY

Westinghouse Electric Water Heaters are available from all our agent jobbers, listed separately on pages 46 and 47. For additional information, request Water Heater Catalog No. 9WH-0301.

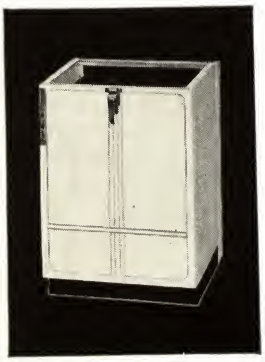
ELECTRIC DISHWASHERS



DWB-48—Micarta top complete sink and dishwasher combination; with Monel metal top, DWM-48, with green Jaspe Linoleum top, DWL-48.



DWC-24—24″ Sink cabinet unit only, without top or sink basin.



DW-24—24″ dishwasher unit only, without top.



DW-23—Portable dishwasher mounted on casters. Requires no plumbing connections.

APPLICATION

Designed for application in individual homes or multiple residences, the electric dishwasher is installed in connection with the sink. Models can be a complete sink and dishwasher combination including all the usual sink equipment in addition to the dishwasher unit, or an individual dishwasher unit to be installed underneath an existing counter surface and adjacent to the sink. A completely portable model requiring no plumbing connections is available for rented homes or places where a permanent installation cannot be made.

The electric dishwasher will wash dishes, glasses, silverware, and pots and pans, cleaning all the utensils soiled during the preparation or serving of a meal in the home. It is not designed for commercial restaurants or institutions.

FEATURES

The front opening door of the Westinghouse dishwasher assures greatest convenience in use. It opens down, out of the way, providing an always available work surface directly adjacent to the sink where it is most useful when cleaning up after a meal.

The two sliding racks assure easy loading without bending over. Either rack can be loaded or unloaded without moving the other. Thus lifting heavy racks is eliminated. Racks have lock stops so they cannot be pulled out too far and dropped. They can, however, be removed easily by lifting.

Visible fill and drain control gives positive indication when the tank is full and empty. The washing compartment is charged with water through a double fixture mounted on the back of the sink basin. The fixture acts like a funnel. When filling, the faucet is swung over the opening and water run through the funnel fixture into the tank. No additional pipe directly connected to the compartment is required and no extra faucet connections needed. Water connections are made only to the standard sink faucet.

When the tank is charged with the correct amount of water (5 quarts) it automatically begins to pump out through the combination fill and drain fixture. Discharged water runs down through the sink basin and into the standard sink trap.

Centrifugal pump discharge forces water at high speed up to the sink basin where it drains through the sink trap. No special trap or gravity drain pipe is required or directly connected to the washing compartment. Forcing the water out removes the danger of clogging drain pipes and provides a completely sanitary cabinet with no possible cross connections between water supply and drain.

Two controls operate the dishwasher—a motor switch to turn the motor off and on and a drain control to open and close the valve to fill or empty the washing compartment.

Automatic safety switch. When the door is opened the current is automatically cut off, shutting off the motor. It is impossible to run the motor or water impeller when the door is opened.

In over-all appearance the dishwasher matches standard cabinet dimensions. It has a one inch over-hang and a 4″ x 3″ toe space base.

HOW TO SELECT

Three different models of the complete sink and dishwasher are available. Sink tops are Black Westinghouse Micarta Monel Metal or Green Jaspe Linoleum. The top selected can thus be matched up with other counter surfaces in the kitchen. The complete sink and dishwasher combination should be selected when an individual installation can be made away from other cabinets and where an unbroken counter surface is not required. The unit can then be installed as a complete unit.

Where a continuous counter surface is desired, this can be installed independently of the dishwasher and the dishwasher unit itself installed underneath the counter adjacent to the sink. This unit is the DW-24. The sink front is designed to match the DW-24 and makes a complete 48″ unit without top or sink basin. These two units are especially desirable in new home construction following the modern trend of unbroken counter surfaces.

The portable dishwasher can be classed as a plug-in appliance to be used where the cabinet type cannot be installed.

DIMENSIONS

Complete Sink and Dishwasher Combination

Height to Work Top—36″. Height of Backsplasher—7¾″. Top—48″ x 25″. Sink Basin—20″ x 18″. Floor Space Required—48″x25″. Removable Filler Strips (placed at back of side panels) — 2″ wide. Toe Space—3″ deep x 4″ high.

Dishwasher Unit Only

24″ wide x 24″ deep x 34½″ high. Toe Space — 3″ deep x 4″ high. Metal base strip removable to allow greater flexibility in treatment of floor covering. Fill and drain fixtures mounted on sink basin.

SPECIFICATIONS

Complete Sink and Dishwasher

FINISH: Cabinet—high-temperature white Dulux. Work Top—green Jaspe linoleum, Monel Metal, or black Micarta. Sink Basin—Monel Metal. Dishtank Interior—acid-resisting, white porcelain enamel. Dishracks and Silver Basket—rustproof metal with dull nickel finish.

MOTOR: Westinghouse low-starting current, ¼ H.P. 115-volt, 60 cycle, A.-C. or equivalent.

WIRING REQUIREMENTS: The outlet box, mounted on the motor, for house wiring connections.

PLUMBING REQUIREMENTS: Faucets take standard ⅜″ pipe and sink basin is furnished with nipple for standard 1½″ waste connection. Waste trap not furnished.

CAPACITY: Dishes and glassware—57 pieces; silverware—45 pieces. Will accommodate all average-size plates. Water required for each wash and each rinse—5 to 6 quarts.

DW-24 Dishwasher Unit Only

FINISH: Cabinet—high-temperature white Dulux. Dishtank Interior—acid-resisting, white porcelain enamel. Dishracks and Silverware Basket—Rustproof metal with dull nickel finish.

EQUIPMENT: Two dishracks, silverware basket, dish scraper, measuring spoons, package of washing compound, drain and filler tubes, combination fill and drain fixture, and installation and operating instructions.

MOTOR: Westinghouse low-starting current, ¼ H.P. 115 volt, 60 cycle, A.-c. or equivalent.

WIRING REQUIREMENTS: The outlet box is mounted on the motor for permanent line connection.

CAPACITY: Dishes and glassware—57 pieces; silverware—45 pieces. Will accommodate all average-size plates. Water required for each wash and each rinse—5 to 6 quarts.

WHERE TO BUY

Westinghouse Electric Dishwashers can be purchased through authorized Westinghouse dealers or distributors located throughout the country. For additional information ask for specification sheets 7DW-0601 and 8DW-0601.

HOME-PROVED LAUNDRY EQUIPMENT

A MODEL FOR EVERY TYPE OF FAMILY

HOME-PROVED: Every claim made for Westinghouse Washers and Ironers has been proved by hundreds of *notarized* tests . . . in homes all over the country . . . under normal home conditions. These *certified* tests assure laundry equipment that does the things it's supposed to do.

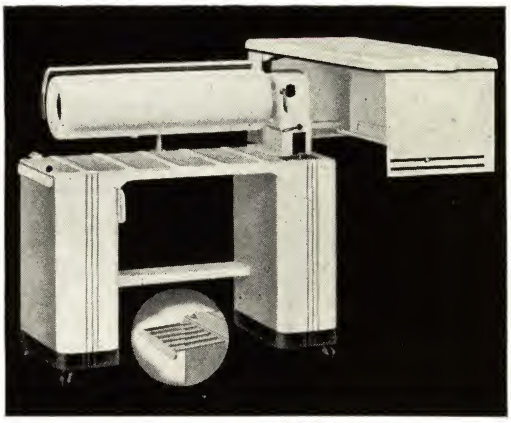
HOME-PROVED WASHER FEATURES: French-type turbulator for "Natural" washing action. "Sediment Zone" to guard against recirculation of soil during washing operation. Porcelain enamel tub—easier to clean, helps maintain water temperatures. *Automatic Pressure Wringer* with famous Westinghouse safety devices. Welded one-piece steel chassis and sturdy bracing for longer life and to prevent "creeping." Quiet, vibrationless operation.

HOME-PROVED IRONER FEATURES: Super-size roll and shoe to increase ironing speed. Adjust-o-matic Temperature Control—assures better results, faster ironing, greater saving of effort, as well as electricity—divided heating element individually controlled prevents one end of roll from overheating while other end is in use. Simplified controls for operating ironer. Emergency release lever frees shoe from roll instantly.



SPINNER DRYER

OVER-ALL DIMENSIONS: 39½ in. L, 24¼ in. W, 39¼ in. H. Damp-dries one batch of clothes while washing another. Tub capacity: 9 lbs. washables (dry weight). Tub empties itself automatically through turret; no pump required to empty spinner.



DE LUXE ADJUST-O-MATIC IRONER

OVER-ALL DIMENSIONS: 36¾ in. L, 16½ in. W, 37 in. H. Super-size roll and shoe, divided heating element individually controlled, 2 speeds, 2 operating controls. Pilot light, on-and-off motor switch and swingout top. Inset shows handy extension shelf which pulls out easily and prevents soiling of garments which otherwise might drop on floor.

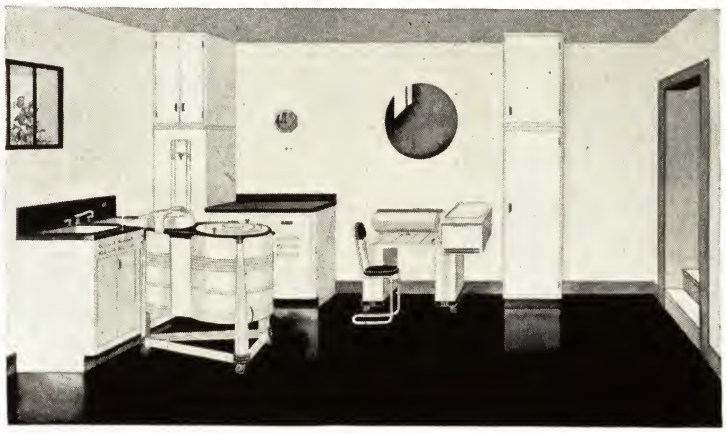
ADDITIONAL MODELS

Four Wringer-type washers with home-proved features and tub capacities of 6, 7, 8 and 9 lbs. washables (dry weight). *Maximum dimensions:* 31¼ in. L, 28 in. W, 48¼ in. H. *Minimum dimensions:* 29¼ in. L, 26 in. W, 48¼ in. H.

Three Ironers: 1 cabinet and 2 open models, with *Home-proved* features, all except lowest priced model have Adjust-o-matic heat control. Maximum Over-all Dimensions: 36¾ in. L, 16½ in. W, 39 in. H.

WHERE TO BUY

See the nearest Westinghouse distributor, as listed on Pages 46 and 47.

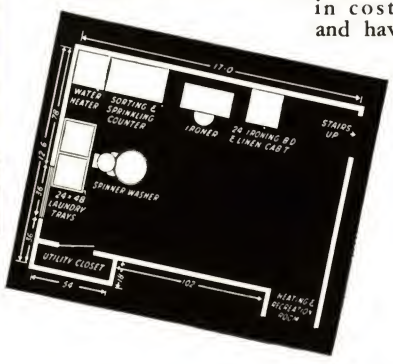


CO-OPERATION WITH ARCHITECTS

HOME LAUNDRY PLANNING SERVICES

Westinghouse Planned Electrical Laundries meet the demand for a modern timesaving, stepsaving, money-saving Home Laundry. They are basically sound in design and flexible. Simply adapt a scale drawing to your plan and save yourself a lot of extra work.

Westinghouse Planned Electrical Laundries are low in cost, easy to install, and have the added appeal of Westinghouse *Home-proved* Washers and Ironers. Write Westinghouse Laundry Planning Department, Mansfield, Ohio, for co-operation on special planning problems. *No obligation.*

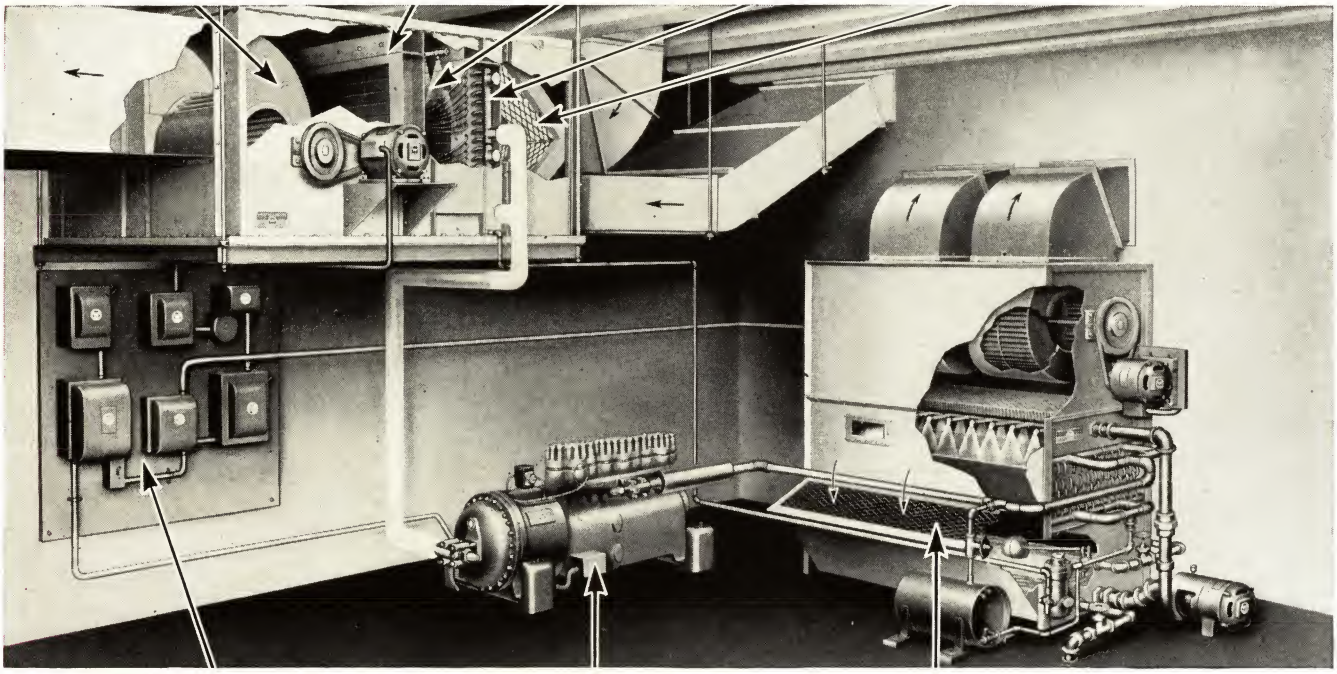


SEND FOR FREE PLANS

NEW WESTINGHOUSE LAUNDRY PLANS—Scale drawings, with supplementary data and specifications free on request. Write to Westinghouse Electric & Manufacturing Company, Mansfield, Ohio.

Westinghouse

UNIFIED AIR CONDITIONING EQUIPMENT FOR COMMERCIAL BUILDING APPLICATIONS



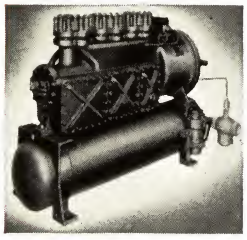
APPLICATION

Westinghouse equipment provides air conditioning for every building application. Every unit is engineered by Westinghouse and matched in capacity and performance to operate in a Unified System.

Self-contained equipment, factory-engineered and built, is available over a variety of sizes for small to medium-size spaces. For larger commercial spaces to be served by central systems, Westinghouse matched equipment is provided to meet any load requirement.

All Westinghouse Air Conditioning systems are applied in carefully engineered installations, with responsible maintenance service to assure continuing efficiency.

FEATURES



CONDENSING UNITS AND COMPRESSORS: Available in capacities from 1 to 100 tons. Exclusive Westinghouse Seal-less construction, without shaft seals, belts, pulleys or other visible moving parts. Extremely compact and light in weight, they require unusually small floor space, and usually may be installed without the need for special foundations.

HEAT TRANSFER SURFACES: Cooling surfaces for Freon or cold water—heating surfaces for steam, hot water or vapor, are available in sizes to match all other Westinghouse equipment. Tubes and fins are of pure Lake copper, soldered together for permanent contact and efficiency. All joints in Freon surfaces are silver-soldered.

AIR CONDITIONING UNITS: Available both in horizontal and vertical types to fit all construction requirements. Sizes to fit all compressors in the line, and to take all matching cooling and/or heating surfaces. This unit incorporates the blower, heat-transfer surfaces, humidifiers, and filters.

EVAPORATIVE CONDENSERS: Evaporative condensers combine the performance of water-cooled condenser, air-cooled condensers and a cooling tower in one piece of equipment, cut down water consumption 95% to 98%. They are particularly valuable where city water is expensive, or its use restricted. Operating cost is lower than any other condensing method. Available in sizes to match all compressors in which water consumption is a factor.

ELECTRICAL EQUIPMENT: Linestarters, circuit breakers, switches, conduits, etc., are also available for every air conditioning requirement. See nearest Westinghouse office for details.

HOW TO SELECT

Fit equipment to meet the total B.t.u. load according to capacities under local conditions as listed on Westinghouse performance data sheets. Equipment is available to meet, without overpowering, yet with adequate margin of safety, every cooling and heating requirement. Your consulting engineer and your Westinghouse contractor can make these selections correctly and quickly by use of performance data sheets and other selective equipment (See "Where to Buy").

TYPICAL SPECIFICATIONS

The air conditioning equipment shall be a Westinghouse unified system, or equivalent, with all essential units bearing a single manufacturer's trade-mark.

The compressor shall be Westinghouse Model ...., or equivalent, of .... hp. capacity, of direct-drive construction, with positive pressure oil pump lubrication without shaft seals, pulleys, belts or chains, and with all moving parts completely sealed within a steel or cast-iron housing, immersion-tested for leaks under 200 lbs., per sq. in., pressure, and run-tested for not less than four hours.

The cooling surfaces shall be Model ...., Westinghouse .... row coils, or equivalent, factory-matched to the above compressor.

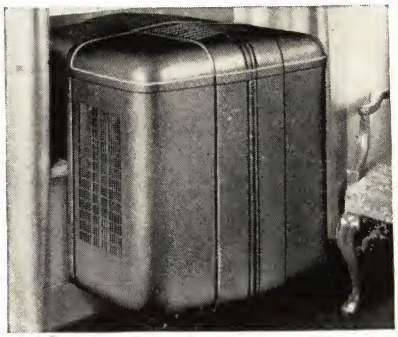
The evaporative condenser shall be a Model .... Westinghouse Aquamiser.

WHERE TO BUY

Contact your nearest Westinghouse District Sales Office (See list on pages 46 and 47); your local Westinghouse Authorized Air Conditioning Contractor (see your classified telephone directory); or address Westinghouse Air Conditioning Department, Springfield, Massachusetts. Write for the Westinghouse Architect's Data file, containing complete specifications and all necessary selection equipment.



SELF-CONTAINED SYSTEMS





THE MOBILAIRE—(*Above*)—the air-cooled model. (*Below*)—the water-cooled model.



THE UNITAIRE—complete, self-contained, air conditioning systems for installations requiring up to 30 tons capacity. (3-Ton Model Shown)

APPLICATION

Small to medium-sized spaces requiring up to 30 tons cooling capacity may be served with Westinghouse Unitaires. For smaller applications, 1 to 5 ton room units suffice. Over 5 tons, self-contained remote units connected to duct systems are available in single units of 7½, 10 and 15 tons capacity. Combinations of any two units are practical, providing capacities of 17½, 22½, 25 and 30 tons. Heating coils and humidifiers may be added to all Unitaires to render them year-round systems.

FEATURES

All Westinghouse Unitaires are engineered, built and thoroughly tested at the factory, and shipped ready for installation. Power, water, drain, and duct connections complete installations. All refrigeration engineering on the job is eliminated.

HOW TO SELECT

Fit equipment to total B.t.u. load according to capacities under local conditions as listed in Westinghouse performance data sheets. (See "Where to Buy," above.)

TYPICAL SPECIFICATIONS

The air conditioning system shall consist of .... Model .... Westinghouse Unitaires of .... hp. capacity each, or equivalent, containing hermetically-sealed condensing unit, constructed without shaft seals, belts, pulleys, gears, or chains, and with all matching equipment completely installed, factory-tested and approved.

WHERE TO BUY

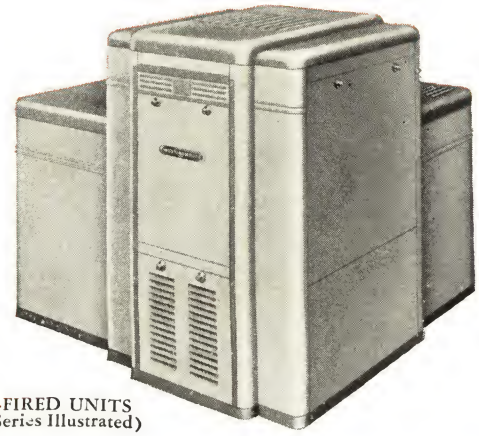
See "Where to Buy" on this page, above.

Westinghouse

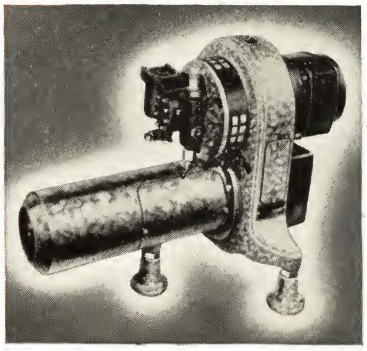
HOME HEATING AND AIR CONDITIONING UNITS



OIL-FIRED UNITS (1100 Series Illustrated)



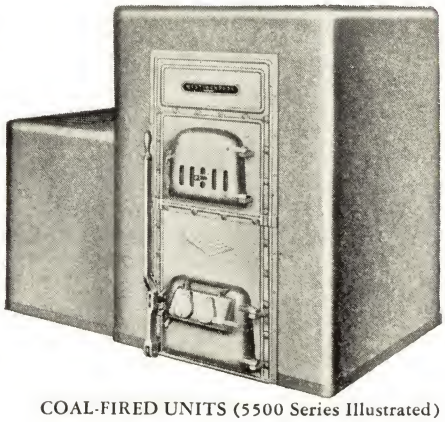
GAS-FIRED UNITS
("D" Series Illustrated)



CONVERSION OIL BURNER (G Series)



COOLING UNIT (RU-90)



COAL-FIRED UNITS (5500 Series Illustrated)

APPLICATION

Modern, automatic heating for the modern home, small, medium-size or large, is available in the Westinghouse Home Heating and Air Conditioning line. And summer cooling and dehumidifying may be added to any system with the RU-90 cooling unit. It is installed in the supply duct, and circulated air in summer passes through the heat-transfer surface where it is cooled and dehumidified.

FEATURES

The broadly inclusive nature of the Westinghouse heating line is readily apparent in the following:

There are four different types of gas-fired units; two types are direct gas-fired winter air conditioning systems, each in a range of four sizes, the other in two sizes. Two types of direct oil-fired units, one type available in three sizes, the other in six sizes. Three types of coal-fired units, two in four sizes, one in five sizes, three types adaptable for stoker applications. Two sizes of Conversion Oil Burners, one cooling-dehumidifying unit for installation in the supply duct of any forced-air system. Automatic controls are available for all lines.

HOW TO SELECT

Choose the series type as to type of fuel preferred, type of equipment preferred, then select the size to meet the total B.t.u. load requirements. Ask for Westinghouse Home-Comfort Application Manual for complete and detailed selection data. (See "Where to Buy" below.)

TYPICAL SPECIFICATIONS

The Winter Air Conditioning Equipment on this installation shall be a Westinghouse De Luxe Winter Air Conditioning .... fired unit capable of delivering .... B.t.u. at register with a blower capacity of .... CFM, or equivalent. The motor must be of suitable horse power to deliver this volume of air against ½ in. static pressure.

The trunk velocity must not exceed 650 FPM in the main ducts and 500 FPM in the risers, branches and registers.

All registers are to be 1 ft. 6 in. below ceiling with adjustable louvers.

The Summer Air Conditioning Equipment shall be a Westinghouse "Factory Sealed Refrigerant Cycle" Unit capable of reducing the temperature 12° F., when the outside temperature is 95, and ⅓ of the air circulated is outside air, or equivalent.

WHERE TO BUY

Contact your nearest Westinghouse District Sales Office (see list on pages 46–47); your local Westinghouse Home Heating and Air Conditioning Dealer (see your classified telephone directory); or address Westinghouse Air Conditioning Departments, Springfield, Mass.

WESTINGHOUSE WATER COOLERS


THRIFT WATER COOLER (Bottle Type)


THRIFT WATER COOLER (Bubbler Type)


AIRLINE WATER COOLER


MICARTA WATER COOLER


STREAMLINE WATER COOLER


EXPLOSION-PROOF WATER COOLER

APPLICATION

THRIFT MODELS—Recommended for small offices. Bottle type and pressure types for cup or bubbler service; not equipped for remote bubbler service.

AIRLINE MODELS—For use where demands are moderate and operating conditions normal such as in offices, reception rooms, public buildings, etc.

MICARTA MODEL—For exclusive smartness . . . as in clubs, hotels, executive offices and fashionable stores.

STREAMLINE MODELS—Ideal for factories where demands are great and operating conditions are severe.

EXPLOSION-PROOF MODELS—Recommended for powder mills, airplane hangars, oil refineries, flour mills, paint factories, textile mills or chemical laboratories where explosion-proof equipment is a necessity.

FEATURES

HERMETICALLY-SEALED UNIT—All Westinghouse Water Cooler Units are Hermetically-sealed inside an airtight case of solid steel. No dust, dirt or moisture can ever harm the working parts.

FIVE YEAR PROTECTION PLAN—Because the unit is Hermetically sealed, Westinghouse can and does provide five years protection on the Hermetically Sealed-in mechanism.

EXCLUSIVE STAINLESS STEEL TOP—On Streamline and Airline Series.
ALL STEEL CABINET
NON-CLOG DRAINS
IMPROVED HIGH EFFICIENCY COOLING CHAMBER
7 POINT TEMPERATURE SELECTOR

HOW TO SELECT

Use Table "A" to determine the required capacity in gallons per hour of 50° F. outlet water.

In Table "B" under the probable water temperature at the cooler location, select a cooler that has the required capacity in gallons per hour which also meets the appearance and application requirements.

In many cases it will be necessary to use two small coolers instead of one high capacity unit, to decrease the distance to be traveled to a cooler or to limit the number of people per cooler to 150.

TYPICAL SPECIFICATIONS

Water cooler shall be self-contained with compressor, cooling tank, etc., enclosed within the cabinet. The refrigerating unit shall be a water or air-cooled, electrically driven, automatically controlled machine. The motor shall be suitable for use on . . . volt, . . . cycle single phase current.

The water cooler shall have a capacity to cool . . . gallons of water per hour from 80° F. inlet temperature to 50° F. outlet temperature. This capacity shall be based on two thirds of the water being wasted to the cooler drain.

TABLE "A"

Type of Service	Delivered Water Temp. Fahren.	Gals. Per Person Per Hr.	Waste and Consumption Per Person Per Hour-Ozs.	Consumption Only Per Person Per Hour Ounces	People Served Per Gallon
Office (Cup)	45—50	.033	4.2	4.2	30
Office (Bubbler)	45—50	.083	10.5	4.2	12
Light Manufacturing	45—50	.143	18.3	7.32	7
Heavy Manufacturing	50—55	.20	25.6	10.24	5
Hot Heavy Manufacturing	55—60	.25	32.0	12.8	4
Restaurant	40—45	.1 Gallon per Person			
Cafeteria	40—45	.083 Gallon per Person			
Theatre (Movie)	45—50	1.0 Gallon per 100 Seats			
Theatre (Legitimate)	45—50	1.0 Gallon per 100 Seats Continuous Capacity			
Schools	45—50	Each Fountain shall have Storage Capacity to provide 5 Gallons in 10 Minutes			
Hospitals		Requirements per Person—Same as Office			
A. per Bed	45—50	.083 Gallon			
B. per Attendant	45—50	.083 Gallon			
Hotels	45—50	.08 Gallon per Hour per Room			
Public Fountains (Amusement Parks, Fairs, etc.)	45—50	20 to 35 Gallons per Hour			
Department Stores	45—50	4 to 5 Gallons per Hour per Fountain			
Hotels and Office Building Lobbies					

TABLE "B" RATINGS, WEIGHTS, DIMENSIONS, ETC.

	Model	Type	Voltage	Frequency (Cycles)	Height	Width	Depth	Weight	Finish	Capacity Gal. Per Hour 80° Room—50° Outlet Inlet Water Temperatures 60°	70°	80°	90°	100°
Thrift	LB-3	Bottle	115	60	40¾″	15 5/16″	22⅛″	130	Black Wrinkle	12.0	5.6	3.4	2.3	1.8
	LP-3	Pressure	115	60	41″	15 5/16″	22⅛″	144	Black Wrinkle	9.8	5.1	3.4	2.6	2.1
	LPX-3	Bubbler	115	60	43⅛″	15⅞″	15¼″	151	Black Wrinkle	11.5	6.0	4.1	3.1	2.1
	LPO-3	Pressure	115	D.C.	41⅜″	15 9/32″	19¼″	147	Black Wrinkle	8.0	4.2	2.8	2.1	1.7
	LBO-3	Bottle	115	D.C.	41⅛″	15 9/32″	19¼″	147	Black Wrinkle	9.7	4.5	2.8	1.9	1.5
	LP-325	Pressure	115	25	41″	15 5/16″	22⅛″	130	Black Wrinkle	8.2	4.3	2.8	2.2	1.8
	LB-325	Bottle	115	25	40¾″	15 5/16″	22⅛″	130	Black Wrinkle	10.0	4.7	2.8	1.9	1.5
	LPXO-3	Pressure	115	D.C.	43⅛″	15⅞″	15¼″	167	Black Wrinkle	10.6	5.3	3.5	2.7	2.2
	LPX-325	Pressure	115	25	43⅛″	15⅞″	15¼″	160	Black Wrinkle	9.0	5.0	3.4	2.6	2.1
Air Line	P-5	Pressure	115	60	42½″	15 5/16″	15 15/16″	162	Black Dulux	13.0	7.2	4.8	3.9	3.2
	P-8	Pressure	115	60	42½″	15 5/16″	15 15/16″	181	Black Dulux	21.7	11.5	8.0	6.4	5.3
Micarta	MT-8	Pressure	115	60 or 25	43″	18⅞″	18⅞″	236	Black Micarta	17.0	10.0	7.1	5.3	4.2
Streamline	WP-925	Pressure	115	25	42 9/16″	15¾″	15 5/16″	169	Black Dulux	23.8	12.6	8.2	6.1	4.9
	WP-10	Pressure	115	60	42 9/16″	15¾″	15 5/16″	165	Black Dulux	30.1	15.1	9.8	7.5	5.9
	WP-19	Pressure	115	60	42 9/16″	15¾″	15 5/16″	207	Black Dulux	56.0	28.8	18.9	14.1	11.1
Explosion Proof	WPE-925	Pressure	115	25	42 9/16″	21″	16⅛″	189	Black Dulux	23.8	12.6	8.2	6.1	4.9
	WPE-10	Pressure	115	60	42 9/16″	21″	16⅛″	189	Black Dulux	30.1	15.1	9.8	7.5	5.9
	WPE-19	Pressure	115	60	42 9/16″	21″	16⅛″	216	Black Dulux	56.0	28.8	18.9	14.1	11.1

*Coolers rated for 60 cycles, 115 volts also operate at 50 cycles, 100 volts.

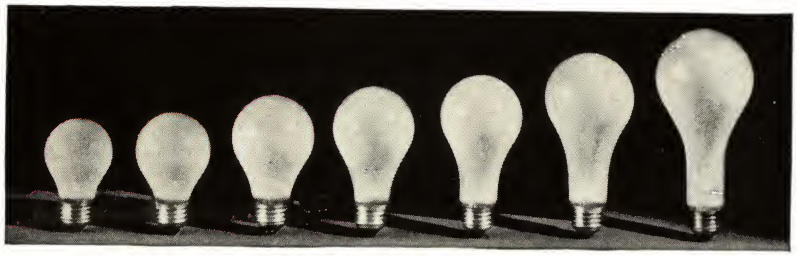
WHERE TO BUY

Refer to your nearest Westinghouse Electric Supply Company or Westinghouse Distributor. See list on pages 46 and 47.

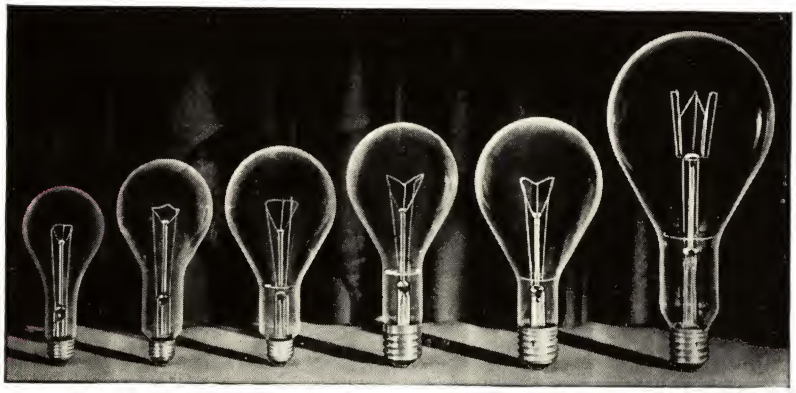
W WESTINGHOUSE ELECTRIC

WESTINGHOUSE MAZDA LAMPS

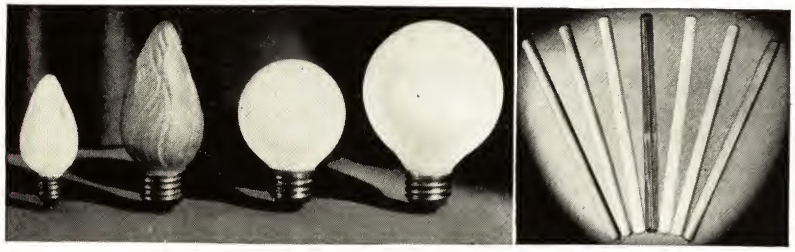
LARGE MAZDA LAMPS AND TYPE D LAMPS



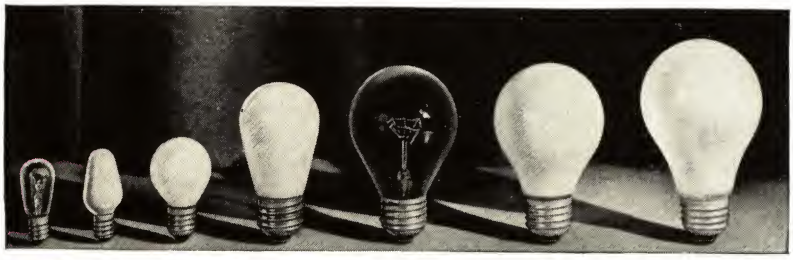
Watts 15 25 40 50 and 60 75 100 150



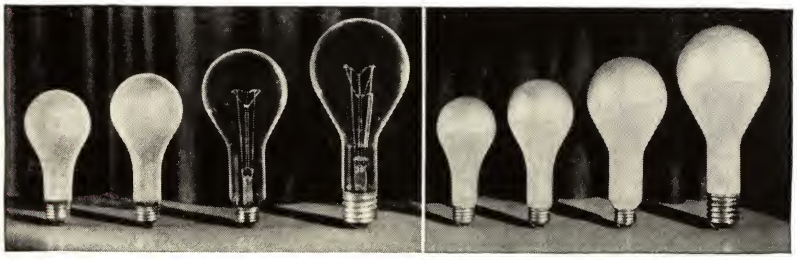
Watts 150 200 300 (Med.) 300 (Mogul) 500 1000



Watts 15 25 25 25 and 40 30 and 60 Lumiline



Watts 6 7 10 6 and 10 25 and 50 25 40



Watts 100 150 200 300 MAZDA DAYLIGHT LAMPS

100 150 200 300 SILVERED BOWL MAZDA LAMPS

STANDARD LINE

For prices see Westinghouse Mazda Lamp Price Schedule

GENERAL LIGHTING SERVICE
110, 115, 120 Volts

APPLICATIONS—These lamps fulfill 65% of requirements for homes, stores, offices, schools and factories, will operate in any burning position, should be protected against moisture when used outdoors.

FINISHES—INSIDE FROSTED finish on 15 to 500 watt sizes reduces glare, aids diffusion. Light output rated same as for clear glass. WHITE BOWL finish on 150 to 1500 watt sizes absorbs 3% of light, is recommended for open-type fixtures where lamp burns base up. CLEAR finish available on 150 to 1500 watt sizes.

BASES—MEDIUM SCREW base on sizes up to 300 watts, MOGUL SCREW base on all others. MEDIUM BIPOST base on new 1000 watt lamp in small size T bulb.

DECORATIVE AND LUMILINE LAMPS
110, 115, 120 Volts

Decorative lamps are designed for ornamental fixtures where shape of the bulb is related to the design of the luminaire. Lumiline lamps have contact caps at each end which fit into specially designed sockets and are ideal for built-in and decorative lighting.

SIGN AND DECORATIVE LIGHTING SERVICE
110, 115, 120 Volts

APPLICATION—For outdoor exposed signs, colored festoons and similar decorative lighting.

BASES—6 watt (clear) and 7 watt lamps have candelabra bases; 10 watt lamp has intermediate base. All others have medium bases. See Lamp catalog for finishes and colors.

MAZDA DAYLIGHT AND SILVERED BOWL LAMPS
110, 115, 120 Volts

Mazda Daylight lamps have blue bulbs, give light approaching daylight quality. 60 and 100 watt sizes made only with Inside Frosted finish, 150 to 500 sizes both Inside Frosted and Clear. Silvered Bowl lamps have a permanent coating of mirror silver on the bowl which shields direct filament rays and acts as a reflector. Sizes: 60 to 500 watts.

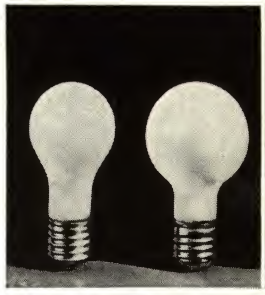
WESTINGHOUSE MAZDA LAMPS

LARGE MAZDA LAMPS AND TYPE D LAMPS—Continued

MAZDA THREE-LITE LAMPS
110, 115, 120 Volts

The two filaments lighted separately or together give 3 levels of light.

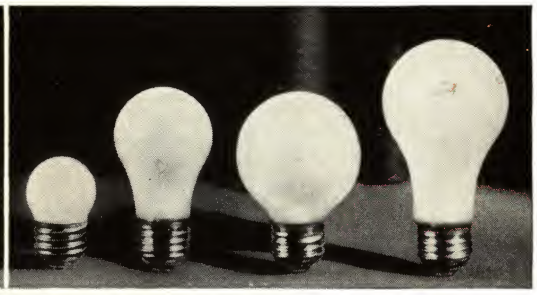
SIZES—50-100-150, 100-200-300 watts.



50-100-150 100-200-300
THREE-LITE LAMPS

TYPE D (NON-MAZDA) LAMPS
110, 115, 120 Volts

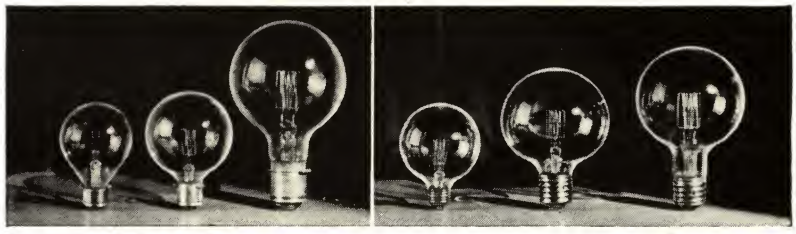
These are high quality lamps of proven efficiency and performance. They are not Mazda lamps. 30 watt lamp is made also in colors.



7½ 15 30 60 Watts
TYPE D LAMPS

SPOTLIGHT LAMPS
110, 115, 120 Volts

SIZES—100, 250, 400 and 1000 watts. 1000 watt lamp has MOGUL PREFOCUS base; all others have MEDIUM PREFOCUS base.



FLOODLIGHTING LAMPS
110, 115, 120 Volts

SIZES—250, 500 and 1000 watts. All lamps have concentrated filaments.

SODIUM VAPOR LAMPS

APPLICATIONS—For highway lighting.

CHARACTERISTICS—The visible light produced is yellow in color, monochromatic and cannot be changed by filters. Lamps give most satisfactory performance when burned in specified position. They are not Mazda Lamps.

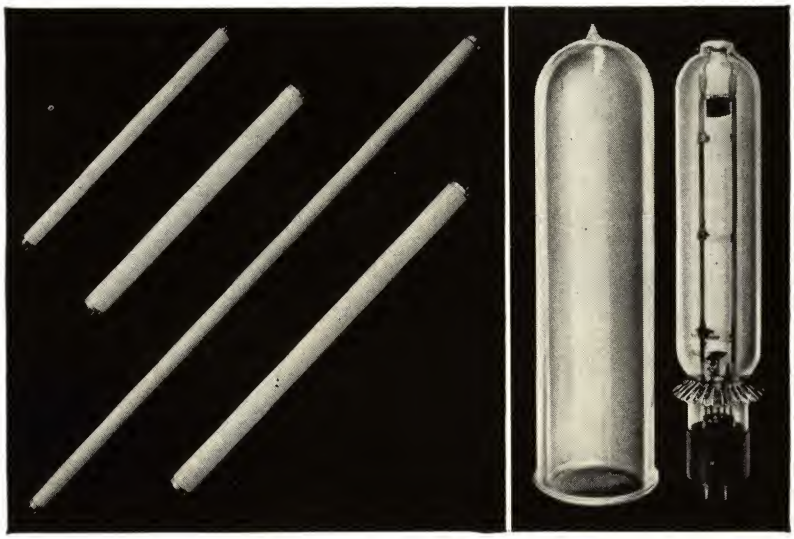
SIZES—6,000 and 10,000 lumens.

FLUORESCENT LUMILINE LAMP

APPLICATIONS—Modern colored lighting effects for theaters, exhibits, show rooms and light of daylight quality where color discrimination is a factor.

CHARACTERISTICS—These lamps give more light than comparable ordinary Mazda lamps and are cooler than lamps of the same lumen output. Must operate in conjunction with special control equipment.

SIZES—15, 20, 30 watts.



15 15 30 20 Watt
FLUORESCENT LUMILINE LAMPS

10,000 LUMEN SODIUM VAPOR LAMP WITH VACUUM FLASH

PROJECTOR—REFLECTOR LAMPS

APPLICATIONS—Projector Lamps—For indoor or outdoor use spotlighting or floodlighting signs, exhibits, filling stations, show windows. Also for supplementary lighting in factories, stores, etc.

Reflector Lamps—For indoor use only, to spotlight windows, displays, exhibits, etc.

CHARACTERISTICS—These lamps combine filament, reflector and lens all in one lamp, assuring accurate focus and permanent reflector efficiency.

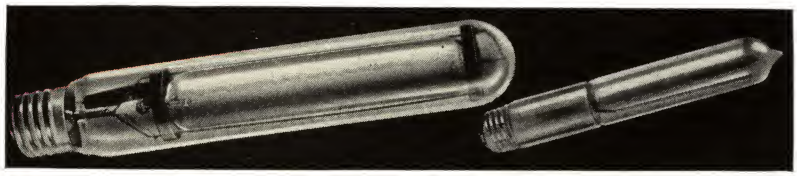
SIZES—150 watts each.



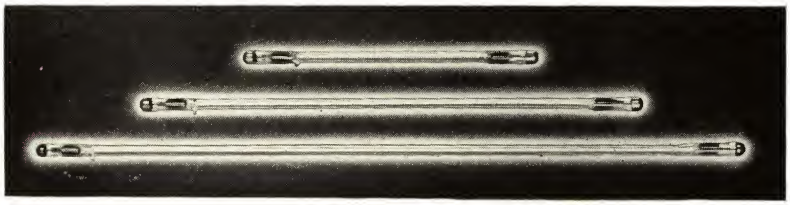
PROJECTOR SPOT PROJECTOR FLOOD REFLECTOR

WESTINGHOUSE MAZDA LAMPS

LARGE MAZDA LAMPS AND TYPE D LAMPS—Continued



Watts 400 250



Inches 10, 20, 30

MERCURY VAPOR LAMPS

These lamps require special equipment for their use. Because of the color quality of light produced they are applicable to many industrial and commercial uses. They are not Mazda Lamps.

STERILAMPS*

Westinghouse Sterilamps produce bactericidal ultra-violet radiations, are used to reduce contamination from air-borne bacteria in meat refrigerators, refrigerated show cases, bakeries, hospitals and in the sterilization of drinking glasses used in public places. They are not Mazda Lamps.



HIGH VOLTAGE LAMPS
220, 230, 240, 250, 260 Volts

These are available in sizes from 25 to 1000 watts. For base sizes and finishes see Lamp Catalog.

TUBULAR LAMPS
110, 115, 120 Volts

These lamps are made with Medium screw bases in 25 and 40 watt sizes clear.

VIBRATION AND ROUGH SERVICE LAMPS
110, 115, 120 Volts

APPLICATION—The 50-watt Vibration lamp is designed to withstand high-frequency vibration such as is found on high-speed machines. This lamp has a clear bulb. 50 and 100 watt Rough Service lamps are Inside Frosted, and are designed for extension cord use, etc.

MAZDA LAMPS FOR EVERY PURPOSE

To meet specialized services, thousands of types of MAZDA lamps—not listed in this Catalog—are available. Only a partial list of special lamp services is given below—for full information on any special lamp or lighting service, consult the nearest Westinghouse Lamp Division Sales Office. Complete study of each specific problem and cooperation between equipment and lamp designers are necessary to insure the proper characteristics of the lamp for most satisfactory performance.

Advertising Projector
Altimeter Lamp
Annunciator
Bake Oven
Barrel Inspection
Battery Inspection
Berthlight
Code Beacon
Deep Sea Underwater Floodlight
Dentiscope
Distilling Tube Inspection
Diving Lamp
Electrocardiograph
Elevator Signal
Emergency Exit
Fire Alarm Signal
Fire and Police Hand Lantern
Furnace Indicator
Galvanometer
High Speed Signal
Lighthouse
Lightship
Marine Signal
Motorboat
On-course Beacon
Ophthalmometer
Oscillograph
Photocell Exciter
Photographic
Photometric Standards
Photophone Recorder
Pilot Balloon Observation
Pilot Lamp for Rectifier
Plant Research
Police Signal
Pyrometer
Radio Circuit—Resonance Illuminator Indicator
Radio Picture Transmission
Radio Protector
Railway Light Signal
Recording Microphotometer
Rectifier (Street Series)
Resistance
Scientific Instrument
Seismometric Recording Apparatus
Sensitometer
Spectrograph
Sperry Gyroscope
Studio Effect Lighting
Subway Door Indicator
Surgical
Switchboard
Target Projection
Telephone Trouble
Ultraviolet Transmitting Bulb Lamps
X-ray Illuminator
X-ray Instrument

* TRADEMARK REG. U. S. PATENT OFFICE

OTHER WESTINGHOUSE PRODUCTS FOR BUILDINGS

For complete information see the nearest Westinghouse office listed on pages 46-47 or other source mentioned below.

CUBICLE TYPE SWITCHGEAR—For incoming lines and feeders of 2300 to 15,000 volts, indoor cubicles provide complete factory assembled, steel enclosed, safety type switching equipment at minimum expense. Also used for distribution substations and providing control for motors. The units are for either manually or electrically-operated circuit breakers and may be equipped with automatic reclosing relays, if electrically operated, which will reclose the circuit breaker a definite number of times on a predetermined schedule.

METAL CLAD SWITCHGEAR—Essentially the same as cubicle type switchgear, metal-clad is equipped with removable breakers which may be easily and quickly replaced with a spare unit. Especially desirable where it is important that service be maintained during inspection and maintenance of the breakers.

LOW VOLTAGE DISTRIBUTION SWITCHBOARDS—For distribution of secondary electrical energy for power and lighting circuits of 600 volts a-c. or 250 volts d-c.

ENGINE DRIVEN GENERATORS—For use where low speed gas, oil or steam engines are used to generate electrical energy. Available in sizes ranging from 25 to 8000 Kw., at commercial voltages from 240 to 13,800 volts, 1, 2 and 3 phase, 25, 50 or 60 cycles and speeds from 100 r.p.m. and up.

GENERATOR SWITCHBOARDS—Provide an inexpensive means for operation of generators and exciters of 480, 600 and 2400 volts and where the total connected generator capacity does not exceed 5000 kv-a. at 2400 volts.

FEEDER SWITCHBOARDS—For controlling incoming lines, transformer feeders and outgoing lines of 480, 600 and 2400 volts. Used for general power and lighting service in buildings where the total feeding capacity does not exceed 5000 kv-a. at 2400 volts.

MOTOR GENERATORS—A complete line of motor generator sets are available for battery charging generator excitation, radio applications, etc.

BELL RINGING TRANSFORMERS—For such applications as doorbell, buzzer, door-opener and annunciator service in houses, small apartments, business establishments, etc. Available in primary voltages of 100/120 and 200/240 volts with secondary voltage of 6-8-10-12 volts. Frequencies are 50/133 and 25/40 cycles.

LIGHTNING ARRESTERS—For the protection of outdoor mounted conventional transformers against lightning. Available in voltage ratings from 3000 volts up to 73,000 volts.

INSTRUMENTS—A complete line of ammeters, voltmeters, wattmeters, recorders and special instruments for switchboard mounting, portable service and the new socket applications. With socket instruments install an inexpensive socket in each circuit or on each machine. Then plug in any socket ammeter, voltmeter or wattmeter, as easily as plugging in a floor lamp.

METERS—Either detachable or conventional type watthour meters for single phase or polyphase service. Standard meters are available in capacities of 5, 15 and 50 amperes but will take care of infrequent peak loads up to three hundred per cent of rating without loss of accuracy.

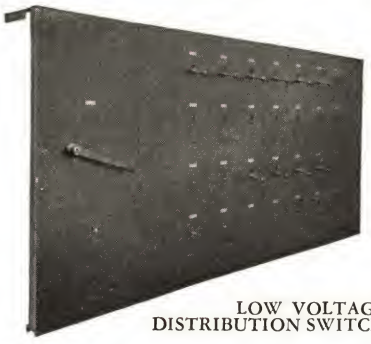
CURRENT AND POTENTIAL TRANSFORMERS—A complete line of indoor and outdoor current and potential transformers are available for metering, relaying, and switching applications.



CUBICLE SWITCHGEAR



METAL CLAD SWITCHGEAR



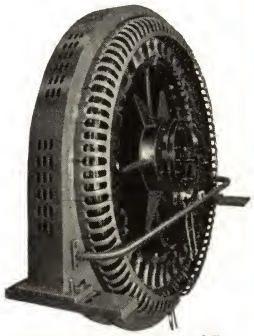
LOW VOLTAGE DISTRIBUTION SWITCHBOARD



GENERATOR SWITCHBOARD



FEEDER SWITCHBOARD



ENGINE GENERATOR

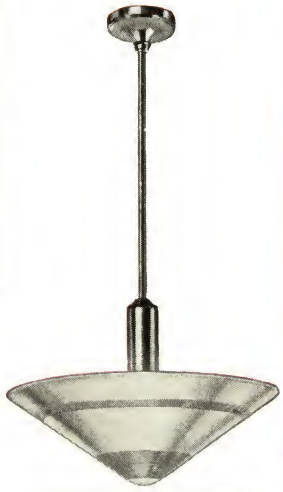


CSP TRANSFORMER

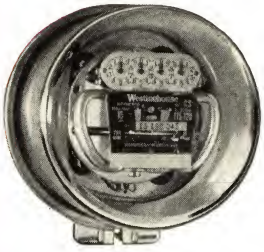
OTHER WESTINGHOUSE PRODUCTS FOR BUILDINGS—Continued



SOCKET-TYPE AMMETER



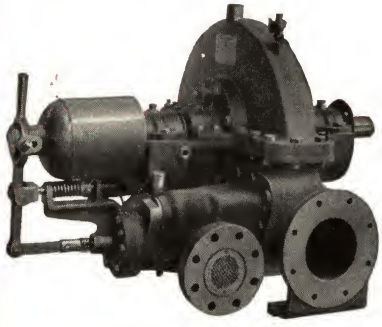
LIGHTING FIXTURES



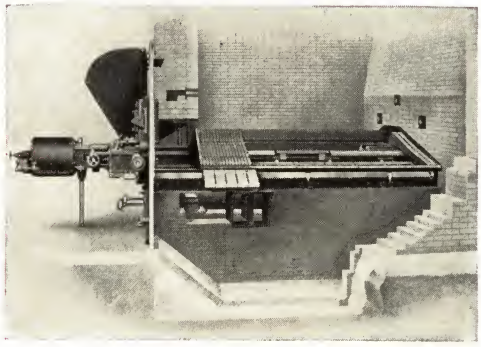
METER



BATTERY CHARGER



STEAM TURBINE



STOKER

DISTRIBUTION TRANSFORMERS—For use where the owner of a building purchases power at high voltages. Six types are available: (1) Conventional Transformers for indoor mounting in fire-proof vaults or for outdoor mounting. Lightning protection provided by separate arresters and cutouts. (2) SP Surge Protected Transformers for outdoor mounting where built-in lighting protection only is desired. (3) CSP Completely Self-Protecting Transformers for outdoor mounting where built-in lightning and overload protection is desired. (4) Inerteen Filled Transformers for indoor applications eliminate the necessity for fire-proof vaults. (5) SM Subway Type for underground mounting in manholes where dampness is prevalent. (6) Network Transformers for use on low-voltage network systems. Available in either non-submersible or submersible water-tight designs.

STOKERS—Single Retort Stokers are available for boiler requirements ranging from 100 to 500 horsepower. Multiple Retort Stokers are designed for heavy duty service where boilers range from 300 horsepower up.

TURBINES—A complete line for driving boiler, feeder and fire pumps, induced or forced-draft fans and similar apparatus. Also for direct connection to generators for power supply. Ratings from 5 horsepower up.

BATTERY CHARGERS—A trouble-free line of Rectox battery chargers with no moving parts, no liquids and no chemicals. Invaluable for keeping batteries fully charged at all times.

ELEVATORS—Westinghouse manufactures a complete line of elevators and electric stairways in a wide range of capacities and speeds to meet the application. Call the nearest Westinghouse Elevator Company office for complete information.

LIGHTING—A complete line of flood, commercial, industrial, street and aviation lighting equipment is available. For more detailed information on commercial and industrial lighting see Section 24 of Sweet's Catalog File for the Building Market. For further information consult the Westinghouse representative.

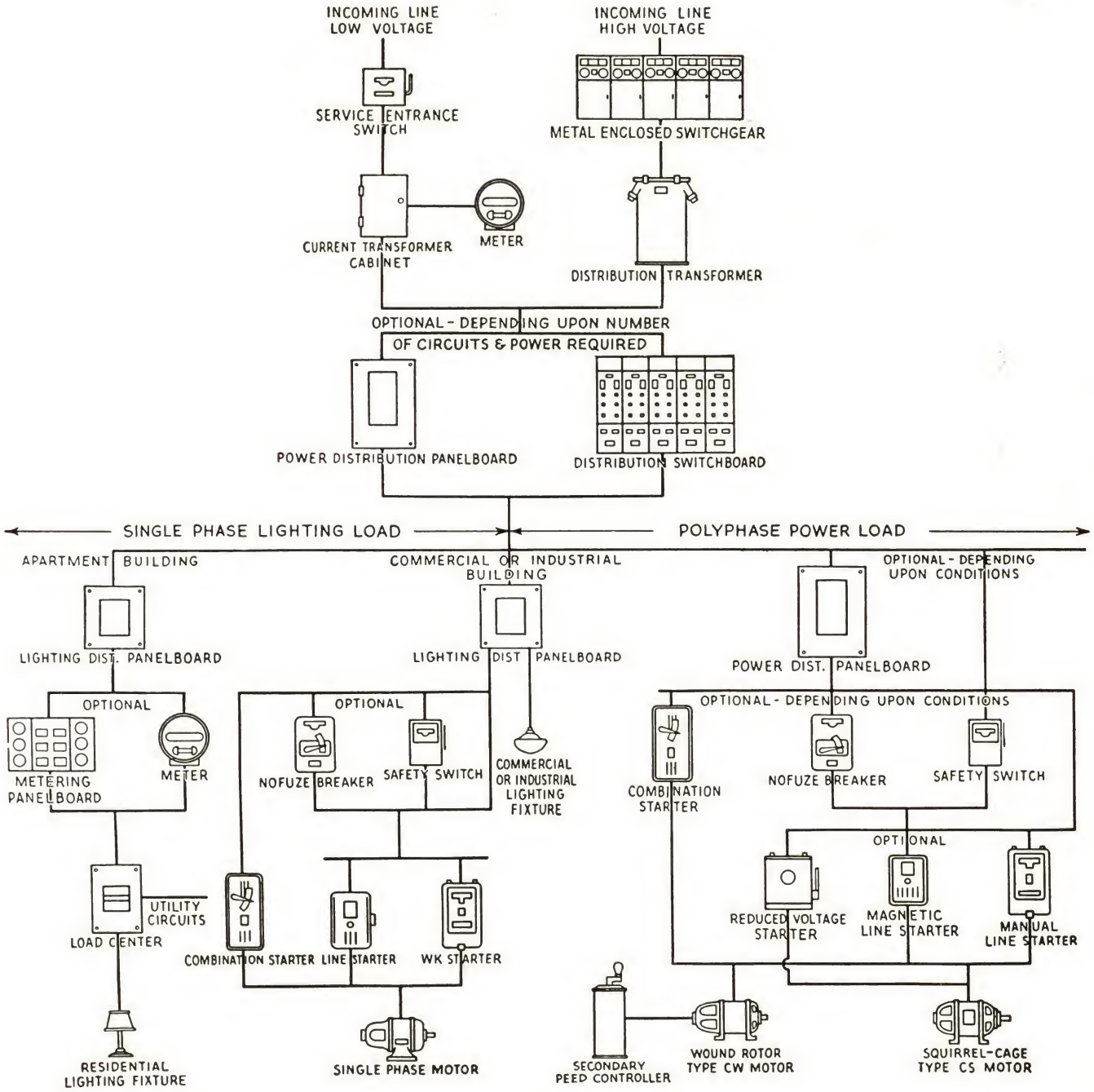
PRECIPITRON—A simple, but highly efficient dust precipitator which, with a pressure drop not exceeding $\frac{1}{10}$ inch of water, will remove more than 90% of all solid matter from air or gases regardless of the size of the particles. It is particularly adaptable for use with heating, ventilating and air conditioning systems.

MICARTA—A laminated plastic material unequalled for wall paneling, bar, sink, counter and table tops, window sills, kick plates and partitions. Strong, durable . . . doesn't break, splinter or chip . . . unaffected by alcoholic liquors, weak acids, alkalies or smouldering cigarettes, it is available in twenty-two colors, any two of which assure full harmony or complete contrast. Can be furnished in brilliant glossy or soft satin finish. For more detailed information and full color reproductions of designs, see Section 11 of Sweet's Catalog File for the Building Market.

WIRING DEVICES—A complete line of 2, 3 and 4 way wall switches, convenience outlets, clock outlets, fan hangers and other wiring devices are made by the Bryant Electric Company. See Section 23 of Sweet's Catalog File for the Building Market for more complete information.

X-RAY—A complete line of equipment for X-Ray diagnosis and treatment is manufactured by the Westinghouse X-Ray Company. Consult their nearest office, listed on the back cover, for information regarding this equipment, and its voltage and current ratings.

DIAGRAM SHOWING WESTINGHOUSE EQUIPMENT FOR THE DISTRIBUTION, CONTROL AND UTILIZATION OF ELECTRICAL ENERGY



The diagram above will sum up the application of various Westinghouse Equipment described throughout this catalog. Quite naturally one diagram cannot cover every phase of usage or combination of units. However—the flow of current from incoming line to eventual usage is indicated for small as well as large installations.

Westinghouse will be glad to cooperate with architects in the solution of any electrical problems. On pages 46 and 47 of this catalog will be found complete listing of branch offices, agent jobbers, etc. There is one in your area—write direct for specific data.

Westinghouse

WESTINGHOUSE ELECTRIC & MANUFACTURING CO.

BUSINESS ADDRESSES

Headquarters, Pittsburgh, Pa.

*AKRON, OHIO, 106 South Main St.
*ALBANY, N. Y., 456 No. Pearl St.
§ALEXANDRIA, VA., 121 Frazier Ave.
*ALLENTOWN, PA., 522 Maple St.
*AMARILLO, TEXAS, 1401-A Fillmore St.
*APPLETON, WISC., 1708 N. Drew St., P. O. Box 206
†APPLETON, WISC., 1029 So. Outagamie St.
#†*ATLANTA, GA., 426 Marietta St., N. W.
xATTICA, N. Y.
*BAKERSFIELD, CALIF., 2224 San Emedio St.
*BALTIMORE, MD., 118 E. Lombard St.
①†BALTIMORE, MD., 501 East Preston Road
§BALTIMORE, MD., 40 S. Calvert St.
①xBALTIMORE, MD., 2519 Wilkens Ave.
①*BEAUMONT, TEXAS, 875 21st St., P. O. Box 2367
*BINGHAMTON, N. Y., Suite 704, Marine Midland Bldg., 86 Court St.
*BIRMINGHAM, ALA., 2030 Second Ave.
*BLUEFIELD, W. VA., 208 Bluefield Avenue
§BOISE, IDAHO, P. O. Box 1597
*BOSTON, MASS., 10 High St.
†#BOSTON, MASS., 235 Old Colony Ave., So. Boston, Mass.
*†BRIDGEPORT, CONN., Bruce Ave. & Seymour St.
*BUFFALO, N. Y., 814 Ellicott Square Bldg.
†#BUFFALO, N. Y., 1132 Seneca St.
*BURLINGTON, VER., 207 Park Ave.
*BUTTE, MONTANA, 129 West Park St.
①#BUTTE, MONTANA, 742 Bryant Ave.
*CANTON, OHIO, 120 W. Tuscarawas St.
*CEDAR RAPIDS, IOWA, 813 18th St., S.E., P. O. Box 148
*†#CHARLOTTE, N. C., 210 East Sixth St.
*CHARLESTON, W. VA., 1415 Oakmont Rd., P. O. Box 865
*CHATTANOOGA, TENN., 536 Market St.
*CHICAGO, ILL., 20 N. Wacker Drive
†#CHICAGO, ILL., 2211 W. Pershing Road
xCHICOPEE FALLS, MASSACHUSETTS
*†#CINCINNATI, OHIO, 207 West Third St.
*†x#CLEVELAND, OHIO, 1216 W. Fifty-Eighth St.
§COLUMBIA, S. C., 912 Lady St.
*COLUMBUS, OHIO, 85 E. Gay St.
*DALLAS, TEXAS, 209 Browder St.
#DALLAS, TEXAS, 1712 Laws St.
*DAVENPORT, IOWA, 206 E. Second St.
*DAYTON, OHIO, 30 North Main St.
*DENVER, COLORADO, 910 Fifteenth St.
#DENVER, COLORADO, 1700 Sixteenth St.
†DENVER, COLORADO, 988 Cherokee St.
§DENVER, COLORADO, Gas & Elec. Bldg.
xDERRY, PA.
*DES MOINES, IOWA, 1400-1408 Walnut St.
*†#DETROIT, MICH., 5757 Trumbull Ave., P. O. Box 828
*DULUTH, MINN., 10 East Superior St.
§EAST PEORIA, ILL., 900 W. Washington St.
x#EAST PITTSBURGH, PA.
*EL PASO, TEXAS, Oregon and Mills Sts.
#EL PASO, TEXAS, 450 Canal St.
§EL PASO, TEX., c/o Zork Hdwe. Co., 309 N. El Paso St.
*#†EMERYVILLE, CALIF., 1466 Powell St.
①xEMERYVILLE, CALIF., 6121 Green St.
*ERIE, PA., 1003 State St.
*EVANSVILLE, IND., 201 N. W. First St.
*†FAIRMONT, W. VA., 602 Cleveland Ave.
§FARGO, N. D., 520—3rd Ave. N.
*FORT WAYNE, IND., 1010 Packard Ave.
*FORT WORTH, TEXAS, 501 Jones St.
*FRESNO, CALIF., 872 Peralta Way, P. O. Box 632
*GARY, IND., 846 Broadway
*GRAND RAPIDS, MICH., 511 Monroe Ave. N. W.
①*GREENSBORO, N. C., N. Elm St. Apartments Apartment N-1 P. O. Box 1828.
①*GREENVILLE, S. C., 110 W. Tallulah Drive, P. O. Box 1591
*HAMMOND, IND., 235 167th St.
*HARTFORD, CONN., Main & Pearl Sts., P. O. Box 745
*HONOLULU, T. H., Hawaiian Elec. Co. Agt.
*HOUSTON, TEXAS, 1314 Texas Ave.
#HOUSTON, TEXAS, 2313 Commerce Ave.
†HOUSTON, TEXAS, 2315 Commerce Ave.
§HOUSTON, TEXAS, 611-15 Petroleum Bldg.
*†#HUNTINGTON, W. VA., 1029 Seventh Ave.
*INDIANAPOLIS, IND., 137 S. Penna. Ave.
†INDIANAPOLIS, IND., 551 West Merrill St.
*ISHPEMING, MICH., 433 High St.
*JACKSON, MICH., 212 West Michigan Ave.
*†JOHNSTOWN, PA., 107 Station St.
*JOPLIN, MO., 420 School St.
*KANSAS CITY, MO., 101 W. Eleventh St.
#†KANSAS CITY, MO., 2124 Wyandotte St.
*KNOXVILLE, TENN., Gay & Clinch St.
xLIMA, OHIO
*LITTLE ROCK, ARK., 1115 West 24th St.
§LITTLE ROCK, ARK., c/o Fones Bros. Hdwe., 2nd & Rock Sts.
*†#LOS ANGELES, CALIF., 420 So. San Pedro St.
①*LOUISVILLE, KY., 332 West Broadway
①*MADISON, WISC., 508 Edgewood Ave. P. O. Box 228
①xMANSFIELD, OHIO, 246 E. Fourth St.
*MARSHALL, TEXAS, 504 Nathan St.
*MEMPHIS, TENN., 130 Madison Ave.
*MIAMI, FLA., 1036 N. Miami Ave.
*MILWAUKEE, WISC., 546 North Broadway
†MILWAUKEE, WISC., 1669 N. Water St.
*†#MINNEAPOLIS MINN., 2303 Kennedy St., N. E.
*MONROE, LA., 1301 N. Fourth St.
*NASHVILLE, TENN., 219 Second Ave., N.
*NEWARK, N. J., 1180 Raymond Blvd.
†#NEWARK, N. J., Haynes Ave. & Lincoln Highway
xNEWARK, N. J., Plane & Orange St.
*NEW HAVEN, CONN., 42 Church St., P. O. Box 1817
*NEW ORLEANS, LA., 333 St. Charles St.
#NEW ORLEANS, LA., 527 Poydras St.
*NEW YORK, N. Y., 150 Broadway
①†NEW YORK, N. Y., 150 Varick St.
*NIAGARA FALLS, N. Y., 205 Falls St.
*NORFOLK, VA., City Hall Ave. & Bank St.
*OKLAHOMA CITY, OKLA., 120 N. Robinson St.
#OKLAHOMA CITY, OKLA., Third & Alie Sts.
*OMAHA, NEB., 409 South Seventeenth St.
§OMAHA, NEB., 117 N. 13th St.
*PEORIA, ILL., 104 E. State St.
*†#PHILADELPHIA, PA., 3001 Walnut St.
*PHOENIX, ARIZONA, 11 West Jefferson St.
#PHOENIX, ARIZONA, 425 Jackson St.
xPITTSBURGH, PA., Nuttall Works, 200 McCandless Ave.
z*PITTSBURGH, PA., 306 4th Ave., Box 1017
#†PITTSBURGH, PA., 543 N. Lang Ave.
*PORTLAND, MAINE, 142 High St.
*PORTLAND, OREGON, 309 S. W. Sixth Ave.
†PORTLAND, OREGON, 2138 N. Interstate Ave.
#PORTLAND, OREGON, 720 N. Thompson St.
*†PROVIDENCE, R. I., 16 Elbow St.
*RALEIGH, N. C., 803 North Person St., P. O. Box 2146
§RALEIGH, N. C., P. O. Box 443
§READING, PA., 619 Spruce St.
①*RICHMOND, VA., 301 S. Fifth St.
*§ROANOKE, VA., 726 First St., S.E.
†ROCHESTER, N. Y., 410 Atlantic Ave.
*ROCHESTER, N. Y., 1048 University Ave.
*ROCKFORD, ILL., 130 South Second St.
*SACRAMENTO, CALIF., 1805 20th St.
①§*SALT LAKE CITY, UTAH, 10 West First South St.
†#SALT LAKE CITY, UTAH, 346 A Pierpont Ave.
*SAN ANTONIO, TEXAS, 115 W. Travis St.
§SAN FRANCISCO, CALIF., 1355 Market St.
*SAN FRANCISCO, CALIF., 1 Montgomery St.
*SEATTLE, WASH., 603 Stewart St.
†#SEATTLE, WASH., 3451 East Marginal Way
xSHARON, PA., 469 Sharpsville Ave.
*SIOUX CITY, IOWA, 2311 George St.
*SOUTH BEND, IND., 216 East Wayne St.
§SOUTH BEND, IND., 107 E. Jefferson St.
xSOUTH PHILA. WKS., Essington, Pa.
°SOUTH PHILA. WKS., P. O. Box 7348, Philadelphia, Pa.
①*SPOKANE, WASH., 158 So. Monroe St.
*SPRINGFIELD, ILL., 601 E. Adams St., Box 37
*†SPRINGFIELD, MASS., 395 Liberty St.
xSPRINGFIELD, MASS., 653 Page Boulevard
*ST. LOUIS, MO., 411 North Seventh St.
†#ST. LOUIS, MO., 717 South Twelfth St.
*SYRACUSE, N. Y., 420 N. Geddes St.
*TACOMA, WASH., 1023 "A" St.
*TAMPA, FLA., 417 Ellamae Ave., Box 230
*TOLEDO, OHIO, 245 Summit St.
①xTRAFFORD CITY, PA.
*TULSA, OKLA., 303 East Brady St.
*#†UTICA, N. Y., 113 N. Genesee St.
*WASHINGTON, D. C., 1434 New York Ave., N. W.
①*WATERLOO, IOWA, 328 Jefferson St., P. O. Box 719.
*WICHITA, KAN., 233 So. St. Francis Ave.
*†WILKES-BARRE, PA., 267 N. Pennsylvania Ave.
*†WORCESTER, MASS., 32 Southbridge St.
*YORK, PA., 143 So. George St.
*YOUNGSTOWN, OHIO, 25 E. Boardman St.

Where address and P. O. box are both given, send mail to P. O. box, telegrams to address indicated.

WESTINGHOUSE AGENT JOBBERS

Westinghouse Electric Supply Company

Fully equipped sales offices and warehouses are maintained at all addresses

ALBANY, N. Y., 454 No. Pearl St.
ALLENTOWN, PA., 522 Maple St.
ATLANTA, GA., 96 Poplar St., N. W.
AUGUSTA, MAINE, 90 Water St.
BALTIMORE, MD., 40 South Calvert St.
BANGOR, MAINE, 175 Broad St.
BINGHAMTON, N. Y., 87 Chenango St.
BOSTON, MASS., 76 Pearl St.
BURLINGTON, VT., 208 Flynn Ave.
BUTTE, MONTANA, 50 East Broadway
CHARLOTTE, N. C., 210 East Sixth St.
CHICAGO, ILL., 113 North May St.
CLEVELAND, OHIO, 3950 Prospect Ave.
COLUMBIA, S. C., 915 Lady St.
DALLAS, TEXAS, 409 Browder St.
DES MOINES, IOWA, 1400 Walnut St.
DETROIT, MICH., 547 Harper Ave.
DULUTH, MINN., 308 W. Michigan St.
EVANSVILLE, IND., 201 N. W. First St.
FLINT, MICH., 1314 N. Saginaw St.
FORT WORTH, TEXAS, 501 Jones St.
GRAND RAPIDS, MICH., 511 Monroe Ave., N. W.
GREENVILLE, S. C., 226 Pendleton St.
HOUSTON, TEXAS, 1903 Ruiz St.
INDIANAPOLIS, IND., 137 S. Pennsylvania St.
JACKSONVILLE, FLA., 37 South Hogan St.
LOS ANGELES, CALIF., 905 East Second St.
MADISON, WISC., 1022 E. Washington Ave.
MIAMI, FLA., 1036 North Miami Ave.
MEMPHIS, TENN., 366 Madison Ave.
MILWAUKEE, WISC., 546 N. Broadway
MINNEAPOLIS, MINN., 215 South Fourth St.
NEWARK, N. J., 49 Liberty St.
NEW HAVEN, CONN, 240 Cedar St.
zNEW YORK, N. Y., 150 Varick St.
NORFOLK, VA., 320 City Hall Ave.
OAKLAND, CALIF., Tenth & Alice Sts.
OKLAHOMA CITY, OKLA., 10 E. California St.
OMAHA, NEB., 117 North Thirteenth St.
PEORIA, ILL., 104 East State St.
PHILADELPHIA, PA., 1101 Race St.
PHOENIX, ARIZONA, 315 West Jackson St.
PORTLAND, OREGON, 134 N.W. Eighth Ave.
PROVIDENCE, R. I., 66 Ship St.
RALEIGH, N. C., 322 S. Harrington St.
READING, PA., 619 Spruce St.
RICHMOND, VA., 301 South Fifth St.
ROANOKE, VA., 726 First St., S. E.
ROCHESTER, N. Y., 1048 University Ave.
ST. LOUIS, MO., 1011 Spruce St.
ST. PAUL, MINN., 145 East Fifth St.
SACRAMENTO, CALIF., 20th and R Sts.
SALT LAKE CITY, UTAH, 235 West South Temple St.
SAN ANTONIO, TEXAS, 1211 E. Houston St.
SAN FRANCISCO, CALIF., 260 Fifth St.
SEATTLE, WASH., 558 First Ave., South
SIOUX CITY, IOWA, 1005 Dace St.
SPOKANE, WASH., 152 So. Monroe St.
SPRINGFIELD, MASS., 46 Hampden St.
SYRACUSE, N. Y., 961 W. Genesee St.
TAMPA, FLA., 417 Ellamae St.
#TERRE HAUTE, IND., 234 S. 3rd St.
TOLEDO, OHIO, 812 Lafayette St.
TRENTON, N. J., 245 N. Broad St.
TULSA, OKLA., 303 East Brady St.
UTICA, N. Y., 113 N. Genesee St.
WASHINGTON, D. C., 1216 "K" St., N. W.
WATERLOO, IOWA, 328 Jefferson St.
①WICHITA, KANSAS, 233 So. St. Francis Ave.
WILMINGTON, DEL., 216 E. Second St.
WORCESTER, MASS., 24 Southbridge St.
YORK, PA., 143 S. George St.

*Sales Office † Service Shop x Works # Warehouse ° First Class Mail Only § Merchandising Products Only z Headquarters
‡ Apparatus Products Only ① Changed or added since previous issue.

WESTINGHOUSE AGENT JOBBERS—Continued

Other Agent Jobbers

ABILENE, KAN., Union Electric Co.
AKRON, OHIO, The Moock Electric Supply Co.
BIRMINGHAM, ALA., Moore-Handley Hdwe. Co.
BLUEFIELD, W. VA., Superior-Sterling Co.
BUFFALO, N. Y., McCarthy Bros. & Ford
CANTON, OHIO, The Moock Electric Supply Co.
‡CHATTANOOGA, TENN., Mills & Lupton Supply Co.
CHICAGO, ILL., Hyland Electrical Supply Co.
CINCINNATI, OHIO, The Johnson Electric Supply Co.
COLUMBUS, OHIO, Pixley Electric Supply Co.
‡DENVER, COL., The Mine & Smelter Supply Co.
①‡EL PASO, TEX., Mine & Smelter Supply Co.
ERIE, PA., Star Electrical Co.
HUNTINGTON, W. VA., Banks-Miller Supply Co.
KANSAS CITY, MO., Columbian Elect'l Co.
KANSAS CITY, MO., Continental Elec. Co.
LOUISVILLE, KY., Tafel Electric Co.
MONROE, LA., Monroe Hardware Co.
NASHVILLE, TENN., Tafel Electric Co.
NEW ORLEANS, LA., Electrical Supply Co.
NEW YORK, N. Y., Times Appliance Co., Inc.
PITTSBURGH, PA., Iron City Electric Co.
SAN DIEGO, CALIF., The Electric Supplies Distributing Co.
SCRANTON, PA., Penn Elect'l Engineering Co.
YOUNGSTOWN, OHIO, Moock Electric Supply Co.

WESTINGHOUSE ELECTRIC & MFG. CO., LAMP DIVISION

*ALBANY, N. Y., 456 N. Pearl St.
#*ATLANTA, GA., 426 Marietta St.
*BALTIMORE, MD., 118 E. Lombard St.
xBELLEVILLE, N. J., 720 Washington Ave.
zxBLOOMFIELD, N. J., Clearfield Ave.
*BOSTON, MASS., 10 High St.
①#BOSTON, MASS., 235 Old Colony Ave., S. Boston, Mass.
*BUFFALO, N. Y., 295 Main St.
*CHICAGO, ILL., 20 North Wacker Drive
#CHICAGO, ILL., 2211 W. Pershing Road
*CINCINNATI, OHIO, Third & Flm Sts.
*CLEVELAND, OHIO, 1216 W. 58th St.
*COLUMBUS, OHIO, Gay & Third St.
*DALLAS, TEXAS, 209 Browder St.
*DAVENPORT, IOWA, 206 East Second St.
*DENVER, COLO., 910 Fifteenth St.
*DES MOINES, IOWA, 218 West Second St.
#*DETROIT, MICH., 5757 Trumbull Ave.
①*EMERYVILLE, CALIF., 5915 Green St.
*HOUSTON, TEXAS, 1314 Texas Ave.
*HUNTINGTON, W. VA., 1029 Seventh Ave.
*INDIANAPOLIS, IND., 137 So. Penna. Ave.
*JACKSON, MICH., Consumers Power Bldg.
*KANSAS CITY, MO., 101 W. Eleventh St.
#*LOS ANGELES, CALIF., 420 S. San Pedro St.
*LOUISVILLE, KY., 332 West Broadway
*MEMPHIS, TENN., 130 Madison St.
*MILWAUKEE, WISC., 546 North Broadway
*MINNEAPOLIS, MINN., 2303 Kennedy St., N. E.
*NEW ORLEANS, LA., 333 St. Charles St.
yNEW YORK, N. Y., 150 Broadway
*OKLAHOMA CITY, OKLA., 10 E. California St.
*OMAHA, NEB., 409 So. Seventeenth St.
*PHILADELPHIA, PA., 3001 Walnut St.
*PITTSBURGH, PA., 306 4th Ave., Box 1017
#PITTSBURGH, PA., Try St. Terminal Bldg.
*ROCHESTER, N. Y., 1048 University Ave.
*SALT LAKE CITY, UTAH, 10 West First South St.
*SAN FRANCISCO, CALIF., 1 Montgomery St.
#SAN FRANCISCO, CALIF., 60 Federal St.
*SEATTLE, WASH., 603 Stewart St.
#SEATTLE, WASH., 3451 East Marginal Way
*ST. LOUIS, MO., 411 No. Seventh St.
#ST. LOUIS, MO., 1219-21 Gratiot St.
*SYRACUSE, N. Y., 109 So. Warren Street
*TOLEDO, OHIO, 245 Summit St.
xTRENTON, N. J., 400 Pennington Ave.
*WASHINGTON, D. C., 1434 N. Y. Ave., N. W.

WESTINGHOUSE ELECTRIC ELEVATOR COMPANY

BALTIMORE, MD., 39 West Lexington Ave.
①BOSTON, MASS., 164 Stuart St.
BROOKLYN, N. Y., 528 Bergen St.
BUFFALO, N. Y., 826 Ellicott Sq. Bldg.
xCHICAGO, ILL., 1500 North Branch St.
CHICAGO, ILL., 222 No. Bank Drive
CINCINNATI, OHIO, Third & Elm Sts.
CLEVELAND, OHIO, 842 Rockefeller Bldg.
①COLUMBUS, OHIO, 85 E. Gay St.
DALLAS, TEXAS, 209 Browder St.
DENVER, COLO., 1052 Gas & Electric Bldg.
DES MOINES, IOWA, 1408 Walnut St.
DETROIT, MICH., 5757 Trumbull Ave.
①DUBUQUE, IOWA, 435 Curtis St.
HOUSTON, TEXAS, 2315 Commerce St.
INDIANAPOLIS, IND., 551 W. Merrill St.
zxJERSEY CITY, N. J., 150 Pacific Ave.
KANSAS CITY, MO., 101 W. Eleventh St.
LOS ANGELES, CALIF., 420 So. San Pedro St.
NEWARK, N. J., 14 Bridge St.
NEW YORK, N. Y., 9 Rockefeller Plaza
NEW YORK, N. Y., 128 E. 149 St.
PHILADELPHIA, PA., 3001 Walnut St.
PITTSBURGH, PA., 435 Seventh Ave.
PORTLAND, ORE., 415 Terminal Sales Bldg.
ST. LOUIS, MO., 411 North Seventh St.
SAN FRANCISCO, CALIF., 1 Montgomery St.
①STEUBENVILLE, OHIO, 308 Natl. Exch. Bldg.
WASHINGTON, D. C., 1112 21st St., N. W.

WESTINGHOUSE ELECTRIC INTERNATIONAL COMPANY

zNEW YORK CITY, N. Y., 150 Broadway
*LONDON, W. C. 2, ENGLAND, 2 Norfolk St., Strand
*SYDNEY, AUSTRALIA, Box 2634-EE, G.P.O.
*RIO DE JANEIRO, BRAZIL, Caixa Postal 687
*SANTIAGO, CHILE, Casilla 1897
*MILANO, ITALY, Piazza Crispi 3
*WELLINGTON, NEW ZEALAND, 2 Taranaki St.
*LIMA, PERU, Edifico Wiese, Esquina Nunez y Filipinas
*MANILA, P. I., P. O. Box 998
*PANAMA, Republic of Panama, P.O. Box 112
*SAO PAULO, BRAZIL, Caixa Postal 636
*SAN JUAN, Puerto Rico, P. O. Box 1539
*CIA. WESTINGHOUSE INTERNACIONAL S. A. Rivadavia 819, Buenos Aires, Argentine
*CIA. WESTINGHOUSE ELEC. DE CUBA, Manzana de Gomez, 232-236 Apartado 2289, Havana, Cuba
*WESTINGHOUSE ELEC. CO., OF INDIA LTD. Feltham House, Graham Road, Ballard Estate, Bombay, India
*CIA. WESTINGHOUSE ELEC. INTERNACIONAL Edificio la Nacional Apartado 78-Bis. Mexico, D. F. Mexico
*MEXICO, (West Coast) Mr. John H. Knost, 1248 East Fifth St., Tucson, Arizona
*WESTINGHOUSE ELEC. CO. OF SOUTH AFRICA, LTD., P. O. Box 6067, Johannesburg, South Africa

WESTINGHOUSE X-RAY COMPANY, INC.

*ATLANTA, GA., 565 W. Peachtree St., N. E.
*BALTIMORE, MD., 118 East Lombard St.
*BOSTON, MASS., 270 Commonwealth Ave.
*CHICAGO, ILL., 512 S. Peoria St.
*CLEVELAND, OHIO, 7016 Euclid Ave.
*DALLAS, TEXAS, 207 Browder St.
#*DETROIT, MICH., 5757 Trumbull Ave.
zxLONG ISLAND CITY, N. Y., 21-16 43rd Ave.
*LOS ANGELES, CALIF., 420 S. San Pedro St.
*MILWAUKEE, WISC., 534 North Broadway
*NEW ORLEANS, LA., 608 Commercial Place
*NEW YORK, N. Y., 173 E. Eighty-Seventh St.
*OMAHA, NEB., 117 N. Thirteenth St.
*PHILADELPHIA, PA., 3001 Walnut St.
*PITTSBURGH, PA., 3702 Fifth Ave.
*ROCHESTER, N. Y., 41 Chestnut St.
*SAN FRANCISCO., CALIF., 870 Market St.

BRYANT ELECTRIC COMPANY

*BOSTON, MASS., 10 High St.
zxBRIDGEPORT, CONN., Main Plant, 1421 State St.
xBRIDGEPORT, CONN., Plastics Division Plant, 1105 Railroad Ave.
*#CHICAGO, ILL., 844 West Adams St.
①*#LOS ANGELES, CALIF., 420 S. San Pedro St.
①*NEW YORK, N. Y., 101 Park Ave.
*#SAN FRANCISCO, CALIF., 325 Ninth St.

WESTINGHOUSE RADIO STATIONS

STATION KDKA, 310 Grant St., Pittsburgh, Pa.
STATION WBZ, 271 Tremont St., Boston, Mass.
STATION KYW, 1619 Walnut St., Philadelphia, Pa.
STATION WBZA, Hotel Kimball, Springfield, Mass.
STATION WOWO, 925 So. Harrison St., Fort Wayne, Ind.
STATION WGL, 925 So. Harrison St., Fort Wayne, Ind.

CANADIAN WESTINGHOUSE COMPANY, LIMITED

*†#CALGARY, 320 Eighth Avenue West, Calgary, Alberta, Can.
#*EDMONTON, 10127, 104th St., Armstrong Block, Edmonton, Alberta, Can.
#*FORT WILLIAM, 112 McVicar St., Fort William, Ontario, Can.
#*HALIFAX, 158 Granville St., Halifax, Nova Scotia, Can.
xz*HAMILTON, Hamilton, Ontario, Can.
*LONDON, 504 Huron & Erie Bldg., London, Ontario, Canada
*MONTREAL, 1135 Beaver Hall Hill, Montreal, Quebec, Can.
§MONTREAL, 400 McGill St., Montreal, Quebec, Can.
#†MONTREAL, 1844 William St., Montreal, Quebec, Can.
*NELSON, B. C., Can., P. O. Box 1124
#*OTTAWA, Ahearn & Soper Limited, P. O. Box 779, Ottawa, Ontario, Can.
*†#REGINA, 2408 Eleventh Ave., Regina, Saskatchewan, Can.
*SASKATOON, 238 First Ave. N., Saskatchewan, Canada
†#*SWASTIKA, Childs Ave., Swastika, Ontario, Canada
*†#TORONTO, 355 King St. West, Toronto, Ontario, Can.
*VANCOUVER, 1418 Marine Bldg., Vancouver, B. C., Can.
†#VANCOUVER, 1090 Homer St., Vancouver, B. C., Can.
#*†WINNIPEG, 158 Portage Ave. East, Winnipeg, Manitoba, Can.

①Changed or added since previous issue.
* Sales Office † Service Shop x Works # Warehouse z Headquarters y Executive Office §Merchandising Products Only
‡Apparatus Products Only



WESTINGHOUSE

ELECTRIC AND MANUFACTURING COMPANY

EAST PITTSBURGH



PENNSYLVANIA

ESTABLISHED 1873

BOSTON LIGHTNING ROD COMPANY

INCORPORATED 1911

Manufacturers and Installers

755 Boylston Street, BOSTON, MASS.

TELEPHONE, Kenmore 4034

NEW YORK OFFICE: Grand Central Terminal Building—Telephone, MUrray Hill 6-4020
SPRINGFIELD, MASS. OFFICE: 12 Court House Place—Telephone, Springfield 7-0374

APPROVED SOLID COPPER AND COPPER CABLE LIGHTNING CONDUCTORS
For All Classes of Structures

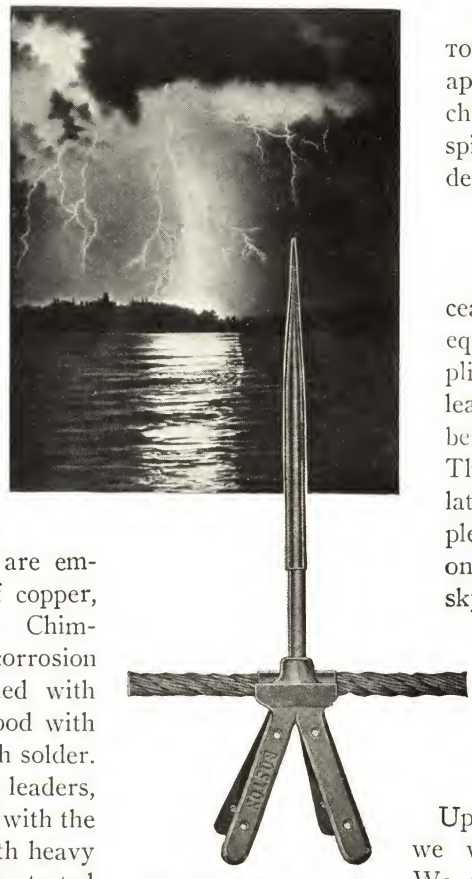
Description

The principle upon which the lightning conductor is based is universally accepted by engineers as being strictly scientific. Boston Conductors are made of pure copper, in two types: (1) solid, ⅜-in. diameter and (2) of 7-strand, ⅜-in. diameter cable. Both types are of ample weight, surface and conductivity to afford complete protection under all conditions.

Both types are listed by the Underwriters' Laboratories, Inc. and bear their Master Label of approval.

Connections and Installations

On the solid rod, threaded joints are employed throughout. All points are of copper, plated with either nickel or platinum. Chimney points are lead coated to prevent corrosion from gases. Conductors are attached with copper clips; they are fastened to wood with screws and to existing metal work with solder. Metal finials, ridges, skylights, gutters, leaders, etc., are inter-connected and grounded with the system. All ground leads terminate with heavy copper plates, sunk to an electrically tested level and embedded in charcoal; approved grounding rods or water service pipe.



The Improved Boston Air Terminal

This improved air terminal with threaded joint permits a permanent low resistance connection with the cable

Every installation made by the Boston Lightning Rod Company is applied by thoroughly trained mechanics. Each finished job is as inconspicuous as is consistent with complete dependability and is fully guaranteed.

Concealed Installations

We manufacture and install a concealed equipment, which type of equipment is erected prior to the application of the roof covering, with leads from the eaves to the ground being carried between the studs. The only part of a concealed installation which is visible, upon completion, are the low points erected on chimneys and gables. In modern skyscrapers we utilize the steel frame for grounding. This method of installation makes absolute protection available at a remarkably low cost.

Service

Upon receipt of complete information we will submit plans and estimates. We are equipped to make installations in any part of the United States.

REFERENCES

Architects and Contractors

John Russell Pope, New York, N. Y.
James Gamble Rogers, New York, N. Y.
McKim, Meade & White, New York, N. Y.
Dwight James Baum, New York, N. Y.
George P. Butler, Jr., New York, N. Y.
Delano & Aldrich, New York, N. Y.
George A. Fuller Co., New York, N. Y.
Marc Eidlitz & Son Co., New York, N. Y.
Cram & Ferguson, Boston, Mass.
Maginnis & Walsh, Boston, Mass.
Mott B. Schmidt, New York, N. Y.
Hegeman Harris Co., New York, N. Y.
Charles A. Carpenter, Rochester, N. Y.
Jones & Conquest, Richmond, Va.
Derby, Barnes & Champney, Boston, Mass.
Coolidge, Shepley, Bullfinch & Abbott, Boston
Charles Z. Klauder, Philadelphia, Pa.
Zantzinger, Borie & Medary, Philadelphia, Pa.
Allen, Collens & Willis, Boston, Mass.
William B. Colleary, Boston, Mass.
Donald Desgranges, Boston, Mass.
J. Henry Miller, Baltimore, Md.
Perry, Shaw & Hepburn, Boston, Mass.
Smith & Walker, Boston, Mass.
Richard J. Neutra, San Francisco, Cal.

Private Estates

G. W. Perkins, Riverdale, N. Y.
Ernest B. Dane, Brookline, Mass.
W. S. Barstow, Great Neck, N. Y.
Ogden Reid, Purchase, N. Y.
W. A. Fairburn, Morristown, N. J.
Miss Anne Morgan, Mt. Kisco, N. Y.
John J. Woolsey, Petersham, Mass.
Edmund Hayes, Buffalo, N. Y.
R. F. Haffenreffer, Fall River, Mass.
James E. Whitin, North Uxbridge, Mass.
Dr. Eliot Hubbard, Cohasset, Mass.
Robert P. Bass, Peterboro, N. H.
Eugene Endicott, Norwood, Mass.
F. H. Metcalf, Holyoke, Mass.
Paul B. Belin, Scranton, Pa.
George E. Hardy, Fishers Island, N. Y.
James Ingliss, Ann Arbor, Mich.
Edmund C. Burke, Cleveland, Ohio
J. J. Emery, Montgomery, Ohio
Cartter Lupton, Chattanooga, Tenn.
R. T. Crane, Jr., Chicago, Ill.
Russell Grinnell, Providence, R. I.
R. Livingston Beekman, Newport, R. I.
Irving W. Bonbright, Fishers Island, N. Y.

Churches and Institutions

Riverside Church, New York, N. Y.
First Congregational Church, New York, N. Y.
St. Bartholomew's Church, New York, N. Y.
All Souls Church, Washington, D. C.
Emmanuel Baptist Church, Washington, D. C.
Old South Church, Boston, Mass.
Trinity Church, Boston, Mass.
Blessed Sacrament Church, Roxbury, Mass.
Sacred Heart Church, Jersey City, N. J.
Hennepin Ave. M. E. Church, Minneapolis
First Congregational Church, Columbus, Ohio
Cathedral of Learning, Pittsburgh, Pa.
Heinz Memorial Chapel, Pittsburgh, Pa.
Harvard University, Cambridge, Mass.
Boston College, Newton, Mass.
Yale University, New Haven, Conn.
Fordham College, New York, N. Y.
University of Vermont, Burlington, Vt.
Princeton University, Princeton, N. J.
Trinity College, Hartford, Conn.
Penna. State College, State College, Pa.
Perry Memorial, Put-in-Bay, Ohio
Independence Hall, Philadelphia, Pa.
Colgate-Rochester Divinity School, Rochester, N. Y.

ESTABLISHED 1870

THE BURKETT LIGHTNING ROD CO.

INCORPORATED 1911

Designers—Engineers—Manufacturers—Installers
Lightning Protective Equipment for All Types of Structures

TELEPHONE
Main 1923

FREMONT, OHIO

"Burkett System" Lightning Protection

A *modern, scientific, all-copper, invisible (inconspicuous) system* for protecting structures of all kinds against the hazards of lightning.

Where Installed

Burkett System provides adequate protection against lightning for estate, public buildings, hospitals, schools, mausoleums, clubhouses, structural steel office buildings, trees, etc., as well as for brick, tile or concrete boiler room chimneys and industrial structures of all kinds. We specialize in the protection of modern residences and churches.

Endorsements

BURKETT SYSTEM Lightning Protective Equipment conforms to code requirements of Bureau of Standards, Washington, D. C., and National Fire Protection Association, Boston, Mass. Materials conform to factory inspection service and manner of installation to field inspection service of Underwriters' Laboratories, Chicago, Ill.

Materials and Application

High grade materials are used throughout and *installed by our own workmen,* who are specially trained and thoroughly competent to make proper application of the BURKETT equipment to any type of structure in a neat, permanent manner, *anywhere in the United States.*

Service

We suggest the sending of blue prints of all elevations, and roof detail showing locations of soil pipes, metal ventilators, chimneys, and downspouts, when asking for estimated cost of protection. This will save time and assure you of accurate figure. If possible when submitting blue prints, forward one which shows plot plan or grade elevation, and indicate points of entry for water service, gas service and electric service.

Should you desire personal interview with one of our representatives feel free to make such request. *Write or telephone.*



The George Washington Masonic National Memorial, Alexandria, Va.

CORBETT, HARRISON & MACMURRAY, Architects
OSGOOD & OSGOOD, Consulting Architects

This great memorial to George Washington, 333 ft. high, built entirely of masonry with a granite exterior, at an approximate cost of $4,000,000, is adequately protected with special BURKETT equipment, in which one hundred forty points were used, inconspicuously located on Apex, all prominent projections and Stylebate

To Architects, Specification Writers and Engineers

You can write specifications for *boiler room chimney and other lightning protection* from copy below, or we will furnish complete written specification upon request. Lead covered equipment furnished for all types of smokestacks and chimneys. Platinum tip points furnished if desired.

Suggested Lead Covered Chimney Specification

(1) The general contractor shall supply on the chimney a system of Lightning Protective Equipment manufactured and installed by THE BURKETT LIGHTNING ROD CO., Fremont, Ohio.

(2) Installation of materials is to be in accord with Code of National Fire Protection Association and shall be placed by manufacturer's installers who operate direct from the factory.

(3) Mason contractor will be held responsible for proper placing of cable anchors and other equipment required to be built into masonry at time of chimney construction, and shall receive instructions from the manufacturer of lightning protective equipment for placing such anchors and equipment.

(4) Complete layout of the lightning protective system must be furnished by manufacturer of the equipment, before starting installation of materials.

(5) Master Label Plate of Approval of Underwriters' Laboratories, Inc., shall be furnished the owner upon completion of installation of the lightning protective equipment.

Suggested General Specification

(1) The general contractor shall, on the entire building, supply a system of Lightning Protective Equipment manufactured and installed by THE BURKETT LIGHTNING ROD CO., Fremont, Ohio.

(2) (Same as 2 above).

(3) The entire installation of materials to be made in an inconspicuous manner so as not to mar the architectural beauty of the structure.

(4) (Same as 4 above).

(5) (Same as 5 above).

A FEW OF THE THOUSANDS OF STRUCTURES PROTECTED WITH BURKETT EQUIPMENT

Monumental, Public and Industrial Structures

Terminal Tower, Cleveland, Ohio
Indiana World War Memorial, Indianapolis, Ind.
U. S. Veteran's Hospital, Mt. Alto, Washington, D. C.
Federal Reformatory Camp, Petersburg, Va.
U. S. Powder Magazines, Proving Grounds, Camp Perry, Ohio
Washington Monument, Baltimore, Md.
Governor's Mansion, Baltimore, Md.
Bendix Beacon Tower, South Bend, Ind.
Calvary Cemetery Mausoleum, Toledo, Ohio
Licking County Tuberculosis Hospital, Newark, Ohio
Ohio Sesqui-Centennial Building, State Fair Grounds, Columbus, Ohio
Municipal Filtration and Water Softening Plant, Fremont, Ohio

Churches and Schools

Cathedral of Our Lady Queen of the Most Holy Rosary, Toledo, Ohio
St. Cecelia Catholic Church, Detroit, Mich.
St. Stephen's Catholic Church, Cleveland, Ohio
Plymouth Church, Shaker Heights, Cleveland, Ohio
Swazey Chapel, Dennison University, Granville, Ohio
Holy Rosary Church, Pittsburgh, Pa.
Epiphany Church, Washington, D. C.
The Cathedral, Baltimore, Md.
St. Peter's Protestant Episcopal Church, Albany, N. Y.
John Carroll University Buildings, Cleveland, Ohio
St. Mary's College and Academy Buildings, Monroe, Mich.
University High and Elementary School, Ann Arbor, Mich.
University of the City of Toledo Tower, Toledo, Ohio
DeVilbiss High School, Toledo, Ohio
Georgetown University, Washington, D. C.
The Notre Dame, Baltimore, Md.
St. Mary's Industrial School, Baltimore, Md.
Beaumont Memorial Tower, Michigan Agricultural College, Lansing, Mich.
Villa St. Felix, Plymouth, Mich.
Lockmoor School, Detroit, Mich.
Fred E. Maples School, Dearborn, Mich.
J. R. Lowell Junior High School, Flint, Mich.
Wm. McKinley School and Power House Building, Flint, Mich.
Washington Junior High School, Pontiac, Mich.

Residence, Estate and Ranch Buildings—Michigan and Ohio

O. P. and M. J. Van Sweringen, Shaker Heights, Cleveland
L. C. Hanna, Jr., Kirtland Hills
R. R. Deupree, Cincinnati
L. B. Harrison, Cincinnati
Randall McFarlan, New Richmond
Pleasant E. Bennett, Dayton
Karl B. Hoke, Toledo
H. D. Bennett, Toledo
G. R. Bennett, Toledo
Russell Firestone, Akron
L. D. Buhl Estate, Detroit
A. H. Buhl Estate, Detroit
Jas. E. Vernor, Jr., (Lodge) Detroit
Dalton J. V. Snyder, Detroit
P. W. Seiler, Farmington
Frederick B. Darden, Rochester
Wm. Everhard, Wadsworth, Ohio
W. A Caine, Wadsworth, Ohio
Geo. C. Kalbfleisch, Tiffin, Ohio
T. R. Scheffer, Dover, Ohio
D. LaMar Christy, Fremont, Ohio

Miscellaneous

Fayette B. Dow, Washington, D. C.
Percy L. Crosby, McLean, Va.
Dodge-Sloane Estate, Upperville, Va.
Jeff. Patterson, Peterson's Point, Md.
Fletcher Harper Estate, The Plains, Va.
Rev. Paul D. Bowden, Warrenton, Va.
Dr. H. L. Foss, Danville, Pa.
Dr. O. F. Behrend, Erie, Pa.
R. W. Parkins, McKeesport, Pa.
Crawford Long, Jackson, Tenn.
C. A. Cabell, Charleston, W. Va.
Geo. W. Hewlett, Cheyenne, Wyo.
Hugh McK. Landon, Indianapolis, Ind.

Chimneys

U. S. Proving Grounds (Camp Perry), La Carne, Ohio
Cleveland Electric Illuminating Co. (9 chimneys), Cleveland, Ohio
State of Ohio (Cleveland and Massillon Hospitals), Columbus, Ohio
American Fork & Hoe Co. (Conneaut and Geneva Plants), Cleveland, Ohio
Ohio Power Company (3 chimneys), Fremont, Ohio
City of Buffalo (5 chimneys), Buffalo, N. Y.
City of Detroit (9 chimneys), Detroit, Mich.
City of Flint (4 chimneys), Flint, Mich.
City of Dearborn (4 chimneys), Dearborn, Mich.
City of Toledo (5 chimneys), Toledo, Ohio
City of Fremont (7 chimneys), Fremont, Ohio
Christian High School, Grand Rapids, Mich.
Angell School, Muskegon, Mich.
Junior High School, Escanaba, Mich.
Vatter Floral Co., Marinette, Wis.
St. Josephs Orphanage, Richmond, Va.

ESTABLISHED 1862

HAROLD K. JONES COMPANY

Registered Manufacturers and Installers of Approved Lightning Conductor Systems

TELEPHONE
JOhn 4-1668

159 Maiden Lane, NEW YORK, N. Y.

MODERN LIGHTNING PROTECTIVE SYSTEMS

Lightning Protection

Modern lightning protective systems are recognized as a necessary safeguard for exposed buildings of the country estate, tall and isolated structures, valuable trees, etc., and are endorsed by insurance authorities when properly installed.

Installation Methods

Copper cable or tape is the best form of conductor, with solid copper air terminals, cast bronze fittings and fasteners. Conductors are applied to tile and slate roofs by specially fitted copper clamp fasteners, avoiding the use of nails and screws. Exterior metal work is bonded and made a part of the conductor system. Grounds are made in a permanent manner by the copper plate-charcoal method, supplemented by driven copper ground rods at the proper distance from building and sufficient depth to insure good electrical contact with large capacity.

Conductors are carefully harmonized with roof surfaces, making concealment practically complete without impairing efficiency, this being a special feature of our work.



General Electric Building, New York, N. Y., 1000 Ft. High
Protected by JONES equipment

New Buildings

Concealed systems may be installed during construction.

Approved Material

All material and installation methods subject to inspection service of the Underwriters' Laboratories, Inc.

Inspections and Estimates

We will gladly co-operate with architects and builders in offering suggestions for lightning protection. Estimates furnished from plans or by inspection of property. Inspections and reports on old installations.

Selected References

Architects

John Russell Pope	Warren & Wetmore
Geo. B. Post & Sons	Clifford C. Wendehack
James Gamble Rogers	York & Sawyer
Starrett & Van Vleck	Cherry & Matz
Trowbridge & Livingston	W. Stanwood Phillips
	Cross & Cross
D. Everett Waid	Mayers, Murray & Philip
Walker & Gillette	Edward Necarsulmer
F. B. & A. Ware	Polhemus & Coffin

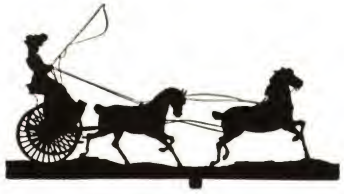
Typical Installations of Jones Equipment

Wm. H. Conyngham, Hillside Farm, Wilkes-Barre, Pa.
Arthur Brisbane, Allaire, N. J.
Guy Cary, Brookville, L. I,, N. Y.
August Belmont, Mendham, N. J.
Verner Z. Reed, Jr., Newport, R. I., Pinehurst, N. C.
Marshall P. Slade, Mt. Kisco, N. Y.
H. McK. Twombly Estate, Madison, N. J.
Col. Henry L. Stimson, Huntington, L. I., N. Y.
Sherman M. Fairchild, Lloyds Neck, L. I., N. Y.
Junius S. Morgan, Locust Valley, L. I., N. Y.
George U. Harris, Tuxedo Park, N. Y.
Robert D. Kohn, Architect, Ossining, N. Y.
Marymount College, Tarrytown, N. Y.
Greenwood Cemetery Towers, Brooklyn, N. Y.
Howe Caverns Lodge, Howe Caverns, N. Y.
Macdonough Memorial Monument, Plattsburg, N. Y.
Pierre Du Pont High School, Wilmington, Del.
Amity Hall Inn, Duncannon, Pa.
Dr. Philip G. Cole, Tarrytown, N. Y.
Wm. Ziegler, Noroton, Conn.
Bishop Molloy, 241 Clinton Ave., Brooklyn, N. Y.
American Museum Natural History, New York, N. Y.
Majestic Apts., 115 Central Park West, New York, N. Y.
St. Agnes R.C. Church, East 43rd Street, New York, N. Y.
Apartments, 55 Central Park West, New York, N. Y.
Mrs. E. S. Ayers, Mason's Island, Mystic, Conn.
Gail Borden, New Rochelle, N. Y., Ridgefield, Conn.

WEATHER VANES AND ART METAL WORK

Manufacturers of a complete line of artistic weather vanes in various designs, which furnish the finishing touches for the buildings of country estates. Bronze, copper, brass, with weatherproof bronze ball bearings.

Special designs executed from sketches or suggestions. Artistic cut-outs, silhouettes and exclusive andirons.



No. 1004—Tandem



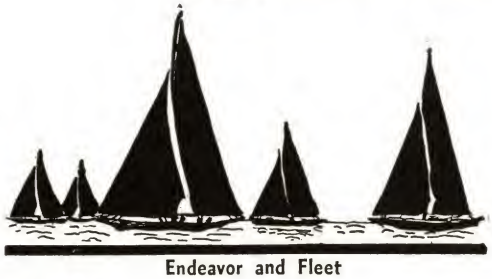
No. 534—Duck Andirons



No. 1026—Plowing



Wild Geese



Endeavor and Fleet

These designs copyright 1929—By Harold K. Jones

WEST DODD LIGHTNING CONDUCTOR CORPORATION

GOSHEN, INDIANA

BRANCH OFFICES
ALBANY, N. Y., Home Savings Bank Building—Telephone 3-5851 NEW YORK, N. Y., 70 East 45th Street—Telephone—Murray Hill 2-8897
DISTRIBUTORS AND ENGINEERS IN ALL PRINCIPAL CITIES

The Manufacturer

WEST DODD LIGHTNING CONDUCTOR CORPORATION represents a consolidation of twelve of the leading manufacturers in the business, including pioneers in the field, viz.:

Dodd and Struthers
W. C. Shinn Manufacturing Co.
St. Louis Lightning Rod Co.
Reyburn-Hunter-Foy Co.
Cole Brothers Lightning Rod Co.
Hawkeye Lightning Rod Co.
Barnett Lightning Rod Co.
Des Moines Lightning Rod Co.
Electra Manufacturing Co.
Cripe Lightning Rod Co.
Goshen Lightning Rod Co.
Miller Lightning Rod Co.

Manufacturing and sales headquarters are at Goshen, Ind. It is the largest and most complete plant in the United States specializing entirely in the manufacture and fabrication of lightning rod equipment. Engineers in charge are experts with years of experience in lightning protection.

Uses

Residences, trees, country estate buildings, farm property, schools, churches, hospitals, power plant stacks and public buildings.

Insurance

West Dodd Systems are approved in every respect by the Underwriters' Laboratories, Inc. Master Labels of such approval are furnished assuring such *insurance premium reductions* as are allowed by insurance companies for *approved lightning protection.*



The First-Central Tower, Akron, Ohio

Typical of modern office buildings having a Certified West Dodd System of Lightning Protection installed around parapet walls and connected with the structural steelwork as a safeguard.

Systems

Concealed—Conductor completely concealed within walls of building, air terminals only showing. Installation must be started before lathing and plastering.

Semi-concealed—Over seventy-five per cent of all installations are made using this method. Air terminals and supports are of such size as not to be conspicuous. Connecting conductor is run at base of ridge shingle, ridge roll or tile. Down conductors can be rendered inconspicuous by running beneath roof overhang, back of verge board and either through or behind gutter leads.

For certain conditions and types of architecture, air terminals and conductor may be colored to match roof or any part of structure. Such coloring is obtained by the use of lead coating, tin plating, chromium plating or oxidizing.

Equipment

Air Terminals—Solid copper or bronze, minimum height 10 in. Diameter varies according to design.

Conductor—Pure soft drawn standard copper cable ½ in. in diameter or braided flat 1 in. wide by $\frac{3}{32}$ in. thick, manufactured in continuous lengths to insure uninterrupted electrical flow.

Ground Terminals—Copperweld electrodes or copper plates according to grounding conditions.

Power Plant Chimneys

Special equipment for brick, concrete or tile chimneys conforms to requirements of Factory Insurance Companies and Underwriters' Laboratories, Inc. Details and illustrations upon request.

Service to Architects

As a service to architects and contractors, our main or branch offices will furnish, without obligation or cost, specifications for any building. Plans should be submitted with request. We will also send upon request our fully illustrated catalogue.

SPECIFICATIONS FOR LIGHTNING PROTECTION FOR NEW BUILDINGS

Note: The following should be included under a separate heading in the General Contract Specification for the building where lightning protection is a sub-contract of the General Contract. It may also be used as a basis for a separate contract between the owner and the West Dodd Lightning Conductor Corporation.

Work Included

The work included under this contract shall be the furnishing of all labor and materials for the complete protection from lightning damage of the following:

Note: Here list and locate the various buildings or other structures or items to be protected.

Materials and Devices

All materials and devices shall be as manufactured by the West Dodd Lightning Conductor Corporation, Goshen, Indiana and all shall bear the DS identification mark and Underwriters' Laboratories Labels.

Special Items

Note: Here list any special items in the way of materials or application required.

System

The system of installation shall be that known as The Certified Dodd System. There shall be placed on the property protected an Underwriters' Laboratories brass Master Label and, in addition, there shall be filed with the *(architect) (owner)* a West Dodd Corporation Certificate of Compliance with all requirements and approval of the National Board of Fire Underwriters.

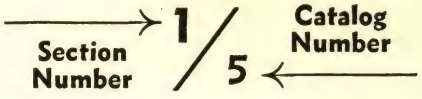
Plans and Details

This contractor shall provide, in triplicate, for the architect's approval plans and details of the installation. Examination of the site and the working drawings and details of the building or structure must be made, and soil and other considerations affecting the design shall be fully taken into consideration.

Installation

Installation shall be made by experienced workmen in strict accordance with West Dodd Corporation's standard specifications and the approved shop drawings.

LIGHTING
- SECTION - 24



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ESTABLISHED 1840

SMYSER-ROYER COMPANY

MAIN OFFICE AND WORKS
YORK, PA.

PHILADELPHIA, PA., Sales Office, Architects Building
For Verandas and Railings, see File Index

Specialists in Cast Iron, Bronze and Aluminum Exterior Lighting Fixtures and Spiral Stairs



No. 412
4′ 6″ high over all
Extreme projection, 2′ 0″
Upper wall plate, 6″ square
Lower wall plate, 12″ square
Also made 2′ 11½″, 2′ 0″ and 5′ 3″ over all



No. 447
6′ 2¼″ high over all



No. 189
7′ 1″ high up to 10′ 0″ high to bottom of globe
Base, octagonal, 1′ 6½″ diameter

Write for Catalog "K" illustrating nearly 400 different designs of lamp standards, lanterns and brackets. Among its designs will be found those for every conceivable use.



Mellor, Meigs & Howe, Architects
(Design No. 72)



No. 252
8′ 0″ high to bottom of globe
Base, 11″, round or square



No. 198
3′ 7″ high to bottom of globe
Wall plate, 11″ diameter

No. 198-A
2′ 8″ high to bottom of globe
Wall plate, 8″ diameter with projecting lugs for bolts with 9″ over all diameter



No. 320
5′ 9″ high over all
Body, hexagonal, 1′ 2¼″ diameter
Projection from wall to center line, 12¼″
Wall plate, 9¼″x15¾″



No. 277
4′ 0½″ high over all
Extreme projection, 2′ 1″
Body octagonal, 10″ diameter
Wall plate, 2′ 0¼″x7½″



No. 285
1′ 4¾″ high over all
Projection to center of lantern, 1′ 0″



No. 284
1′ 9¾″ high over all
Projection to center of lantern, 1′ 0″



No. 346
Extreme projection, 3′ 0″



No. 375
Scale, 1″ = 1′ 0″
3′ 7⅜″ high over all
Lantern, octagonal
Base, 2′ 10¾″ on diagonal



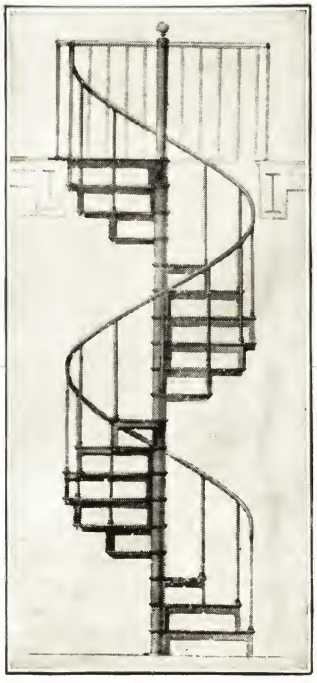
No. 322
7′ 9″ high to bottom of upper globe
Base, 2′ 8″ square



No. 323
11′ 7½″ high over all
Lantern, round, 10½″ diameter
Base, round, 10″ diameter



No. 419
12′ 0″ high over all
Base, 1′ 5″ diameter



Write for our booklet on spiral stairs giving complete information.



No. 120
4′ 0″ up to 10′ 0″ to bottom of globe
Base, 12″ or 16″ square



No. 303
9′ 7″ high up to 12′ 8″ high over all
Lantern, octagonal, 10″ diameter
Base, octagonal, 1′ 6⅜″ diameter



No. 308
6′ 6¼″ high to bottom of globe
Base, 2′ 4″x2′ 4″

MEMORANDA

BERGER MANUFACTURING DIVISION

REPUBLIC STEEL CORPORATION

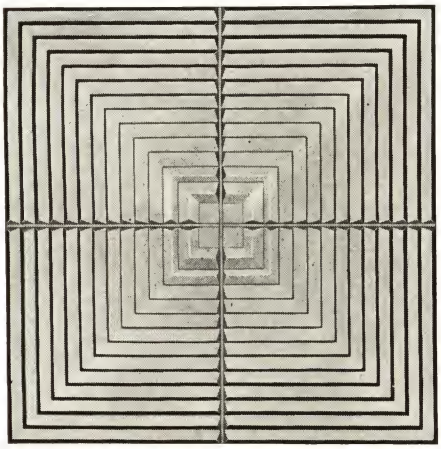
CANTON, OHIO

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PARABOLUME CEILING UNIT



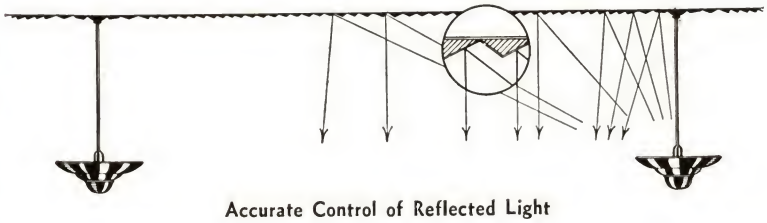
Parabolume Unit Maintains Directional Control by Regular Reflection and Has a Very Low Brightness



Parabolume Available in 6 x 6 Ft., 8 x 8 Ft., 10 x 10 Ft., and 12 x 12 Ft. Units, and Other Sizes

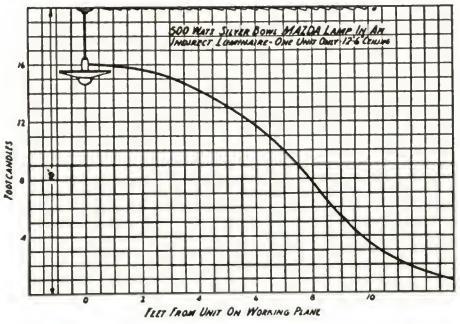
Parabolic Distribution of Light Gained with Parabolume Units Installed on Flat Surface
Higher Levels of Illumination Obtained Without Glare

With the ideal parabolic method of effecting quality illumination already known, Berloy Engineers with the aid and cooperation of the Nela Park Engineering Department of The General Electric Company, successfully gained the desired results with specially designed steel ceiling units applied to flat ceiling surfaces. The new Berloy Parabolume ceiling units accomplish directional control of light from the ceiling without glare—reduce fatigue and eyestrain. In large areas the apparent ceiling brightness is reduced by as much as 50%, while in small areas the control afforded by the Parabolume unit will result in an increase in illumination as high as 40%. The Parabolume design is a parabola transferred to a flat surface.



Accurate Control of Reflected Light

The chart shows the distribution of light is effective up to units 16 ft. square and does not take into consideration additional light from adjoining luminaires.



More Light With No Glare

Recent tests made under the supervision of the Nela Park Engineering Department show that Parabolume ceiling units, painted with aluminum paint having a 70% reflection factor, are at least as efficient and in some cases more efficient than a flat white ceiling having a reflection factor of 80%. Additional advantages include no glare and directional control of the reflected illumination — higher utilization of light in all areas.



Parabolume Ceiling Units in Retail Store

CORNING GLASS WORKS

ILLUMINATING AND OPTICAL DIVISION

Glassware for Commercial, School and Institutional Lighting

MAIN FACTORY AND OFFICE

CORNING, NEW YORK

NEW YORK OFFICE, 718 Fifth Avenue

CHICAGO OFFICE, 222 West North Bank Drive

DISTRIBUTORS

ALABAMA
Mobile, Turner Supply Co.

ARKANSAS
Little Rock, Arkansas Electric Co.

CALIFORNIA
Los Angeles, J. M. Feldman Co. Inc.
Lighting Equipment Supply Co.
Los Angeles Lighting Fixture Co.
Long Beach, L. B. Marsh
Pasadena, Cook-Nichols
San Francisco, Gray Electric Supply Co.
San Francisco Lighting Fixture Co.
San Diego, Coast Electric Co.

COLORADO
Denver, Albert Sechrist Mfg. Co.

CONNECTICUT
New Britain, Spring & Buckley Co.

DISTRICT OF COLUMBIA
Washington, Doubleday Hill Electric Co.
Goodman Light Supply Co.

FLORIDA
Jacksonville, Ace Electric Co.
Miami, McDonald Electric Co.

GEORGIA
Atlanta, Electric Wholesalers, Inc.
Macon, Lowe Electric Co.

IDAHO
Boise, Idaho Electric Supply Co.

ILLINOIS
Chicago, A A Electric Co.
Efengee Electric Supply Co.
Englewood Electric Supply Co.
Kubec Electric Company
Metropolitan Electric Supply Co.
Revere Electric Co.
Steiner Electric Co.
Decatur, Mid State Electric Supply Co.
Elgin, Fox Electric Supply Co.
Peoria, Mid State Electric Supply Co.
Universal Electric Co.
Rockford, Rock River Electric Co.
Springfield, Springfield Electric Supply Co.

INDIANA
Indianapolis, Peerless Electric Supply Co.
Muncie, Industrial Electric Supply Co.

IOWA
Burlington, Crescent Electric Supply Co.
Cedar Rapids, The Van Meter Co.
Davenport, Electric Supply Co.
Des Moines, Electric Supply Co.
Dubuque, Crescent Electric Supply Co.
Mason City, Crescent Electric Supply Co.
Waterloo, Crescent Electric Supply Co.

KANSAS
Topeka, Overton Electric Co., Inc.

KENTUCKY
Louisville, The Brecher Co.

LOUISIANA
Alexandria, Brown Roberts Hardware & Supply Co.
Shreveport, Cahn Electric Co.

MARYLAND
Baltimore, Peoples Electrical Supply Co.
Hagerstown, Tristate Electrical Supply Co.

MASSACHUSETTS
Boston, Geo. H. Wahn Co.
Brockton, Columbia Electric Supply Co.
Lowell, Frank P. McCartin Co.
Lawrence, Dyer-Clark Co.
Pittsfield, Electric Supply & Repair Co., Inc.
Quincy, Granite City Electric Supply Co.
Springfield, Hampden Electric Supply Co.

MAINE
Bangor, R. B. Dunning Co.
Lewiston, Haskell Implement & Seed Co.
Portland, York and Boothby Co.

MICHIGAN
Battle Creek, Central Electric Supply Co.
Detroit, Cadillac Electric Supply Co.
Crescent Electric Co.
Fife Electric Supply Company
Madison Electric Co.
Grand Rapids, Electric Supply Co.
Jackson, Electric Wholesale Supply Co.
Lansing, Michigan Brass & Electric Co.
Muskegan, Industrial Electric Supply Co.
Pontiac, Leslie Electric Co.
Saginaw, Morley Bros.

MINNESOTA
Minneapolis, Northland Electric Supply Co.

MISSOURI
Joplin, Russell Belden Electric Co.
Kansas City, Missouri Valley Electric Co.
Springfield, Harry Cooper Supply Co.
St. Joseph, Interstate Electric Supply Co.
St. Louis, Brown Supply Co.
United Electric Supply Co.

NEBRASKA
Lincoln, White Electric Co.
Omaha, Electric Fixture & Supply Co.

NEW YORK
Albany, Electric Supply & Equipment Co.
Binghamton, Blandings, Inc.
Buffalo, L. A. Woolley Company
Plattsburgh, Plattsburgh Electric Supply Co.
Rochester, Kovalsky Carr Electric Co.
Syracuse, Baldwin-Hall Co.

NORTH CAROLINA
Asheville, Electric Supply Co.
Greensboro, Brower Electric Supply Co.
Raleigh, Scott Parrish Electric Supply Co.

NORTH DAKOTA
Fargo, Dakota Electric Supply Co.

SOUTH DAKOTA
Sioux Falls, Tri State Electric Co.

OHIO
Akron, Sacks Electric Supply Co.
Canton, Moock Electric Supply Co.
Cincinnati, F. D. Lawrence Electric Co.
Cleveland, Allen Electric Co.
Columbus, F. K. Enzor Co.
Portsmouth, Standard Supply Co.
Toledo, Commercial Electric Co.
Zanesville, The Roekel Co.

OKLAHOMA
Oklahoma City, Hunziker Bros.
Tulsa, Electric Supply Co.

OREGON
Eugene, C. P. Tillman
Portland, Baker-Barkon Corp.

PENNSYLVANIA
Allentown, Allen Electric Co.
Erie, Harley D. Carpenter
Harrisburg, Dauphin Electric Supply Co.
Johnstown, Reese Owen Electric Supply Co.
Swank Hardware Co.
Lancaster, John E. Graybill & Co.
Meadville, Harley D. Carpenter
Oil City, Corrin Electric Supply Co.
Philadelphia, Morris Sklar Co.
Pittsburgh, Allied Electric Supply Co.
Co-Bar Lighting Fixture Co.
Keps Electric Co.
State Electric Supply Co.
Sterling Lite Appliance Co.
Wally Electric Supply Co.
Williamsport, Williamsport Electric Co.
York, John E. Graybill and Co.

RHODE ISLAND
Providence, Royal Electric Supply Co.

SOUTH CAROLINA
Charleston, Butts Electric Supplies
Greenville, Graves Electric Supply Co.

TENNESSEE
Chattanooga, Mid South Supply Co.
Memphis, Reichman-Crosby Co.

TEXAS
Amarillo, Broome Electric Co.
Corpus Christi, Corpus Christi Hardware Co.
Houston, Reichardt Electric Co.

UTAH
Salt Lake City, Modern Electric Co.
Sharp Electric Co.

VIRGINIA
Lynchburg, Mid State Electrical Supply Co., Inc.
Norfolk, W. M. Reay & Co., Inc.
Richmond, Tower-Binford Electric & Manufacturing Co.

WEST VIRGINIA
Huntington, Emmons Hawkins Hardware Co.
Parkersburg, United Electrical Supply Co.

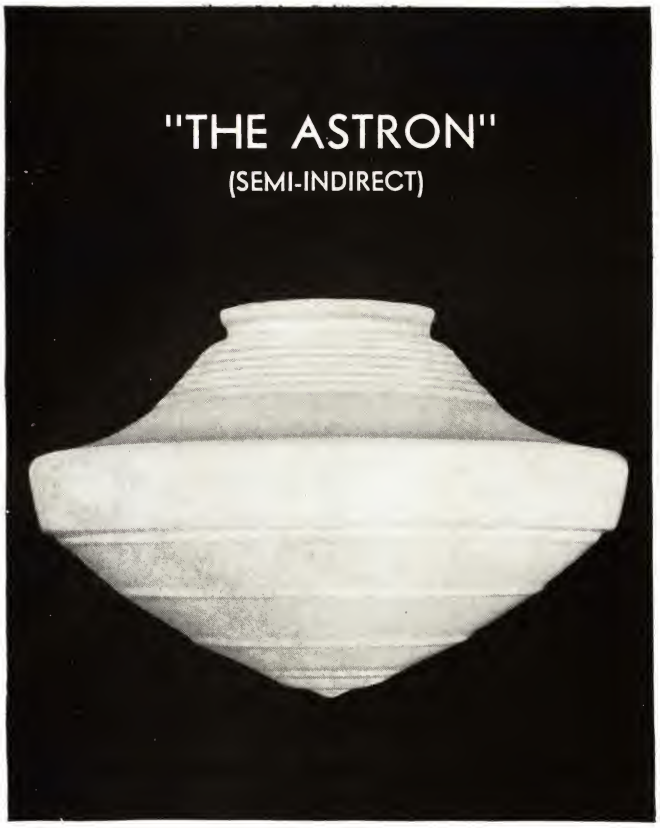
VERMONT
Rutland, C. E. Oakman

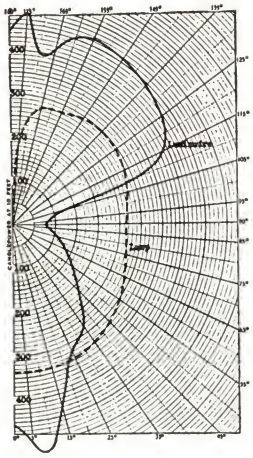
WASHINGTON
Seattle, Dwyer & Co.
Seattle Lighting Fixture Co.
Spokane, Spokane Stove & Repair Works (Metallic Arts Div.)

WISCONSIN
Green Bay, Morley Murphy Co.
La Crosse, W. A. Roosevelt Co.
Madison, Crescent Electric Supply Co.
Milwaukee, Moe Bros. Milwaukee Co.

MACBETH LIGHTING GLASS

The "ASTRON" • Semi-Indirect • Recommended for Schools and Hospitals





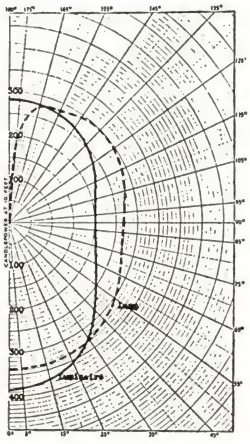
The "ASTRON" is a new completely enclosed GALAX BRAND globe for semi-direct illumination. The "ASTRON" combines high lighting efficiency with low surface brightness. It is made of a single layer glass. A dense reflecting lower portion directs most of the light upward through the highly transmitting top section. A more desirable feature of totally enclosed globes is their ease of maintenance.

The trend towards this type of unit has been accelerated by the acceptance of the "American Recommended Practice of School Lighting" (prepared under the joint sponsorship of the A.I.A. and tpe I.E.S.).

Mould No.	Diameter, in.	Depth, in.	Fitter diam., in.	Suggested wattage
81381	14	8⅞	6	200
81382	16	10 1/16	6	300
81383	18	11⅜	6	500

The "ORION" • General Diffuse • for Institutions, Offices, Schools





A new shape in the Corning line and made of MONAX white diffusing glass. This "ORION" is a highly efficient enclosing globe, designed to meet modern requirements, which provides economical lighting.

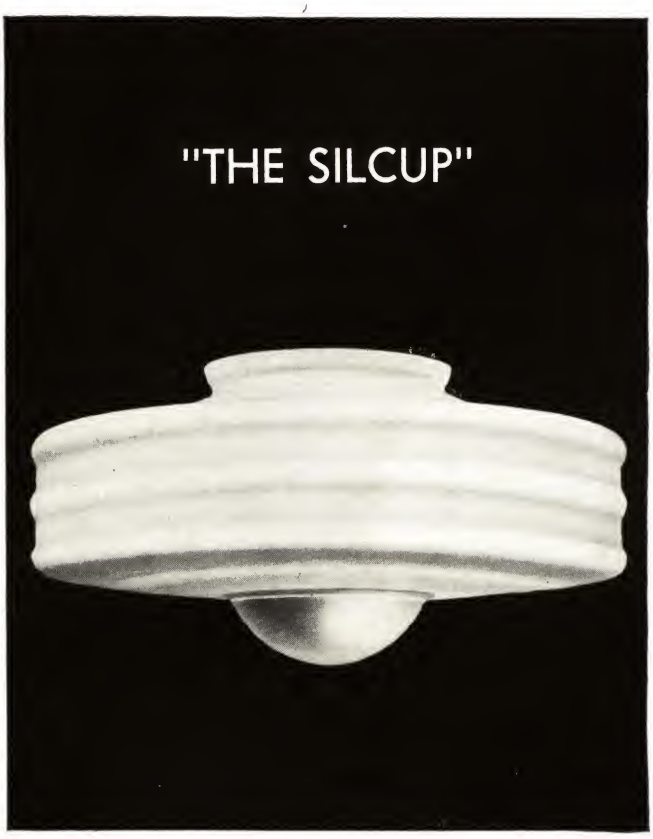
The following table suggests wattages which will give the low globe brightnesses acceptable for classrooms, and offices.

Should a louvre on the "ORION" be desired, there is ample provision on the globe's rim.

Mould No.	Diameter, in.	Depth, in.	Fitter diam., in.	Suggested wattage
81391	9⅜	6½	4	75
81392	12⅜	8⅝	6	100
81393	14⅜	9⅞	6	150
81394	16⅜	11⅞	6	200
81395	18⅜	13⅛	6	300

MACBETH LIGHTING GLASS (Continued)

The "SILCUP" • Attractive Design • Aluminum Decorated Cup

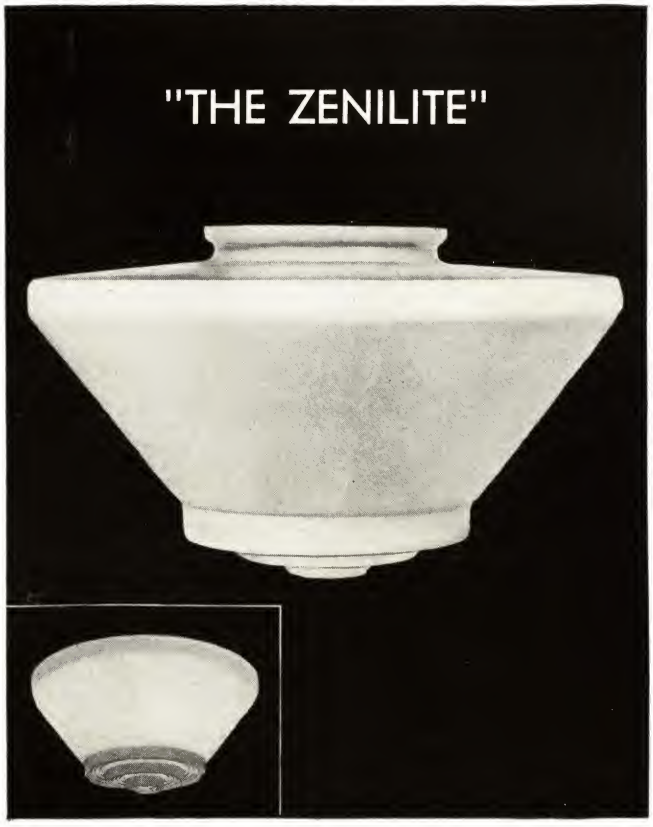


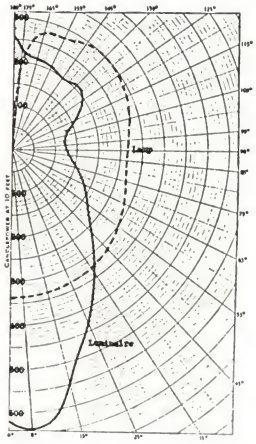
This "SILCUP", completely enclosed, is made of MACBETH MONAX illuminating glass — the glass that for years has proved its worth as a dependable, highly desirable glass for diffuse lighting. And in the new "SILCUP" globe, MONAX becomes even more attractive.

To add a further refreshingly modern effect, the bottom or cup portion of the "SILCUP" has been covered with a fired application of aluminum paint.

Mould No.	Diameter, in.	Depth, in.	Fitter diam., in.	Suggested wattage
81324-D-246	10	$5\frac{15}{16}$	4	100
81325-D-246	12	$5\frac{15}{16}$	4	150
81326-D-246	14	$6\frac{7}{8}$	6	200
81327-D-246	16	$7\frac{11}{16}$	6	300
81328-D-246	18	$9\frac{3}{16}$	6	500

The "ZENILITE" • Direct-Indirect Globe • Ring Louvres





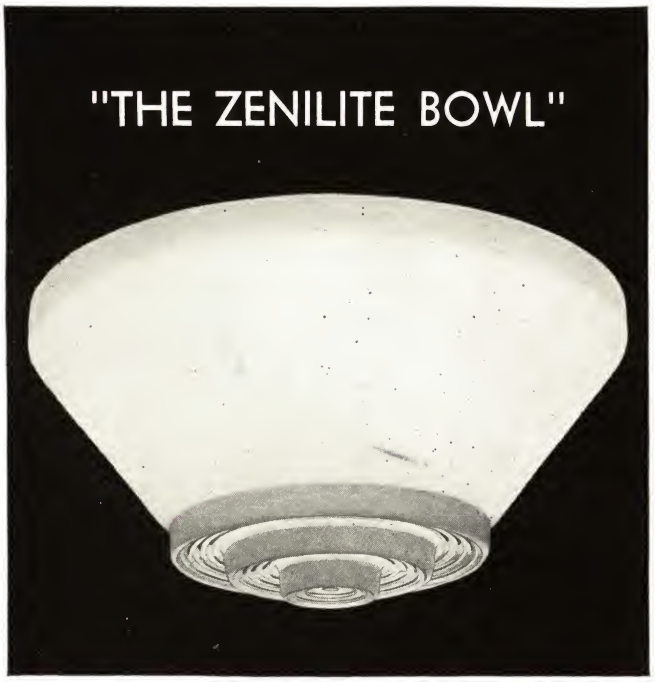
This well proportioned globe is the direct-indirect type and has a new and novel louvre effect. The top of the "ZENILITE" is treated with a slightly diffusing satin finish. The sides of the globe — also the straight sections of the louvres—are fired with a dense white reflecting enamel; this screens the bright light source from normal lines of vision and diverts a major portion of the light upward.

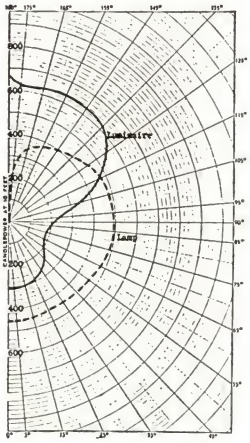
The bottom ringed surfaces of the louvres, however, remain clear, thus allowing passage of considerable undiffused light downward.

Mould No.	Diameter, in.	Depth, in.	Fitter diam., in.	Suggested wattage
81380-D-238	$9\frac{7}{16}$	$6\frac{1}{2}$	4	100
81388-D-238	$14\frac{3}{8}$	$8\frac{1}{2}$	6	200
81389-D-238	$16\frac{3}{8}$	$9\frac{7}{16}$	6	300

MACBETH LIGHTING GLASS (Continued)

The "ZENILITE BOWL" • Direct-Indirect • Ring Louvres





A new CORNING shape of the luminous bowl type — for direct-indirect illumination. The dense reflecting white enamel fired on the sides of the "ZENILITE BOWL" screens the bright light source from normal lines of vision and directs a major portion of the light upward.

A special feature of this bowl is the incorporation of clear glass louvres in the bottom to divert light downward.

Mould No.	Diameter, in.	Depth, in.	Suggested wattage
82754-D-238	16⅜	7 7/16	300

GLASS FOR FLUORESCENT LIGHTING

The revolutionary new light source known as fluorescent lamps is today claiming wide attention of architects. This new tubular type of lamp gives from 7 to 100 times as much light per wattage as the ordinary filament lamp. It is offered in 18, 24 and 36-inch lengths, and in 1 and 1½-inch diameters. Their five attractive colors—in addition to white and daylight—provide the architect with unlimited opportunities for entirely new lighting effects.

Already successful effects have been obtained by using these fluorescent lamps exposed. However, it is apparent, from many of the installations made, that some type of "garment" is desirable for softening their harshness and for blending and combining colors.

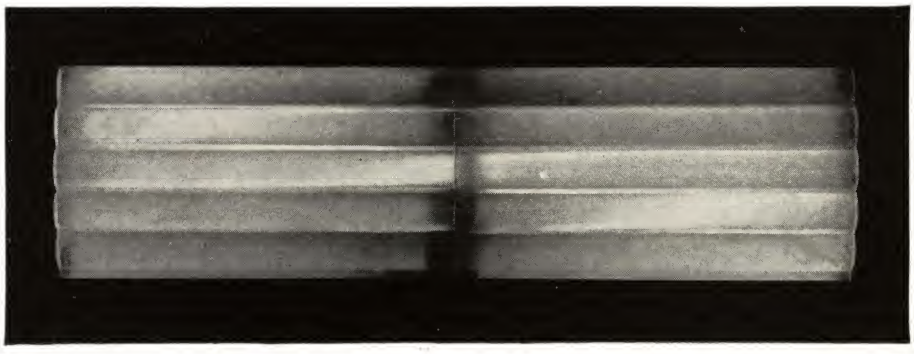
Corning engineers have studied the performance of fluorescent lamps and suggest glass as the garment. For glass — with its unique advantages — offers the architect more flexibility than is possible with any other medium.

The glass developed by Corning Engineers for fluorescent lighting has many important features. It modifies the brightness—and thereby, not only transforms harsh light into comfortable, glareless illumination, but permits pre-determined balance in brightness contrasts. It enables the architect for the first time — to "paint" extensively with color illumination. The glass developed —MONAX glass—efficiently blends the various fluorescent lamps into one light source. It thereby increases illumination and produces new tints.

When used with lamps of different colors, this glass makes possible spectacular, instantaneous changes in lighting atmosphere. This feature is particularly desirable in restaurants, night clubs and other decorative interiors where variation in lighting—from moonlight through all the rainbow colors to daylight—is highly effective.

In addition, kaleidoscopic effects, popular for theatrical or advertising display, can be obtained by using crystal glass plate, tubes or rods with lamps of contrasting colors. Matte surface glass produces a similiar but less spectacular effect. By altering lamp positions and varying textures and patterns of the glass, the architect is given a wide field of design possibilities.

Corning glassware is both effective and practical when combined with fluorescent lamps in wall brackets, concealed lighting, special fixtures, indirect lighting and other combinations.



CURTIS LIGHTING, INC.

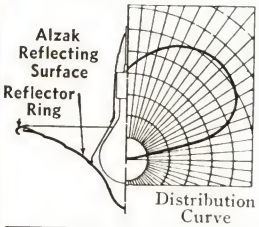
Manufacturers, Designers and Engineers of Superior Lighting Equipment

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CHICAGO PARIS TORONTO LONDON ANTWERP

CURTIS INDIRECT LIGHTING LUMINAIRES

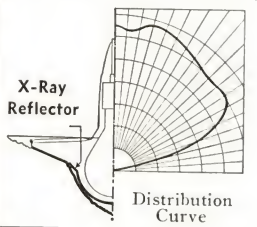




"Edge-Ray"
Alzak Reflecting Surface
Finished Lustrous Aluminum
200 watts—Cat. No. 1200
Bowl Dia. 17". Susp. 30".
500 or 300 watts—Cat. No. 1250
Bowl Dia. 21⅜". Susp. 36".
750 to 1500 watts—Cat. No. 1270
Bowl Dia. 27½". Susp. 48".
1000-watt Bipost (T-24)—
Cat. No. 1251
Bowl Dia. 21⅜". Susp. 36".

Designed by Walter Kantack, the "Edge-Ray" Luminaire possesses outstanding beauty. Atop the bowl is a reflector ring (an exclusive Curtis patent), which directs a small amount of light downward over the bowl exterior where it is picked up in a series of concentric rings. When illuminated, the fixture appears to be composed of dynamic circles of light.

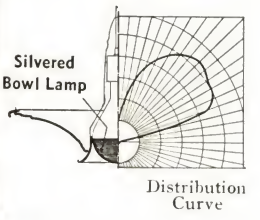




"Winner"
With "X-Ray" Reflector
Finished Bronzed Aluminum
with polished band
500 or 300 watts—Cat. No. 5090
Bowl Dia. 19½". Susp. 36".
1000-watt Bipost (T-24)—Cat.
No. 5091 Bowl Dia. 19½".
Susp. 36".

"Winner" offers the maximum in lighting efficiency. The X-Ray Reflector used in the fixture bowl insures permanent, scientific light control as well as the highest known reflection factor. "Winner" is recommended for offices, schools, drafting rooms. The luminaire presents a simple, tailored appearance.

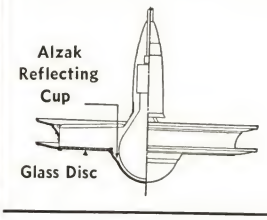




"L'Order"
For use with Silvered Bowl Lamp
Finished Lustrous Aluminum
200 watts—Cat. No. 121
Bowl Dia. 17". Susp. 30".
500 or 300 watts—Cat. No. 151
Bowl Dia. 21⅜". Susp. 36".
750 or 1000 watts—Cat. No. 171
Bowl Dia. 25½". Susp. 42".

"L'Order" is one of a group of Curtis fixtures for use with Silvered Bowl lamps. Its refined lines lend grace to modern architectural schemes, and its softly illuminated bowl enlivens the interior in which it is installed. The bowl of the fixture may be decoratively lighted by using a colored edge-ring.





"Larra"
Alzak Reflector Cup
Flashed Opal Glass Disc with
highlighted Aluminum bands
500 or 300 watts—Cat. No. 5060
Bowl Dia. 20". Susp. 36".
750 to 1500 watts—Cat. No. 5080
Bowl Dia. 24". Susp. 42".

"Larra" combines elegance with indirect lighting efficiency. The warm glow of the flashed opal glass disc and the silvery tones of the deep reflector cup and horizontal polished Aluminum bands present an interesting contrast. Particularly appropriate for reception rooms, lobbies, lounges and formal modern rooms.

INFORMATION ON OTHER CURTIS EQUIPMENT

To facilitate the execution of architects' lighting plans, CURTIS LIGHTING, INC. has developed, during 41 years of high-standard manufacture, a comprehensive and logical range of equipment.

Complete data is contained in the various catalog sections which constitute about 200 pages describing Curtis lighting equipment. These catalog sections fully cover *Indirect lighting, Recessed lighting, Cove lighting, Show Window lighting, Store lighting, Office lighting, Church lighting, Industrial lighting and Sports lighting.* Complete catalog information on these respective lines of equipment is available to architects upon request.

All Curtis Lighting products are obtainable through the Electrical Trade.

Direct-Indirect "Edge-Mont"

Excellent for stores, "Edge-Mont" produces high-level general indirect illumination, while its three concentric louvers shoot powerful direct light down onto open displays.

Alzak Reflecting Surface
Finished Lustrous Aluminum
500 or 300 watts—Cat. No. 1260
Bowl Dia. 21⅜". Susp. 36".
750 to 1500 watts—Cat. No. 1280
Bowl Dia. 27½". Susp. 48".
1000-watt Bipost (T-24)—Cat. No.
1261 Bowl Dia. 21⅜". Susp. 36".



Wall Applique "Urna"
Cat. No. 1548

Indirect general lighting with a minimum amount of wall splash is derived from this elegantly styled Wall Applique.

500 or 300 watts
Height 14". Width 13".
Projection 13½".

The body, which is an X-Ray Reflector, is finished Bronzed Aluminum, while the bracket is Satin Aluminum with polished highlights.

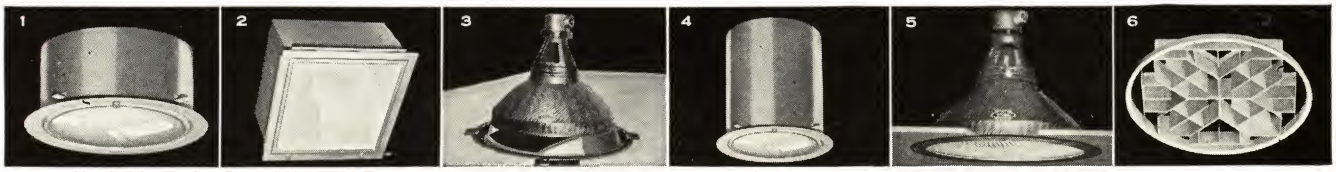


CURTIS ENGINEERING SERVICE

The Engineering-Design Division of Curtis Lighting, Inc., provides architects and builders with an important consulting service. In cases where the lighting scheme presents an unusual problem, thorough engineering analysis will be accorded each proposal and the most advanced, practical recommendations made.

Architects are urged to submit proposals during the first stages of building planning, that time, money, and effort may be saved both for them and their clients.

RECESSED LIGHTING EQUIPMENT



RECESSED LIGHTING

For *general* lighting in stores, churches, auditoriums, gymnasiums and other types of interiors where high-level illumination is necessary, recessed lighting has proved very successful. Reflector units for recessing above the ceiling shown here are a few of the flexible line of *standard* Curtis recessing equipment. A catalog containing complete information is available.

1. Round Shallow Metal Housed Units
Large Shallow Type for two 150-watt Lamps, 6″ Deep, 14½″ Diameter.
Small Shallow Type for two 100-watt Lamps, 6″ Deep, 11⅛″ Diameter.

2. Square Metal Housed Units
Large Shallow Type for two 150-watt Lamps, 6″ Deep, $14\frac{1}{16}$″ Square.
Small Shallow Type for two 100-watt Lamps, 6″ Deep, $11\frac{1}{16}$″ Square.
Large Deep Type (with "X-Ray" Reflector) For 300-watt Lamp, $15\frac{1}{4}$″ Deep, $14\frac{1}{16}$″ Square.
Small Deep Type (with "X-Ray" Reflector) For 200-watt Lamp, $13\frac{1}{16}$″ Deep, $11\frac{1}{16}$″ Square.

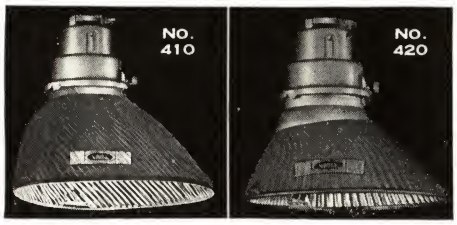
3. "X-Ray" Hinged Rim Unit
Available up to 500-watt size
Three sizes of Hinged Rim: 14″, 10″, 7″ dia.
Types: Distributing, Semi-concentrating, Concentrating
Acessories: Cover Glass, Wire Guard, Concentric or Pattern Louvers.

4. Round Deep Metal Housed Units
With "X-Ray" Reflector
Large Type for 300-watt Lamp
$15\frac{1}{4}$″ Deep, 14½″ Diameter.
Small Type for 200-watt Lamp
$12\frac{3}{8}$″ Deep, $11\frac{3}{16}$″ Diameter.

5. "X-Ray" Plain Recessed Unit
Available up to 1500-watt size
Types: Distributing, Semi-concentrating, Concentrating
Accessories: Wire Guard, Concentric Louver for concentrating type only

6. Pattern Louver
One of many standard equipment round and square louvers for use with recessed units. These correctly designed louvers direct light, cut out glare, and provide a decorative effect in harmony with the modern functional interior.

SHOW WINDOW LIGHTING



For Show Windows of Average Proportions

X-Ray—Cat. No. 410
150 watts
Holder included
Width 9⅜″
Depth 9½″
Height 8½″

X-Ray—Cat. No. 420*
150 watts
Holder included
Diameter $8\frac{5}{8}$″
Height $7\frac{9}{16}$″

X-Ray—Cat. No. 510
300 or 200 watts
Holder included
Width 10½″
Depth $10\frac{3}{4}$″
Height $10\frac{1}{4}$″

X-Ray—Cat. No. 530*
300 or 200 watts
Holder included
Diameter 9¾″
Height $9\frac{1}{16}$″

SILVER MIRROR "X-RAY" REFLECTORS

"X-Ray" Reflectors are made of clear crystal glass, mirrored with pure silver and permanently protected from deterioration by Curtis Golden Armor.

"X-Ray" Show Window reflectors can be conveniently supported on CurtiStrip, a simplified wiring channel, available from distributors' stocks everywhere. CurtiStrip may be wired on the bench and installed like a fixture.

*ATTRACTION-ZONE LIGHTING

For every type of show window—deep, medium or shallow—an "X-Ray" Reflector is available. Attraction-Zone "X-Rays" (such as Design Nos. 420 and 530) serve two purposes. They produce high level general illumination and highlight the most important display area just below the eye-level of the passerby, the "Attraction-Zone".

CURTISTRIP FOR FLUORESCENT LAMPS

To facilitate installation of Fluorescent lamps, new parts have been developed for CurtiStrip—the simplified wiring channel (2½″ wide, 1⅝″ deep). In coves, linear panels, pattern recesses, niches, architectural projections, etc., Fluorescent lamps may be installed by using Special Covers with CurtiStrip to support sockets and Alzak Aluminum reflectors. Special Covers are available for the three sizes of Fluorescent lamps: 18″ Cat. No. 93; 24″ Cat. No.

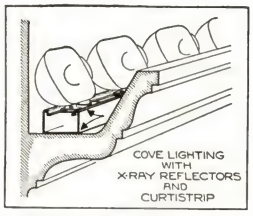


94; 36″ Cat. No. 95. The socket (Cat. No. 89) is the same for all lamp sizes, and reflectors are either symmetrical or asymmetrical.

Reflector Cat. No.	Length	Refl. Height incl. CurtiStrip	Reflector Type
76	18″	3½″	Symmetric
77	18″	6¾″	Asymmetric
86	24″	3½″	Symmetric
87	24″	6¾″	Asymmetric
96	36″	3½″	Symmetric
97	36″	6¾″	Asymmetric

COVE LIGHTING





"X-Ray" Distributing Type Cove Reflector (available in four sizes: 40 to 200 watts) mounted on CurtiStrip, continuous wiring channel.

"X-Ray" Reflectors are designed for every cove lighting need. Intimately related to the architecture of the interior, cove lighting specifications must be incorporated in the original building plans.

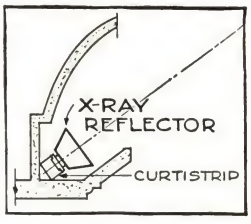


Diagram shows a typical mounting for the **Concentrating Type "X-Ray" Cove Reflector** which is available in four sizes (40 to 200watts).

For Panel lighting, Skylight lighting, Built-in lighting, etc., "X-Ray" Reflectors and other Curtis equipment provide the ideal economical solution. Complete, correctly designed accessory equipment is available for unique as well as conventional installations.

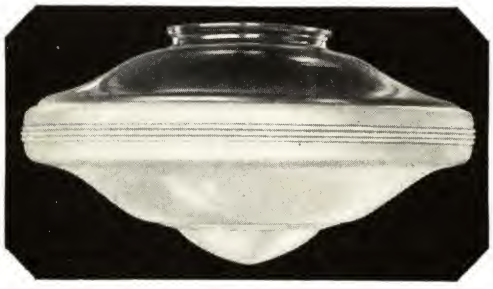
GLEASON-TIEBOUT GLASS COMPANY

CELESTIALITE DIVISION

200 Fifth Avenue, NEW YORK, N. Y.



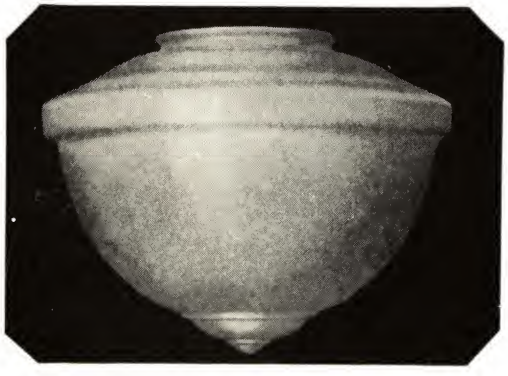
Celestialite No. 5920



Celestialite No. 12180*



Celestialite No. 11690



Celestialite No. 11440

CELESTIALITE

(Registered and Patented)

Next to Daylight



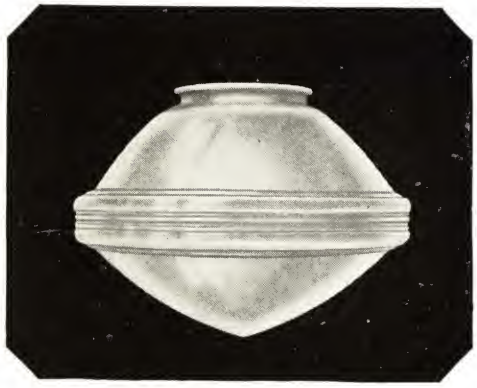
A perfected lighting glassware which provides the closest approach to daylight practical for general lighting. Made of three different layers of glasses fused together: (1) clear crystal glass for strength; (2) translucent white glass to diffuse rays; (3) blue glass to whiten and clarify the light.

In addition, Celestialite is stronger than ordinary single layer glass and has 20% greater visual acuity and visibility.

A sample piece of Celestialite glass and a complete catalog illustrating semi-indirect Celestialiers will be mailed on request.



Celestialite No. 12172



Celestialite No. 12170

DIMENSIONS AND WATTAGE OF CELESTIALITE LIGHTING GLASSWARE

Diam., In.	Fitter, In.	Wattage Mazda Lamps
No. 5920		
6	4	40
8	4	60
9⅜	4	100
10	4	100
11⅜	4	100
12	6	150
14	6	200
14	8	200
16	6	300
16	8	300
18	8	500
18	10	500
22	16	500 or 750
No. 12180*		
16¼	6	200
18¼	6	300 to 500

Diam., In.	Fitter, In.	Wattage Mazda Lamps
No. 11690		
12⅜	4	150
14⅜	6	200
No. 11440		
12	6	150
14	6	200
16	6	300
18	8	300 to 500
20	10	500 to 750
24	12	1000 and over
No. 12172		
14⅜	6	200
16⅜	6	300
No. 12170		
14⅜	6	200
16⅜	6	300 to 500

*Illustration is shown in L.S.B. glass; low surface brightness.

EDWIN F. GUTH COMPANY

Exclusively Devoted to Better Quality Lighting Equipment

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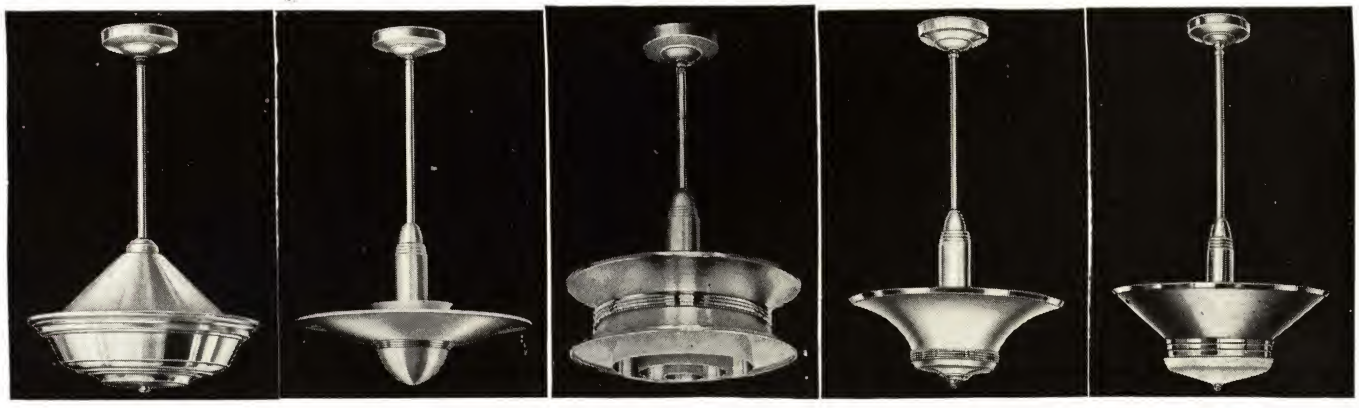
Guth LIGHTING SERVICE

Since 1902, the EDWIN F. GUTH COMPANY have reliably served the Architect and his lighting problems. Full knowledge of the Architect's tasks has developed for us competent designing and engineering staffs to assist in properly attending to lighting details, large and small. Inventions during the past year include OPTILUX which solves maintenance problem of indirect lighting, and LOUVRE LENS, an efficient moulded glass louvre of interesting pattern and applications.

Fluorescent Lighting

This new highly efficient light-source yields to architectural treatment and savings. Novel, practical uses have been devised by us and are workable in many lighting schemes.

New Commercial Luminaires—Patented and Patents Pending



Optilux
The "Inclosed Indirect" luminaire prevents accumulation of *"bugs, dust, and dirt,"* solving the maintenance problem of indirect lighting. Increases operating efficiency. Is excellent for schools and offices

Zephyr
Graceful, total indirect luminaire. Delivers "butterfly" lighting curve for even illumination of ceiling and working area. Particularly adaptable for low ceilings and wide outlet spacing. Permanent Alzak reflector

Excelux
The "Light-Blaster" for merchandise areas. Extreme efficiency due to carefully designed strategically placed Alzak louvres. Spacing of EXCELUX should not exceed ¾-to-1 times the mounting height

York
Modern, smart appearing indirect luminaire. Softly illuminated reflector exterior via light-spills. Equally appropriate for store and office. Reflector processed by Alzak, the untarnishing aluminum finish

Super Illuminator
The original luminous-bowl indirect luminaire. No direct-light through the luminous bowl by unique construction features. Business-like design. With Alzak aluminum reflector

RECESSED LIGHTING



Surface and Recessed Units
With LOUVRE LENS—the moulded heat-treated crystal glass lens with concentric and diagonal frosted-bands that cut-off direct light at 45°. Interesting design pattern is functional and pleasing. Available in 6, 8, 10 and 12-in. sizes



Louvre Lens Recessed Units
On 9 x 9-ft. spacings, 14-ft. ceiling, 300-watt lamps, produce 30-ft. candles of even illumination. Note excellent ceiling condition effected with LOUVRE LENS



Alzak Aluminum Industrial Reflectors
These feature new and permanently higher lighting efficiency providing sharper detail and "whiter" light which makes the seeing-job easier. No breaking or chipping facilitates maintenance and cleaning. Guth "Triple A" Alzak reflectors are nationally specified and installed by large and small users

A National Organization Rendering a National Lighting Service

Write for Latest GUTH *Catalogs*

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KLIEGL BROS.

UNIVERSAL ELECTRIC STAGE LIGHTING CO., INC.

TELEPHONE
COlumbus 5-0130

321 West 50th Street, New York, N. Y.

CABLE ADDRESS
"KLIEGLIGHT" N. Y.

DISAPPEARING FOOTLIGHTS



No. 829

Unbroken front open trough type. 15 lamps per 5-ft. section, wired for 3 colors

Cover extends full length of section. Footlight when open presents a continuous unbroken front to audience. Mercury switches automatically control circuits in open and closed positions. Both open trough and individual reflector types available with single or double row of 60 to 100-watt lamps.

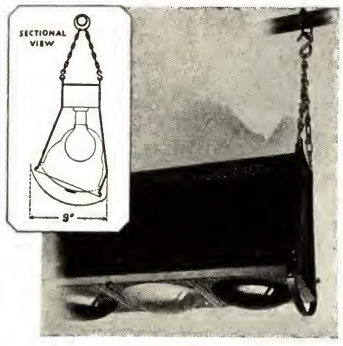


No. 833

Broken front, individual reflector type, with colored glass roundels

Very efficient single row unit for nine 100 or 150-watt lamps per 5-ft. section; wired for 3 colors; equipped with individual matte Alzak aluminum reflectors, hinged roundel holders, and heat-resisting naturally colored glass roundels, and automatic mercury cut-off switches. Complete line of permanent semi-flush footlights also manufactured.

PERMANENT TYPE BORDERLIGHTS

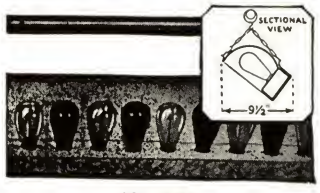


No. 602

All forms of standard and special designs available for theatres, schools, auditoriums, and other applications. Correctly designed to insure proper light distribution and maximum efficiency. Furnished complete, wired, with splice box, scenery guards and adjustable chain hangers. Made in any length and for any number of colors desired.

No. 602—Enclosed reflector type borderlight, for 200-watt clear lamps, with individual Alzak aluminum reflectors and slide grooves to receive Universal holder for colored heat-resisting glass roundels or other color mediums. Provide the utmost illumination, with the best possible control. Similar designs available for lamps from 100 to 1000 watts.

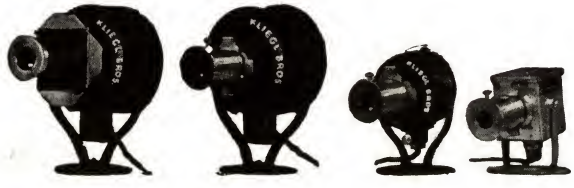
No. 600—Open trough type borderlight, for 60 to 100-watt naturally colored lamps, wired for three or more colors, spaced 3 to 4 in. on centers. Reflector painted permanent white, or lined with Alzak aluminum if required. Serviceable, inexpensive model, suitable for small stages.



No. 600

PICTURE LIGHTING PROJECTORS

Confine the light within chosen area.



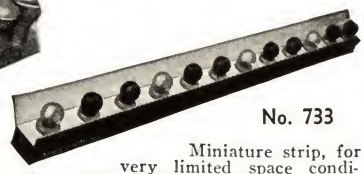
Project a beam of light which may be shaped to fit picture area. Equipped with four adjustable slides and objective lens system. Available in various sizes for lamps from 75 to 400 watts. Provided with round base or wall bracket for mounting. Supplied complete with extension cord and attachment plug.

COVE LIGHT STRIPS



No. 739

Light strip, fitted with individual Alzak aluminum reflectors and naturally colored glass roundels



No. 733

Miniature strip, for very limited space conditions with continuous trough reflector



No. 1745

Lumiline Strip Light with Alzak Finish Aluminum Reflector

Kliegl strip lights are made in every practical design, with or without reflectors, in straight or curved lengths, for lamps ranging from 10 to 200 watts; also various standard and special forms for Lumiline lamps. Furnished completely wired for one or more colors. For all types of concealed illumination and modern architectural treatments.

DOWNLIGHTS



No. 2164

500-watt unit for straight down projection



No. 2165

500-watt unit for angular projection

For direct illumination without exposed lighting fixtures, units being concealed in the ceiling, and projecting their light through a small opening. Permit control of direction and intensity of light and definition of illuminated area. Available in complete range of sizes for lamps from 50 candle power to 2000 watts. Furnished complete with flush ceiling plate and suitable mounting arrangements.

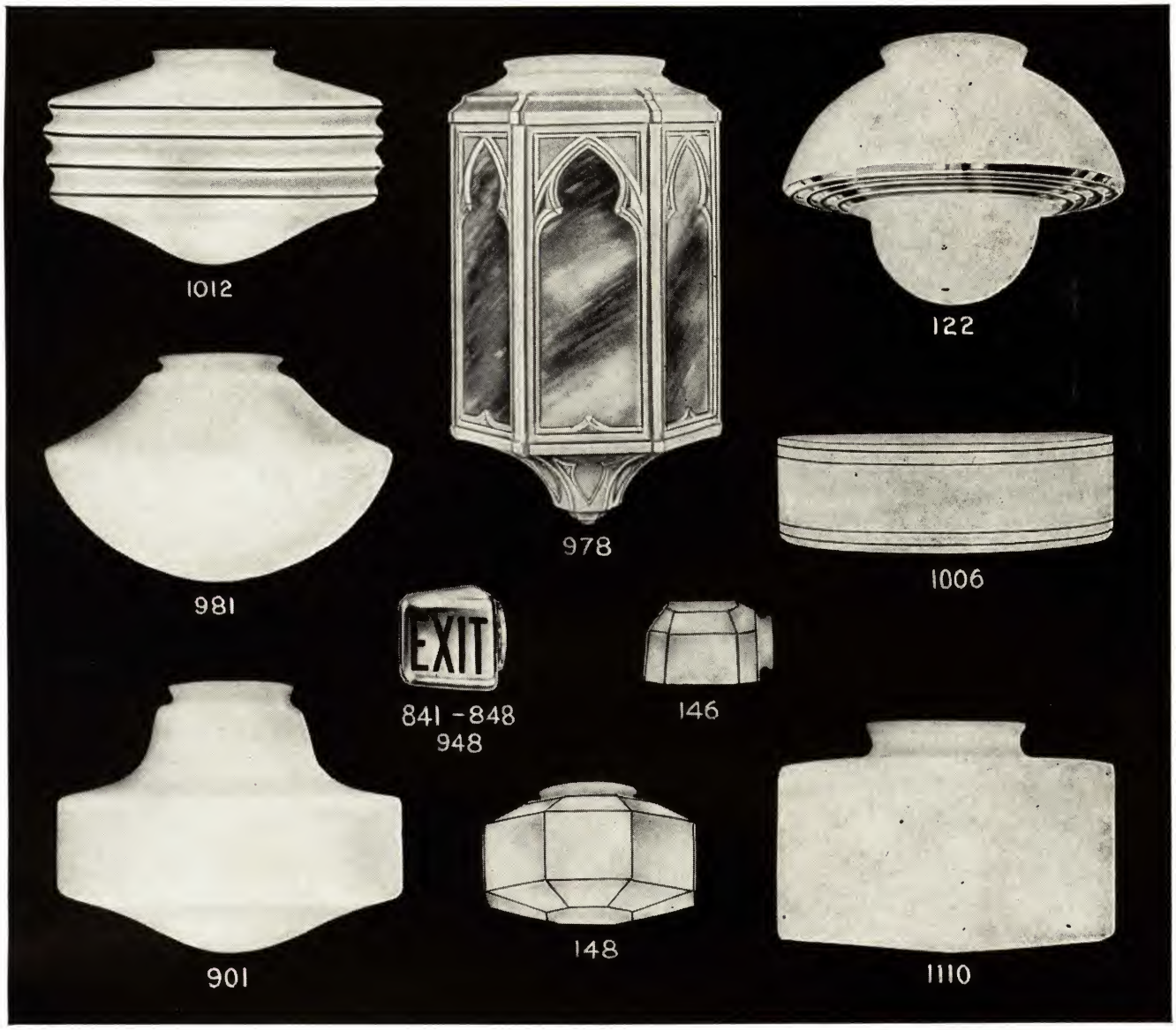
Catalog No. 40 showing complete line of Kliegl lighting specialties supplied on request.

KOPP GLASS, INC.

SWISSVALE, PA.

KOPP LIGHTING UNITS

Gothic, Modernistic and Conventional Designs Lighting Units: Daylight Cased, Delica White Cased; Crystal and Colored Glass; Gothic Designs, Plain and in Cathedral Color Effects; Nicco Opal Heat Resisting Glass adapted for outdoor use.



122 Line—Crystal Glass Enameled Top and Bottom

142—7″ x 4″
122—9″ x 4″
143—12″ x 6″
123—15″ x 6″

901 Line—Nicco and Delica Glass, Plain and Decorated

901— 6½″ x 3¼″
902— 8½″ x 4″
903—10½″ x 4″
904—12½″ x 6″
905—14½″ x 6″
906—16″ x 6″
959—18″ x 8″

981 Line—Nicco, Delica, Daylight, Alabaster Glass

981— 8½″ x 4″
983—12″ x 6″
984—14″ x 6″
985—16″ x 6″
986—18″ x 8″
987—10″ x 4″

1006 Line—Nicco Glass, Plain and Decorated

1006—16″ x 16″ x 4¾″
1007—10″ x 10″ x 3¾″
1008—12″ x 12″ x 4″
1009—14″ x 14″ x 4½″

1012 Line—Nicco and Delica Glass, Plain and Decorated

1012—12″ x 6″
1014—14″ x 6″
1016—16″ x 6″
1018—18″ x 8″

1110 Line—Nicco Glass, Plain and Decorated

1110—10″ x 4″
1112—12″ x 6″
1114—14″ x 6″
1116—16″ x 6″

978 Line—Nicco and Ivory Glass, Plain and Decorated Cathedral Color Effects

974—14″ x 8″ x 24″
976— 6½″ x 4″ x 12″
977—12″ x 6″ x 10″
978—10½″ x 6″ x 18½″
979— 4⅜″ x 3¼″ x 8″

Kitchen and Bathroom Shades, Plain and Full Tint Colors

146—5¼″ x 4″ x 2¼″
148—9″ x 4″

Exit Balls—Nicco and Colored Glass

841—4½″ x 4½″ x 3¼″
848— 7″ x 8″ x 4″
948—5½″ x 5½″ x 4″

Write for Catalog of Our Complete Line of Illuminating Glassware.

THE PHOENIX GLASS COMPANY

MONACA, PA.

SALES OFFICES

NEW YORK, N. Y., Chrysler Building — CHICAGO, ILL., Garland Building — PHILADELPHIA, PA., Drexel Building

The Product

A complete line of lighting glassware for unusual or standard requirements. In addition to "The Sterling," we offer Radiant Glass for enclosing globes. This continues to be the outstanding single layer homogeneous glass combining the highest efficiency possible without sacrificing proper diffusion. Magia Glass for semi-indirect enclosing globes is an outstanding product.

Over fifty kinds of glass are available and surface finishes or textures include deep etched, ceramic decorated, carved, or cut designs.

Research and Development Facilities

The uniformity and quality of our glassware is maintained through complete laboratory control. Research facilities are available for any lighting problem, and an adequate staff of glass technologists are ready for any unusual glass requirement.

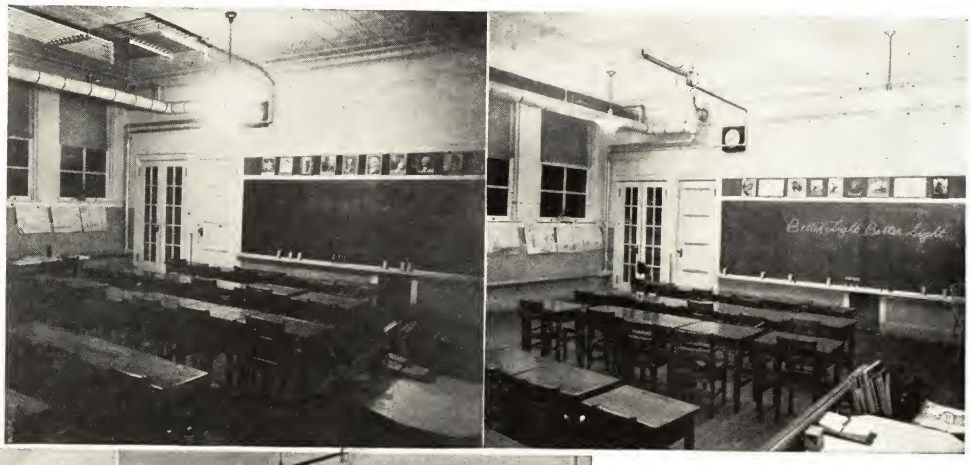
In the Design and Development Departments we have available a reliable, competent, and industrious staff.

Sketches or designs can be reproduced or suggested surface treatments can be submitted for your consideration.

BETTER LIGHT—BETTER SIGHT

In studying, countless visual impressions are made on the retina and transmitted to the brain so that the time required to see clearly is a factor. The lesson is learned more quickly and with less expenditure of physical and nervous energy if visual images are perceived rapidly and clearly. Seeing must be made easy, and "The Sterling" gives the effect of *indoor daylight* with a flood of uniform light for easy and quick seeing.

In good lighting, the light source merges into the background and does not arrest the eye or attract its attention. Bright glaring spots from brilliant light sources force the eye to contract, making seeing more difficult. Dark suspended objects, such as indirect metal fixtures, interrupt easy seeing and attract the eye. "The Sterling" with its low surface brightness merges into the color of the ceiling and does not arrest or hinder proper functioning of the eye.





Above: A marked improvement in school lighting. At the left, before installing "The Sterling;" at the right, after installing

Left: "The Sterling" is ideal for store and office lighting

"THE STERLING" FOR CORRECT SEMI-INDIRECT LIGHTING

"The Sterling," shown on facing page, is the result of long and painstaking research by The Phoenix Glass Company. The object was to develop a glass for a semi-indirect lighting unit which would provide a flood of uniform subdued light, free from objectionable glare, at high foot candle intensities. In addition, the unit had to be beautiful by itself and harmonize with practically any interior. That "The Sterling" accomplishes these objects is apparent from a glance at the illustration and the photometric data.

The dense white glass used in "The Sterling" is free from contrasting colors and is an ideal light source for all types of installations but is particularly suitable for commercial lighting, such as stores and offices, also in schools. The pure white inner surface of the conical bowl is one of its most important features.

For certain types of interiors we recommend decoration 991 on the Sterling glass. With this the inner surface remains white, with its high reflection factor, but the outer surface is toned to a soft uniform ivory color. This combination provides an ideal light source and the color is most attractive.

The illustration shows "The Sterling" in use with two types of fixtures. These beautiful slender stem holders in chrome or satin aluminum complete the mounting of "The Sterling."

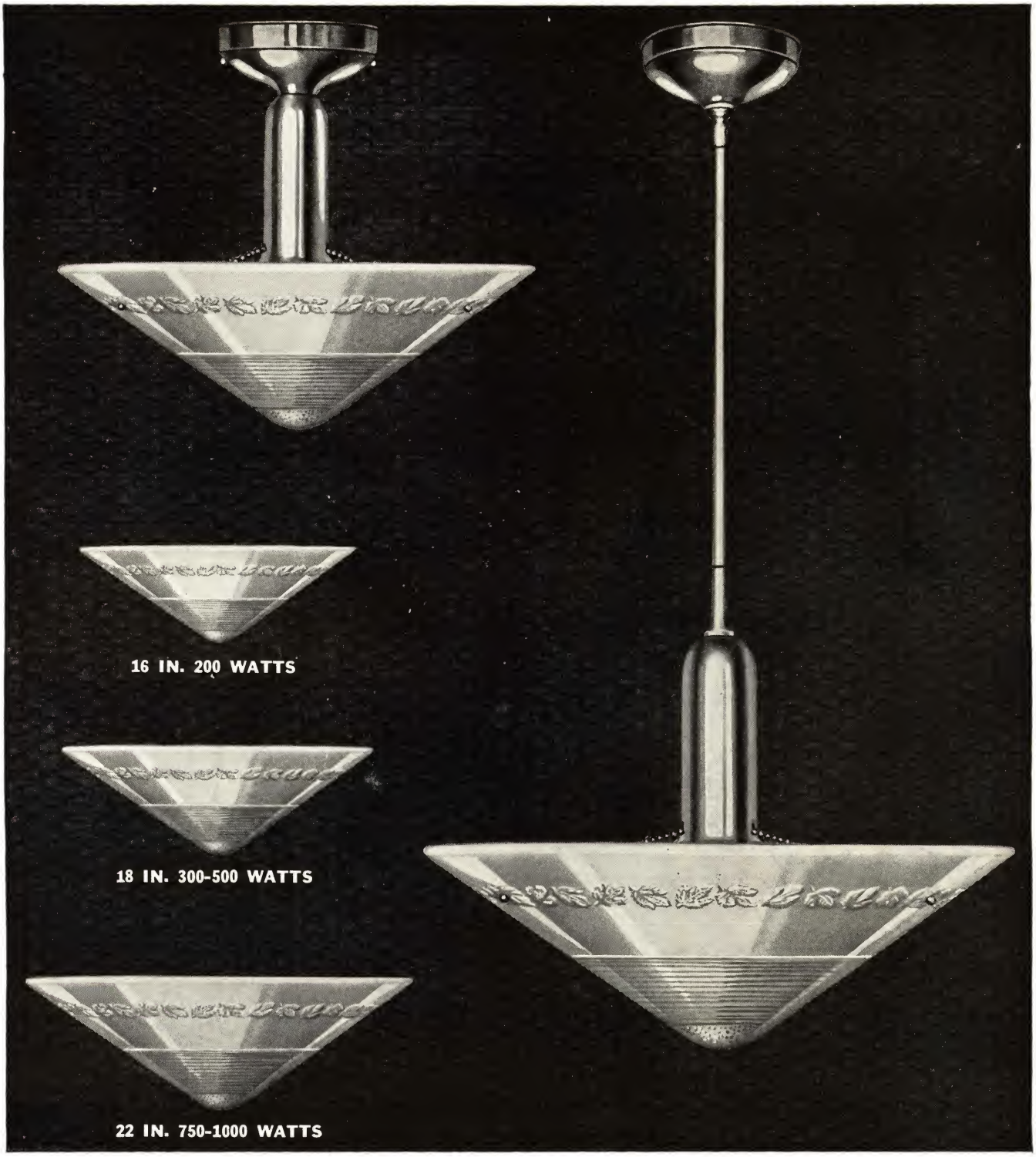
"The Sterling" is available in three diameters for different lamp sizes: 16 in. for 200 watts, 18 in. for 300-500 watts and 22⅜ in. for 750-1000 watts.

Photometric Data

The photometric test made by The Electrical Testing Laboratories showed "The Sterling" has a total light output of 86%. Of this amount 90% is directed upward to the ceiling and only 10% filters through the bowl. The ceiling becomes a secondary light source to provide a flood of shadowless and glareless lighting. For average conditions we recommend a mat white finish on the ceiling and a light tan or green finish on the walls.

Photometric charts and test reports are available on request.

Zone	Per cent total lumens bare lamp	Total per cent light output
0-60°	5.5	86%
0-90° (Downward)	8.0	
90-180° (Upward)	78.0	
0-180°	86	



A FEW USERS OF "THE STERLING"

State Capitol, Olympia, Wash.
Bell Telephone Company Bldg., Chicago, Ill.
Brentwood High School, Pittsburgh, Pa.
Paris Garter Co. Bldg., Chicago, Ill.
Senior High School, Appleton, Wis.
Kennedy Co., Worcester, Mass.
Post and Flagg Offices, New York, N. Y.
Gulf Oil Corp. Offices, New York, N. Y.
St. Francis Hospital, Philadelphia, Pa.
King Features Syndicate, New York, N. Y.
Canadian Pacific Ry. Co. Offices, New York, N. Y.
High School, Cobleskill, N. Y.

MEMORANDA

WESTINGHOUSE ELECTRIC & MFG. CO.

LIGHTING DIVISION
Edgewater Park
CLEVELAND, OHIO

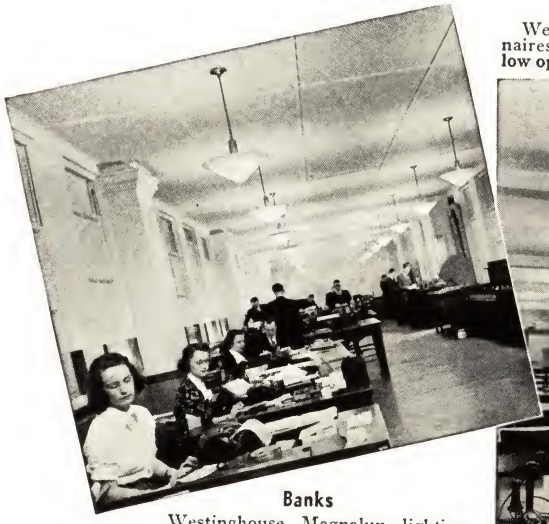
For other Westinghouse Electrical Products, see File Index

The Lighting Division of Westinghouse manufactures a complete line of Commercial, Industrial, Floodlighting, Street and Aviation lighting equipment. Lighting products of particular interest and appeal to architects, however, are those especially intended for Commercial, Industrial and Floodlighting applications. For such applications, Westinghouse prepares and issues a great variety of descriptive information, including architectural specifications and installation data.

Not only is complete information furnished on Westinghouse Lighting equipment and typical installations, but application engineering service is available on request to architects and their clients, in connection with specific commissions.

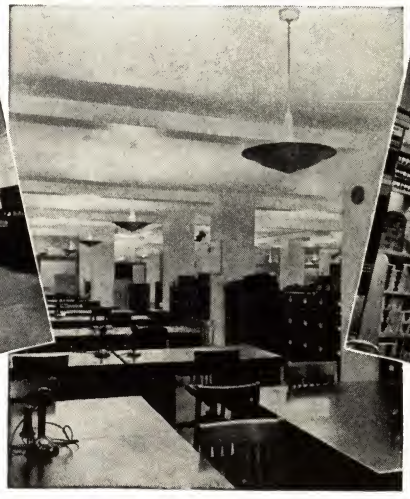
Typical interior lighting installations include Stores, Offices, Banks, Schools, Hotels, Hospitals, Libraries, Government Buildings and Industrial Plants; with decorative or other types of Floodlighting for such projects as may fall within the scope of the Architect's professional activities.

On the following pages, selected Westinghouse lighting products for Commercial, Industrial and Floodlighting uses are described, followed by a list of all Westinghouse Lighting Distributors. For reference information about other forms of electrical equipment manufactured by Westinghouse, turn to the composite Westinghouse insert in the current edition of SWEET'S; but for full details on Lighting, call your local Westinghouse Lighting Distributor, or write to WESTINGHOUSE ELECTRIC & MFG. CO., Lighting Division, Edgewater Park, Cleveland, Ohio.



Banks
Westinghouse Magnalux lighting has increased the over-all operating efficiency in banking offices

Offices
Westinghouse MB (Metal Bipost) luminaires provide high intensity lighting at low operating cost in this public utility office





Stores
Westinghouse Storlites pour "two to three times more light" on floor, shelf and counter merchandise



Swimming Pools
Westinghouse CS-14 Aqualux (underwater) floodlights add to the beauty and safety of swimming pools



Public Buildings
Westinghouse CAG and CAK heavy-duty floodlighting units are used to "paint with light" the tower of this fine State Capitol



Industrial Plants
Westinghouse Combination and High Intensity Mercury equipment produces illumination for close seeing

Westinghouse manufactures a complete line of Commercial, Industrial and Floodlighting Equipment

COMMERCIAL LIGHTING



MB Luminaire

First Commercial lighting unit designed specifically for medium Bipost lamps, the new Metal Bipost luminaire is smartly styled and furnishes high-intensity, totally indirect illumination at low operating cost. Characteristic butterfly distribution from the new light source is utilized to full advantage by an aluminum basin-reflector available in sizes for 500-watt and 1000-watt lamps. Equally effective at low and high ceiling heights. Write for Westinghouse Lighting Catalog Section 61-254.



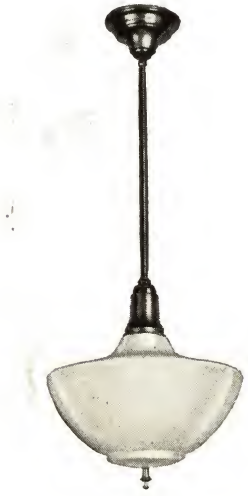
Magnalux

Magnalux is a luminous-indirect lighting unit which provides ample, glare-free illumination for a wide range of Commercial interiors. The patented Denax glass basin, with selected increase of glass thickness in the zone of the lamp filament, has a high reflection factor with low surface brightness. Available in a variety of hanger types, basin styles and adapted for from 200-watt to 1000-watt lamp sizes. Write for Westinghouse Lighting Catalog Section 61-250 and other descriptive literature.



TI Luminaire

TI is a totally indirect lighting unit of high-grade construction and performance, moderately priced. Built for utility, this unit is smartly styled to provide efficient, well distributed, glare-free illumination for modern Commercial interiors. Supplied with a threadless hanger, the TI is easy to install at different ceiling heights. Available both in 300- to 500-watt and 750- to 1000-watt sizes. Write for Westinghouse Lighting Catalog Section 61-252 and for other descriptive literature.



Lunalux

An efficient, semi-indirect glass enclosing globe-type lighting unit with excellent diffusion characteristics. A distinguishing feature is the patented "Tilt-out" glass cap at the bottom, to facilitate maintenance and reduce breakage hazard. Especially suitable for schools and a variety of Commercial uses. Three types of hangers are available . . . for Plain Ceiling, Plain Chain and Plain Semi-Rigid suspension. Write for Westinghouse Lighting Catalog Section 61-260 and for other descriptive literature.



Lunaire

The enclosing globe for this semi-indirect lighting unit is made of efficient, single-layer, double density glass, with more than half of the light directed upward. Designed for general Commercial applications, Lunaire furnishes high-intensity illumination that is abundant in quantity, well diffused in quality and economical to use. Each globe has a chip-proof, flame-seared fitter edge, for durability and trouble-free maintenance.

Write for Westinghouse Lighting Catalog Section 61-260.



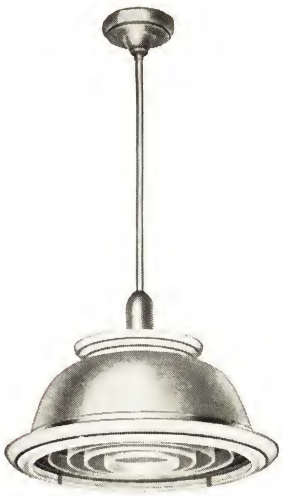
Sollite

Made of highest quality diffusing glass, the Sollite enclosing globe economically utilizes and distributes the maximum amount of light from the lamp. Especially suitable for high-ceilinged Commercial applications, where quality illumination and high maintained efficiency are desired at low cost. Available in plain or banded designs and with Chain, Semi-Rigid or Ceiling hangers, either of the "Safety" or "Screw" type.

Write for Westinghouse Lighting Catalog Section 61-270.

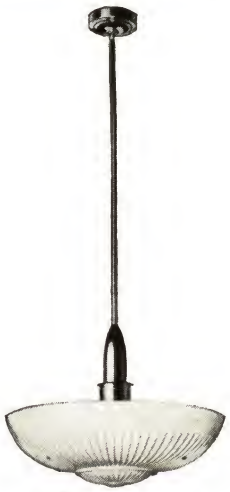
When You Think of Lighting Equipment . . . Think of Westinghouse!

COMMERCIAL LIGHTING



Storlite

A radical departure in luminaire design . . . providing two to three times as much light at merchandise display levels, but with sufficient upward light for general store illumination. Supplied in Standard and De luxe models . . . the latter with an ornamental glass band around the lower rim of the aluminum reflector. Special louver assembly prevents glare in the normal field of vision. Write for Westinghouse Catalog Section 61-258 and other descriptive literature.



GB Luminaire

The GB (Glass Bipost) unit for Commercial applications, consists of a luminous-indirect Denax glass reflector basin, with an aluminum, semi-rigid, hanger. Designed for incandescent Bipost lamps, this unit provides higher illumination values at lower cost, with high maintained efficiency and wider light distribution. Equally effective at high and low ceiling levels. Write for Westinghouse Lighting Catalog Section 61-256 and for other descriptive literature.



Silvurn

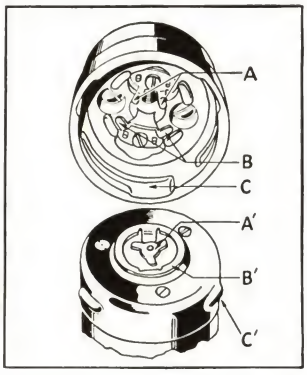
Specified for modern, semi-indirect lighting, Silvurn provides genuine *light conditioning* at moderate cost. The Silvurn reflecting basin is of aluminum and is fitted with an enclosing globe at the bottom . . . available in three different styles. Each globe is sealed with an inner Translux disk that is dust- and bug-proof and increases the amount of upward light. Write for Westinghouse Lighting Catalog Section 61-250 and for other descriptive literature.

INDUSTRIAL AND FLOODLIGHTING

• Locklite



"RLM" Dome Reflector



• Locklite two-piece construction is illustrated at the right to show how electrical contacts are made when the neck of the reflector (below) is locked in the hood above

"Locklite" is a new and exclusive Westinghouse method of industrial reflector suspension. Each Locklite unit consists of a hood with receptacle, into which the reflector with lampholder is locked by a short, clockwise turn. It lights when it is locked and *only* when it is locked. Locklite construction is now available with RLM Dome, Deep Bowl and Symmetrical Angle reflectors and with the new RLM Silvered Bowl Diffuser; also with the Westinghouse Glassteel Diffuser and Shallow Dome reflector. Write for Westinghouse Lighting Catalog Section 61-153 and other descriptive literature.

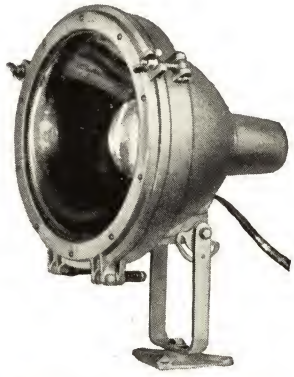
Floodlighting Equipment

Westinghouse Floodlights are available for heavy-duty and general purpose applications. Sturdy construction and the use of aluminum reflectors and socket housings guarantee easy maintenance, high light output and long life.

Floodlights are furnished with narrow-beam or wide-beam reflectors. Through the use of different lenses and frosted or clear lamps, a complete range of narrow-, medium- or wide-beam spread can be obtained.

Typical applications include decorative floodlighting for building exteriors, service station lighting, floodlighting of sports fields, garages, driveways, yards, gardens, shrubbery, pools, fountains, etc.

Call your local Westinghouse Distributor Lighting Specialist; or address the WESTINGHOUSE ELECTRIC & MFG. CO., Lighting Division, Edgewater Park, Cleveland, Ohio, for complete details and installation data on Commercial, Industrial and Flood-Lighting Equipment.



Typical Westinghouse Heavy-Duty Floodlight Type CAK

When You Think of Lighting Equipment . . . Think of Westinghouse!

SALES OFFICES AND JOBBERS

WESTINGHOUSE ELECTRIC & MANUFACTURING CO.

Edgewater Park — LIGHTING DIVISION — Cleveland, Ohio

AKRON, OHIO
Westinghouse Elec. & Mfg. Co.
Moock Elec. Supply Co.

ALBANY, N. Y.
Westinghouse Elec. & Mfg. Co.
Westinghouse Elec. Supply Co.

ALBUQUERQUE, N. M.
J. Korber & Co.

ALLENTOWN, PA.
H. N. Crowder, Jr. Co.
Westinghouse Elec. & Mfg. Co.
Westinghouse Elec. Supply Co.

AMARILLO, TEX.
Westinghouse Elec. & Mfg. Co.

APPLETON, WISC.
Westinghouse Elec. & Mfg. Co.

ATLANTA, GA.
Westinghouse Elec. & Mfg. Co.
Westinghouse Elec. Supply Co.

AUGUSTA, ME.
Wetmore-Savage Elec. Supply Co.

BAKERSFIELD, CALIF.
Westinghouse Elec. & Mfg. Co.

BALTIMORE, MD.
Westinghouse Elec. & Mfg. Co.
Westinghouse Elec. Supply Co.

BANGOR, ME.
Wetmore-Savage Elec. Supply Co.

BATTLE CREEK, MICH.
Central Elec. Supply Co.

BAY CITY, MICH.
The Jennison Hardware Co.

BEAUMONT, TEXAS
Westinghouse Elec. & Mfg. Co.

BINGHAMTON, N. Y.
Westinghouse Elec. Supply Co.
Westinghouse Elec. & Mfg. Co.

BIRMINGHAM, ALA.
Westinghouse Elec. & Mfg. Co.
Moore-Handley Hardware Co.

BLOOMSBURG, PA.
E. R. Beers Electric Co.

BLUEFIELD, W. VA.
Westinghouse Elec. & Mfg. Co.
Superior Sterling Company

BOSTON, MASS.
Westinghouse Elec. & Mfg. Co.
Wetmore-Savage Elec. Supply Co.

BRIDGEPORT, CONN.
Westinghouse Elec. & Mfg. Co.
Sprague Electrical Supplies, Inc.

BUFFALO, N. Y.
Westinghouse Elec. & Mfg. Co.
McCarthy Bros. & Ford

BURLINGTON, VT.
Westinghouse Elec. & Mfg. Co.
Westinghouse Elec. Supply Co.

BUTTE, MONT.
Westinghouse Elec. & Mfg. Co.
Westinghouse Elec. Supply Co.

CANTON, OHIO
Westinghouse Elec. & Mfg. Co.
The Moock Electric Supply Co.

CEDAR RAPIDS, IOWA
Westinghouse Elec. & Mfg. Co.

CHARLESTON, W. VA.
Westinghouse Elec. & Mfg. Co.
Charleston Elec. Supply

CHARLOTTE, N. C.
Westinghouse Elec. & Mfg. Co.
Westinghouse Elec. Supply Co.

CHATTANOOGA, TENN.
Westinghouse Elec. & Mfg. Co.
Mills & Lupton Supply Co.

CHICAGO, ILL.
Westinghouse Elec. & Mfg. Co.
Westinghouse Elec. Supply Co.
Hyland Electrical Supply Co.

CINCINNATI, OHIO
Westinghouse Elec. & Mfg. Co.
The Johnson Electric Supply Co.

CLEVELAND, OHIO
Westinghouse Elec. & Mfg. Co.
Westinghouse Elec. Supply Co.

COLUMBIA, S. C.
Westinghouse Elec. Supply Co.

COLUMBUS, GA.
Columbus Iron Works

COLUMBUS, OHIO
Westinghouse Elec. & Mfg. Co.
Pixley Electric Supply Co.

DALLAS, TEXAS
Westinghouse Elec. & Mfg. Co.
Westinghouse Elec. Supply Co.

DAVENPORT, IOWA
Westinghouse Elec. & Mfg. Co.

DAYTON, OHIO
Westinghouse Elec. & Mfg. Co.
The Nichols Electric Co.

DENVER, COLO.
Westinghouse Elec. & Mfg. Co.
The Mine & Smelter Supply Co.

DES MOINES, IOWA
Westinghouse Elec. & Mfg. Co.
Westinghouse Elec. Supply Co.

DETROIT, MICH.
Westinghouse Elec. & Mfg. Co.
Westinghouse Elec. Supply Co.

DULUTH, MINN.
Westinghouse Elec. & Mfg. Co.
Westinghouse Elec. Supply Co.

EASTON, PA.
H. N. Crowder, Jr. Co.

EL PASO, TEXAS
Westinghouse Elec. & Mfg. Co.

EMERYVILLE, CALIF.
Westinghouse Elec. & Mfg. Co.

ERIE, PA.
Westinghouse Elec. & Mfg. Co.
Star Electrical Co.

EVANSVILLE, IND.
Westinghouse Elec. & Mfg. Co.
Westinghouse Elec. Supply Co.

FAIRMONT, W. VA.
Westinghouse Elec. & Mfg. Co.

FALL RIVER, MASS.
Smith Electric Co.

FLINT, MICH.
Westinghouse Elec. Supply Co.

FORT WAYNE, IND.
Westinghouse Elec. & Mfg. Co.
National Mill Supply Co.

FORT WORTH, TEXAS
Westinghouse Elec. & Mfg. Co.
Westinghouse Elec. Supply Co.

FRESNO, CALIF.
Westinghouse Elec. & Mfg. Co.

GARY, IND.
Westinghouse Elec. & Mfg. Co.

GRAND RAPIDS, MICH.
Westinghouse Elec. & Mfg. Co.
Westinghouse Elec. Supply Co.

GREENSBORO, N. C.
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HARTFORD, CONN.
Westinghouse Elec. & Mfg. Co.
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Westinghouse Elec. & Mfg. Co.
Westinghouse Elec. Supply Co.

WASHINGTON, D. C.
Westinghouse Elec. & Mfg. Co.
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Sprague Electrical Supplies, Inc.

WATERLOO, IOWA
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Westinghouse Elec. Supply Co.

YORK, PA.
Westinghouse Elec. & Mfg. Co.
Westinghouse Elec. Supply Co.

YOUNGSTOWN, OHIO
Westinghouse Elec. & Mfg. Co.
Moock Electric Supply Company

HONOLULU, T. H.
The Hawaiian Electric Company

WESTINGHOUSE ELECTRIC
INTERNATIONAL CO.
150 BROADWAY, NEW YORK, U. S. A.

CANADIAN WESTINGHOUSE CO., LIMITED
HAMILTON, ONTARIO

Westinghouse Manufactures a Complete Line of Commercial, Industrial and Floodlighting Equipment

BENJAMIN ELECTRIC MFG. CO.

Benjamin Lighting Equipment for Commerce and Industry, Floodlighting Equipment, Electrical Specialties and Signals

GENERAL OFFICES AND FACTORY
DES PLAINES (Chicago Suburb), ILL.
NEW YORK OFFICE, 230 West 17th Street CHICAGO OFFICE, 20 No. Wacker Drive SAN FRANCISCO OFFICE, 448 Bryant Street

Products

The Benjamin line includes: PORCELAIN ENAMELED STEEL REFLECTORS and SPECIALTIES; ACIDPROOF, EXPLOSIONPROOF, MERCURY LAMP, VAPORPROOF and WEATHERPROOF LIGHTING EQUIPMENT; FLOODLIGHTING EQUIPMENT. Also Wiring Devices; Industrial Signals.

With a few exceptions, all Benjamin sockets and receptacles are listed by Underwriters' Laboratories, Inc.

Leading electrical wholesalers in every city carry a stock of Benjamin Products and are in position to render prompt service on inquiries and orders.

Benjamin district representatives have headquarters in strategically located cities, while divisional sales offices and warehouses are maintained at New York and San Francisco.

"Turnlox" Two-piece Lighting Equipment

Benjamin Reflector and lamp removable as unit by simple quarter turn of reflector in the hood. Reflectors are porcelain enameled steel. Pendent and angle hoods tapped ½ in., standard ceiling hoods fit 4-in. standard, round or octagonal boxes.

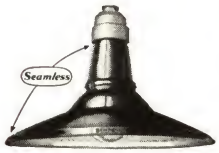


RLM Dome

RLM DOME REFLECTOR

Lamp, watts	List price	Dia., in.	Cat. No. of unit		
			Pendent	Ceiling	Angle
75	$3.60	12	7640	9640	3640
100	3.60	12	7641	9641	3641
150	3.80	14	7642	9642	3642
200	4.40	16	7643	9643	3643
300, 500	5.70	18	7644	9644	3644
750, 1500	7.60	20	7645	9645	3645

Standard package is 10 on 50 to 200 watts; 5 on 300 to 1500 watts. Schedule 2 discounts.

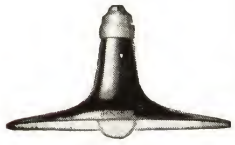


Shallow Dome

SHALLOW DOME REFLECTOR

Lamp, watts	List price	Dia., in.	Cat. No. of unit		
			Pendent	Ceiling	Angle
50, 60	$3.50	12	7437	9437	3437
75,100	3.60	12	7421	9421	3421
150	3.80	14	7423	9423	3423
200	4.40	16	7425	9425	3425
300, 500	5.70	18	7509	9509	3509

Standard package is 10 on 50 to 200 watts; 5 on 300 to 500 watts. Schedule 2 discounts.



Flat Cone

FLAT CONE REFLECTOR

Lamp, watts	List price	Dia., in.	Cat. No. of unit		
			Pendent	Ceiling	Angle
50, 60	$3.60	14	7431	9431	3431
75, 100	3.60	14	7411	9411	3411
150	3.80	16	7402	9402	3402
200	4.40	18	7403	9403	3403

Standard package is 10. Schedule 2 discounts.



RLM Symmetrical Angle

RLM SYMMETRICAL ANGLE REFLECTOR

Lamp, watts	List price	Dia., in.	Cat. No. of unit		
			Pendent	Ceiling	Angle
100	$3.25	8	7541	9541	3541
150	3.75	10	7542	9542	3542
300, 500	5.35	14	7543	9543	3543
750, 1500	8.00	16	7544	9544	3544

Standard package is 10 on 50 to 150 watts; 5 on 300 to 1500 watts. Schedule 2 discounts.



Elliptical Angle

ELLIPTICAL ANGLE REFLECTOR

Lamp, watts	List price	Lgth., in.	Cat. No. of unit		
			Pendent	Ceiling	Angle
75, 100	$3.80	12¾	7522	9522	3522
150	4.50	12¾	7525	9525	3525
200	5.10	16¼	7526	9526	3526
300, 500	9.10	20	7537	9537	3537
750, 1500	10.10	21⅞	7538	9538	3538

Standard package is 10 on 75 to 200 watts; 5 on 300 to 500 watts and 2 on 750 to 1500 watts. Schedule 2 discounts.

Pull chain lamp holders for all above units medium base only, $0.80 advance in list; suffix unit catalogue number with "PUL." Self-locking lamp holders, medium base only, $0.50 advance in list; suffix fixture catalogue number with "LOK." Shock-absorbing lamp holders (except for elliptical angles) medium or mogul base, $0.10 advance in list; suffix fixture catalogue number with "SHB."

Socket-reflectors—One-piece Equipment

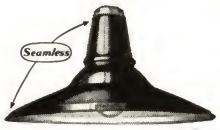
Benjamin Seamless porcelain enameled steel reflectors. Porcelain sockets have separable "X" type fitting tapped ½ in. standard; ¾ in. when specified, or bushed for drop cord. Reflectors are green outside, reflecting white inside.



RLM Dome

RLM DOME REFLECTOR

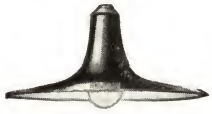
Lamp, watts	Cat. No.	*List price	Dia., in.	Std. pkg.
75	5640	$3.30	12	10
100	5641	3.30	12	10
150	5642	3.50	14	10
200	5643	4.10	16	10
300, 500	5644	5.30	18	5
750, 1500	5645	7.20	20	5



Shallow Dome

SHALLOW DOME REFLECTOR

Lamp, watts	Cat. No.	*List price	Dia., in.	Std. pkg.
50, 60	5437	$3.20	12	10
75, 100	5421	3.30	12	10
150	5423	3.50	14	10
200	5425	4.10	16	10
300, 500	5509	5.30	18	5



Flat Cone

FLAT CONE REFLECTOR

Lamp, watts	Cat. No.	*List price	Dia., in.	Std. pkg.
50, 60	5431	$3.30	14	10
75, 100	5401	3.30	14	10
150	5402	3.50	16	10
200	5403	4.10	18	10



RLM Bowl

RLM BOWL REFLECTOR

Lamp, watts	Cat. No.	*List price	Dia., in.	Std. pkg.
60	6166	$2.90	7	10
100	6161	3.10	8	10
200	6169	3.50	10	10
300, 500	6173	5.20	12	5
750, 1500	6177	6.40	16	5



RLM Symmetrical Angle

RLM SYMMETRICAL ANGLE REFLECTOR

Lamp, watts	Cat. No.	*List price	Dia., in.	Std. pkg.
100	5541	$2.95	8	10
150	5542	3.45	10	10
300–500	5543	4.95	14	5
750, 1500	5544	7.60	16	5



Elliptical Angle

ELLIPTICAL ANGLE REFLECTOR

Lamp, watts	Cat. No.	*List price	Lgth., in.	Std. pkg.
75, 100	5522	$3.50	12¾	10
150	5525	4.20	12¾	10
200	5526	4.80	16¼	10
300, 500	5537	8.70	20	5
750, 1500	5538	9.70	21⅞	2

*Schedule 2 discounts on all the above reflectors.

The Meaning of the RLM Label on Industrial Lighting Reflectors



The RLM Label is a warranty of uniform quality in industrial lighting reflectors. It certifies that reflectors so labeled conform in every detail to the RLM standards established by the RLM Standards Institute, which is a non-profit organization dedicated to the establishment and maintenance of quality standards in industrial lighting equipment. The RLM label is an assurance of more light at no extra cost as efficiency specifications for RLM reflectors are from 10-12% higher than the average reflector efficiency.

It likewise assures a porcelain enameled reflecting surface of durability which is impervious to atmospheric conditions, and can be easily maintained in excellent condition at lowest possible maintenance cost.

Reflectors bearing the RLM label are subjected to periodic tests by the well-known independent organization, "The Electric Testing Laboratories," assuring strict conformity at all times with the RLM standards.

Benjamin "Shall-O-Hood" Equipment

Two-piece threaded neck industrial lighting units with a new shallow, easy-to-wire hood. Reflectors are of porcelain enameled steel, green outside, reflecting white inside, with a rolled copper screw thread which fits threading on any of the four styles of hoods illustrated. Numbers listed below include reflector and hood with socket. Pendent hoods tapped ½ in. standard. Ceiling hoods fit 3¼ and 4-in. standard outlet boxes.


Pendent Cast Hood


Ceiling Cast Hood


Pendent Steel Hood


Ceiling Steel Hood


RLM Dome


RLM Bowl


RLM Angle

UNITS COMPLETE WITH RLM DOME REFLECTORS

Lamp, watts	Diam., inch.	Pendent cast hood		Ceiling cast hood		Pendent steel hood		Ceiling steel hood	
		Cat. No.	List Price	Cat. No.	List Price	Cat. No.	List Price	Cat. No.	List Price
75	12	3700	$3.50	3763	$3.70	3761	$3.30	3762	$3.30
100	12	3701	3.50	3711	3.70	3706	3.30	3716	3.30
150	14	3702	3.70	3712	3.90	3707	3.50	3717	3.50
200	16	3703	4.30	3713	4.50	3708	4.10	3718	4.10
300, 500	18	3704	5.50	3714	5.70	3709	5.30	3719	5.30
750-1500	20	3705	7.40	3715	7.60	3710	7.20	3720	7.20

UNITS COMPLETE WITH RLM BOWL REFLECTORS

Lamp, watts	Diam., inch.	Pendent cast hood		Ceiling cast hood		Pendent steel hood		Ceiling steel hood	
		Cat. No.	List Price	Cat. No.	List Price	Cat. No.	List Price	Cat. No.	List Price
100	8	3733	$3.30	3741	$3.30	3737	$3.10	3745	$3.10
200	10	3734	3.70	3742	3.70	3738	3.50	3746	3.50
300, 500	12	3736	5.40	3744	5.40	3740	5.20	3748	5.20
750-1500	16	3772	6.60	3775	6.80	3773	6.40	3774	6.40

UNITS COMPLETE WITH RLM SYMMETRICAL ANGLE REFLECTORS

Lamp, watts	Diam., inch.	Pendent cast hood		Ceiling cast hood		Pendent steel hood		Ceiling steel hood	
		Cat. No.	List Price	Cat. No.	List Price	Cat. No.	List Price	Cat. No.	List Price
100	8	3776	$3.15	3779	$3.35	3777	$2.95	3778	$2.95
200	12	3749	4.15	3755	4.35	3752	3.95	3758	3.95
300, 500	14	3750	5.15	3756	5.35	3753	4.95	3759	4.95
750-1500	16	3751	7.80	3757	8.00	3754	7.60	3760	7.60

Standard package is 10 on medium base and 5 on mogul base units.
Schedule 2 discounts.

"Turnlox" Glassteel Diffusers

Reflector, lamp and glass globe removable as a complete unit, for easy cleaning. Reflectors are interchangeable among any of three styles of hoods. Improved, quick-acting, "safety" globe holding ring is controlled by lever on outside of reflector. Reflectors are white porcelain enamel inside and out.





WITH OPAL GLOBES

Lamp, watts	List price	Dia., in.	Unit Cat. No.		
			Pendent	Ceiling	Angle
150, 200	$ 9.30	18	7201	9201	3201
300, 500	12.90	20	7202	9202	3202
750, 1000	18.90	24½	7203	9203	3203

WITH DAYLIGHT GLOBES

Lamp, watts	List price	Dia., in.	Unit Cat. No.		
			Pendent	Ceiling	Angle
150, 200	$ 9.80	18	7226	9226	3226
300, 500	13.65	20	7227	9227	3227
750, 1000	20.65	24½	7228	9228	3228

Benjamin Intensifier



For lighting small areas to extremely high intensities for fine work. Highly polished Aluminum Alloy reflector; protected by easily removable glass cover held in place by detachable band. Handy focusing arrangement for controlling beam. Fully adjustable mounting bracket. Tapped ½ in.

Lamp, watts	Cat. No.	List price	Glass cover	Std. pkg.
60, 100	5603	$ 8.00	Clear glass	1
150, 200	5604	12.00	Stippled glass	1
150, 200	5632	13.30	Daylight glass	1
300, 500	5637	16.00	Stippled glass	1
300, 500	5639	19.00	Daylight glass	1

Schedule 2 discounts.

Benjamin Beam-Director Attachment



Quickly converts RLM dome reflectors of the overhead lighting system into supplementary lighting units, without affecting the reflector's general lighting efficiency. Provides a high candlepower beam of light to any point where additional illumination is needed on nearby work benches or machines. Adds 10 to 15 footcandles illumination over small areas 30 to 36 in. in diameter, 12 or 15 ft. away from the unit.

Shallow parabola reflector of etched Alzak Aluminum with cast aluminum bracket and thumb screws.

Cat. No.	List price	Description	Std. pkg.
5596*	$3.40	For attaching to 200-watt RLM domes	1
5598	4.30	For attaching to 300-500 watt RLM domes	1

Schedule 2 discounts.
*Also fits 200-watt domes using 300-watt medium base lamps.

Pit and Tunnel Lighting Units

Listed as vapor proof by Underwriters' Laboratories. Ruggedly constructed for built-in or surface installation. Units with refractor cover change direction of light; plain cover units do not change light direction. Porcelain Enameled Steel reflector. Body tapped ½ in. at both ends; other tapping available.


Cat. No. 5715

Lamp, watts	List price	Refractor Cover Cat. No.	Plain Cover Cat. No.	Dimen., in inches		
				Depth top to bot.	Lgth.	Width ft. to bk.
100, 150	$18.00	5715	5710	6½	12½	8⅜
200	20.00	5720	5717	7½	13	8⅜

Schedule 2 discounts.

Benjamin Mercury Lamp Units

This line of equipment for 250 and 400-watt mercury lamps provides an effective and economical means of obtaining high levels of illumination with minimum current consumption, in industrial locations where no need exists for color discrimination. A special transformer or reactor, which is not included with the unit must be provided for operation of the mercury lamp. Only a few reflector types are shown; write for bulletin giving the complete line.

Glassteel Diffuser for 250 and 400-Watt Mercury Lamps

For soft evenly diffused general illumination. Porcelain enameled steel reflector, with socket-reflector fittings tapped ½ in. standard or Turnlox detachable hoods. Pendent and angle Turnlox hoods tapped ½ in. standard. Ceiling hoods fit 4-in. standard boxes. Reflector finished white inside and outside.



Type of fittings	For 400-watt lamps			For 250-watt lamps		
	Cat. No.	List price	Dia., in.	Cat. No.	List price	Dia., in.
Turnlox Pendent	7203	$18.90	24½	7211	$12.90	20
Turnlox Ceiling	9203	18.90	24½	9211	12.90	20
Turnlox Angle	3203	18.90	24½	3211	12.90	20
Socket-reflector	5203	18.50	24½	5211	12.50	20

Schedule 2. Standard package 2 on 400-watt and 4 on 250-watt units.

20 in. Spread Dome for 400-Watt Mercury Lamps

For general interior lighting. Porcelain enameled steel dome reflector with 72½° angle of cut-off. Choice of socket-reflector fittings or Turnlox detachable hoods, as described for Glassteel Diffusers. Steel or cast aluminum neck on socket-reflectors. Reflector, green outside, white inside. Steel necks electro-plated.



Type	Cat. No.	List price	Dia., in.	Std. pkg.
Turnlox Pendent, steel neck	7480	$9.10	20	4
Turnlox Ceiling, steel neck	9480	9.10	20	4
Turnlox Angle, steel neck	3480	9.10	20	4
Socket-reflector, steel neck	5480	8.70	20	4
Socket-reflector, alum. neck	4480	9.80	20	4

Schedule 2 discounts.

22 in. Spread Dome for 400-Watt Mercury Lamps

Porcelain enameled steel reflectors for general interior lighting. The 78° cut-off (bottom of light source) is lowered to 61 degrees by an opal glass cylinder. Supplied with fittings described for Glassteel Diffusers; for neck construction and finish see 20-in. Dome units.



Type	Cat. No.	List price	Dia., in.	Std. pkg.
Turnlox Pendent, steel neck	7485	$9.10	22	4
Turnlox Ceiling, steel neck	9485	9.10	22	4
Turnlox Angle, steel neck	3485	9.10	22	4
Socket-reflector, steel neck	5485	8.70	22	4
Socket-reflector, alum. neck	4485	9.80	22	4

Schedule 2 discounts.

Concentrating Aluminum for 400-Watt Mercury Lamps

For lighting high narrow rooms where light must be concentrated on working plane. Reflectors, Alzak, oxidized, etched aluminum inside, natural aluminum outside. Supplied with either socket-reflector fittings tapped ½ in. standard or Turnlox hood; pendent and angle Turnlox hoods tapped ½ in.; ceiling fits 4-in. standard boxes. Steel or aluminum necks on socket-reflectors. Steel necks are electro-plated.

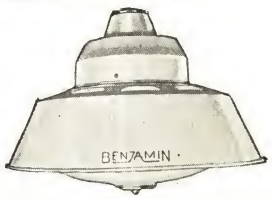


Type	Cat. No.	List price	Dia., in.	Std. pkg.
Turnlox Pendent, steel neck	7470	$16.90	18	4
Turnlox Ceiling, steel neck	9470	16.90	18	4
Turnlox Angle, steel neck	3470	16.90	18	4
Socket-reflector, steel neck	5470	16.50	18	4
Socket-reflector, alum. neck	4470	17.60	18	4

Schedule 2 discounts.

400-Watt Mercury Combination Diffusers

For best general lighting where more natural color rendition than is provided by the mercury lamp only is desired. Mixes the light from one 400-watt lamp and three 150 or 200-watt incandescent lamps. Porcelain enameled steel reflector with opal globe and porcelain hood tapped ½ in. Finish white.

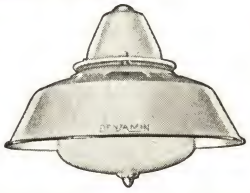


Number of lamps, type and size, watts	Cat. No.	List price	Dia., in.	Std. pkg.
One 400-W. mercury and three 150 or 200-W. incandescent lamps	5330	$24.90	24½	1

Schedule 2 discounts.

250-Watt Mercury Combination Diffusers

For best general illumination where it is desired to obtain light of greater color accuracy than is provided by the mercury lamp. Mixes the light from one 250-watt mercury lamp and one or more incandescent lamps. Porcelain enameled steel reflector and hood with opal glass globe. Fitting tapped ½ in.



Number of lamps, type, and size, watts	Cat. No.	List price	Dia., in.	Std. pkg.
1 250-w. mercury and 2 medium base incandescent	5301	$16.50	20	2
1 250-w. mercury and 1 mogul base incandescent	5305	16.50	20	2

Schedule 2 discounts.



No. 7253

Benjamin RLM "Silvered Bowl" Diffusers

Combining in one unit the ideal qualities of both porcelain enamel and Alzak aluminum reflecting surfaces, Benjamin RLM "Silvered Bowl" Diffusers utilize the distinctive indirect lighting properties of the silvered bowl incandescent lamp to provide soft, well diffused illumination characterized by a minimum of direct or reflected glare.

Porcelain enameled steel reflector with Alzak Aluminum Inner reflector; finished white inside and outside. Supplied with socket reflector "X" type fittings tapped ½ in. or with "Turnlox" or "Floor-Service" Turnlox construction. Pendent and Angle types tapped ½ in. standard; ceiling hoods fit 4-in. standard boxes.

For 300-500 Watt Silvered Bowl Lamps

Type of construction	Cat. No.	List price	Std. Pkg.	Dimensions inches Diam.	Dimensions inches Height	Shpg. wt., lbs. std. pkg.
"Socket-Reflector"	5253	$11.50	4	20	11 7/8	42
"Turnlox" Pendent	7253	11.90	4	20	13 5/8	43
"Turnlox" Ceiling	9253	11.90	4	20	13¼	43
"Turnlox" Angle	3253	11.90	4	20	14¼	43
"Floor-Turnlox" Pendent	47253	12.40	4	20	13 5/8	46
"Floor-Turnlox" Ceiling	49253	12.40	4	20	13¼	46

Schedule 2 discounts apply.

Aluminum Units for General Service Lamps

Concentrating reflectors for lighting high narrow rooms where not more than three rows of units are required. Reflectors are permanent Alzak, oxidized etched aluminum inside, aluminum outside. Supplied with socket-reflector fittings tapped ½ in. or Turnlox hoods. Turnlox pendent and angle hoods tapped ½ in.; ceiling hoods fit standard 3¼ or 4-in. round or octagonal boxes.

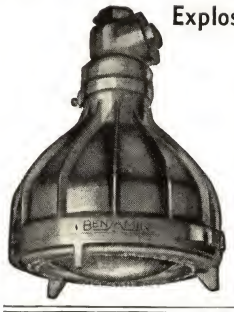


Cat. No. 4166

Type	For 300-500 watt lamps			For 750-1500 watt lamps			Std. pkg.
	Cat. No.	List price	Diam., inch.	Cat. No.	List price	Diam., inch.	
"Turnlox" Pendent	7166	$13.90	16	7168	$16.90	18	4
"Turnlox" Ceiling	9166	13.90	16	9168	16.90	18	4
"Turnlox" Angle	3166	13.90	16	3168	16.90	18	4
"Socket-Reflector"	4166	13.50	16	4168	16.50	18	4

Schedule 2 discounts.

Explosionproof Lighting Units



Interior Reflector Type

Class I, Group D—listed by Underwriters' Laboratories, Inc., for Class I, Group D, hazardous locations. Improved, totally enclosed reflector construction reduces amount of exposed glass.

Electro-plated cast iron hoods. Pendent hoods tapped ½ inch at $0.10 reduction in list price. Ceiling hood has 4-way tapping; 3 outlets with plugs. Ceiling and Angle Bracket hoods tapped ½ inch at a $0.30 reduction in list price.

Cat. No.	List Price	Lamp, watts	Type of hood	Std. pkg.
7520	$31.75	150, 200	Pendent	1
7521	36.25	150, 200	Ceiling	1
7523	38.25	150, 200	Angle	1

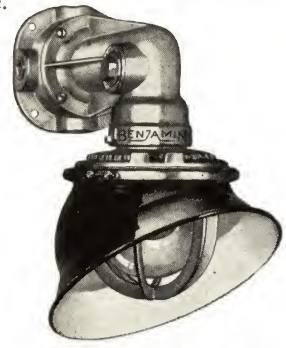
Schedule 2 discounts.

Exterior Reflector Type

Units for 75 to 200-watt lamps; same features as above, except provided with attachable porcelain enamel steel reflectors in dome, shallow dome bowl and symmetrical angle shapes. Tapped ¾ in.; for ½ in. see above.



Pendent Hood Type with Dome Reflector



Angle Bracket Type with Angle Reflector

Lamp, watts	Type hood	With guard less reflector		Complete with reflector and guard				
		Cat. No.	List price	Dome List price	Dome Cat. No.	*Shallow dome No.	†Bowl Cat. No.	Angle Cat. No.
75,100	Pendent	7501	$19.50	$22.25	7511	7515	7529	†7533
150	Pendent	7502	19.50	22.75	7512	7516	7530	†7534
200	Pendent	7503	28.00	31.75	7513	7517	.....	‡7535
75,100	Ceiling	7501-CX	24.00	26.75	7511-CX	7515-CX	7529-CX	†7533-CX
150	Ceiling	7502-CX	24.00	27.25	7512-CX	7516-CX	7530-CX	†7534-CX
200	Ceiling	7503-CX	32.50	36.25	7513-CX	7517-CX	.....	‡7535-CX
75,100	Angle	7501-BX	26.00	28.75	7511-BX	7515-BX	7529-BX	7533-BX
150	Angle	7502-BX	26.00	29.75	7512-BX	7516-BX	7530-BX	7534-BX
200	Angle	7503-BX	34.50	38.25	7513-BX	7517-BX	.....	7535-BX

Schedule 2 discounts. Standard package 1.
*Deduct 25¢ from dome price. †Add 25¢ to dome price. ‡Add 75¢ to dome price.

"Type 11-G" Dust-tight Units



No. 8500



No. 8517

Listed by Underwriters for Class II, Group G and Classes III and IV hazardous locations; also moisture and vaporproof. Highest quality equipment; thoroughly gasketed and supplied with cast aluminum hoods. Pendent hoods only; tapped ½-in. standard, ¾-in. when specified.

DOME REFLECTOR

Lamp, watts	Cat. No.	List price	Dia., in.
100	8500	$11.50	12
100	8500-HR	13.00	12
150, 200	8503	16.50	18

BOWL REFLECTOR

100	8506	$11.90	9
100	8506-HR	13.40	9

FLAT CONE REFLECTOR

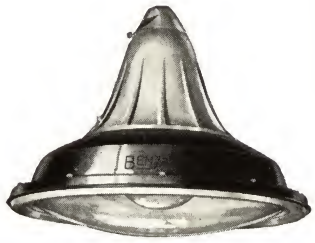
Lamp, watts	Cat. No.	List price	Dia., in.
100	8513	$11.50	14
100	8513-HR	13.00	14
150, 200	8515	15.40	18

ANGLE REFLECTOR

100	8517	$12.00	10
100	8517-HR	13.50	10

Schedule 2 discounts, Std. Pkg. 10. "HR," heat-resisting globes.

"Vapor-Seal" Units



Class II, Group G—Listed by Underwriters' Laboratories, Inc., for Class II, Group G, Hazardous locations — atmospheres containing grain dust, and similar inflammable mixtures.

Dome shape porcelain enameled steel reflector, with heat-resisting glass cover. Removable cast aluminum hoods carry socket and auxiliary inner reflector of oxidized aluminum.

Lamp, watts	Cat. No.	List price	Dia., in.	Std. pkg.
75,100	5650	$18.00	14	2
150	5651	20.00	14	2
200	5652	24.00	17¼	2
300, 500	5653	30.00	17¼	1

Schedule 2 discounts.

Benjamin "Type 11-G" Dust-tight and Moistureproof Units



No. 657

Listed by Underwriters for Class II, Group G and Class III and IV locations. One-piece copper casings with removable one-piece porcelain sockets. Globes sealed by asbestos gaskets; wire guard threads on to outside of casing.



No. 665

Lamp, watts	Cat. No.	List price	Description	Std. pkg.
25, 60	663	$2.10	Less guard.....	10
75, 100,150	665	2.65	Less guard.....	10
75, 100,150	665-HR	4.15	Less guard (heat-resis. globe).	10
75, 100,150	665-OP	3.15	Less guard (opal globe).....	10
25, 60	657	3.10	Complete with guard.....	10
75, 100,150	658	4.25	Complete with guard.....	10

Schedule 2 discounts.

Benjamin Industrial Lighting Vapolets



Pendent



Ceiling



Angle

Listed as vaporproof by Underwriters' Laboratories, Inc. Cast iron alloy bodies with conduit stops; finished sprayed aluminum over plating. Plain clear glass screw globes; aluminum alloy guards. One-piece Underwriters' listed composition receptacle seals body even if the globe is broken or removed.

PENDENT VAPOLETS—"A" TOP TAPPING

Lamp, watts	½-in. top tapping		¾-in. top tapping	
	Cat. No.	List price	Cat. No.	List price
15-40	7110A	$4.40	7120A	$4.45
50-100	7111A	4.50	7121A	4.55
100-200	7112A	5.40	7122A	5.45

CEILING VAPOLETS—"C" FEED-THRU TAPPING

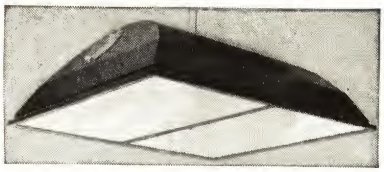
Lamp, watts	½-in. feed-thru tap		¾-in. feed-thru tap		1-in. feed-thru tap	
	Cat. No.	List price	Cat. No.	List price	Cat. No.	List price
15-40	7117C	$4.50	7127C	$4.60	7137C	$4.70
50-100	7113C	4.60	7123C	4.70	7133C	4.80
100-200	7114C	5.50	7124C	5.60	7134C	5.65

ANGLE VAPOLETS—"J" FEED-THRU TAPPING

Lamp, watts	½-in. feed-thru tapping		¾-in. feed-thru tapping	
	Cat. No.	List price	Cat. No.	List price
15-40	7119J	$5.05	7129J	$5.15
50-100	7115J	5.15	7125J	5.25
100-200	7116J	5.90	7126J	6.00

Schedule 11 discounts.
For other tapping arrangements see Benjamin Catalog No. 26.

Benjamin "Skylight" Unit



A large size diffusing unit of low-uniform surface brightness which provides an artificial luminous ceiling for local lighting. Ideal for lighting printers' imposing stones, inspection of plated material, drawing boards, etc. Porcelain enameled steel reflector with opal or daylight diffusing glass covers. Fitting tapped ¾ in. standard. Unit is easily relamped without removing glass cover.

Number and size of lamp, watts	Cat. No.	List price	Cover glass	Dimensions, in.		Std. pkg.
				Length	Width	
2 15- to 200-watt medium base lamp...	5618	$40.00	Opal	36	28	1
2 15- to 200-watt medium base lamp...	5618-D	45.00	Daylight	36	28	1

Schedule 2 discounts.

Benjamin Play Area Floodlight



Cat. No. 5752



Cat. No. 5754

A wide angle, open type diffusing floodlight combining a large porcelain enameled steel reflector with an inner reflector of oxidized aluminum. Provides strong illumination on the ground areas to the front and sides of the unit as well as improving illumination in the upper areas. Ideal for baseball, football, soft-ball, playgrounds, etc.

Easily adjustable—simple to install. Outside finish of the large reflector is green; inside is white. All exposed metal fittings are electro-plated. Supplied with either a 1½ or 2-in. iron pipe size slip fitter base or a cross arm bracket, either with or without pipe clamp. Reflector is 28½ in. long and 17½ in. from front to back.

Lamp watts	Cat. No.	List price	Descriptions
750-1500	5752	$31.00	With 1½-in. i. p. size opening
750-1500	5752-A	31.00	With 2-in. i. p. size opening
750-1500	5751	29.00	With cross arm bracket
750-1500	5754	30.00	Cross arm bracket and pipe clamp

Schedule 7 discounts.

Benjamin "Ellipto-Lite" Floodlight



Cat. No. 5774

A wide angle open type diffusing floodlight combining a porcelain enameled reflector of elliptical shape with an inner reflector of oxidized aluminum. Ideal for lighting the smaller type of outdoor recreational areas. Detachable hood construction simplifies wiring and cleaning. Reflector can be rotated in the hood to the most desirable position. Wide vertical range.

Reflector is green outside, white inside. Hood is electro-plated.

300-500 Watt		Description	750-1500 Watt	
Cat. No.	List price		Cat. No.	List price
5770	$17.00	Pendent hood tapped ¾ in.	5970	$18.00
5771	19.00	Cross arm bracket for 4¼ in. cross arms	5971	20.00
5777	20.00	Cross arm and pipe clamp for 1 to 2 in. pipe	5977	21.00
5774	21.00	Slip fitter for 1½-in. pipe	5975	22.00

Schedule 7 discounts.

Benjamin "Stock-Bin-Lite" Reflectors



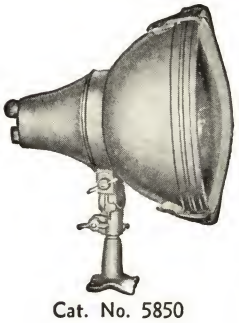
Designed to provide uniform illumination from top to bottom of rows of books, shelving filing cabinets, etc. The lamp is carefully shielded to prevent glare when looking down aisles.

Porcelain enameled steel reflector with a choice of four styles of removable hoods. Finished white inside and outside. All hoods, except ceiling, tapped ½ in., ceiling head fits 4-in. box.

Lamp, watts	Complete with following hood						Std. pkg.
	Pendent Cat. No.	Ceiling Cat. No.	Angle Cat. No.	List price	Feed-through Cat. No.	Feed-through List price	
60	E1875	C1875	L1875	$3.50	T1875	$3.65	10
75, 100	E1876	C1876	L1876	3.75	T1876	3.90	10
150	E1877	C1877	L1877	4.00	T1877	4.15	10

Schedule 2 discounts.

Benjamin Floodlighting Projectors



Cat. No. 5850

Housings are made of aluminum. Ventilation is unnecessary and the interior is sealed. Reflectors are of glass, silver plated, while glass covers are heat-resisting.

Completely adjustable — easily attached. The beam spread is controlled by a knob outside the housing. Wiring connections are made outside the housing.

Color plates, visors, louvers, stops, supplied at additional cost. See accessories listed below and in Benjamin *Catalog No. 26.*

Cat. No.	List price	Cover style	Outside dimensions of floodlight, in.		
			Diameter	*Over-all height	Depth front to back
Model RD 11—With 11-in. Diameter Reflector For 250-watt Floodlighting Lamps and 200-watt General Service Lamps					
5825	$34.00	Plain	13	17	15
5826	34.00	Stippled	13	17	15
5827	34.00	Ribbed	13	17	15
Model RD 14—With 14¼-in. Diameter Universal Service Reflector For 300 to 500-watt General Service, 500-watt Floodlighting Lamps					
5850	$60.00	Plain	16¼	21¾	17½
5851	60.00	Stippled	16¼	21¾	17½
5852	60.00	Ribbed	16¼	21¾	17½
Model RD 18—With 18-in. Diameter Universal Service Reflector For 750 to 1000-watt General Service, 1000-watt Floodlighting Lamps					
5875	$85.00	Plain	20¼	26½	21
5876	85.00	Stippled	20¼	26½	21
5877	85.00	Ribbed	20¼	26½	21
Model RD 20—With 20-in. Diameter Universal Service Reflector For 1500-watt General Service, and 1500-watt Floodlighting Lamps					
5892	$140.00	Plain	22⅜	28⅝	22⅛
5893	140.00	Stippled	22⅜	28⅝	22⅛
5894	140.00	Ribbed	22⅜	28⅝	22⅛

Schedule 7 discounts. *With lamp in horizontal position.

ACCESSORIES

Description	For Model RD 11		For Model RD 14		For Model RD 18		For Model RD 20	
	Cat. No.	List price	Cat. No.	List price	Cat. No.	List price	Cat. No.	List price
Color plate, red	5831	$6.00	5861	$9.00	5881	$13.00	5839	$30.00
Color plate, green	5832	6.00	5862	9.00	5882	13.00	5828	30.00
Color plate, amber	5833	6.00	5863	9.00	5883	13.00	5829	30.00
Color plate, blue	5834	6.00	5864	9.00	5884	13.00	5830	30.00
Aluminum visor	5840	3.00	5870	5.00	5890	7.00	5880	10.00
Circular louver	5841	6.75	5871	10.00	5891	10.00	5835	17.00
Pipe clamp	5846	1.00	5846	1.00	5896	1.10	5896	1.10

Schedule 7 discounts.

BRIGHT LIGHT REFLECTOR CO., INC.

ESTABLISHED 1921

Manufacturers of Commercial and Industrial Lighting Equipment

Metropolitan and Morgan Avenues

BROOKLYN, N. Y.

TELEPHONE
EVergreen 8-6068

SALES OFFICES

ATLANTA CHICAGO DALLAS KANSAS CITY MINNEAPOLIS ST. LOUIS
BOSTON CLEVELAND DETROIT LOS ANGELES PITTSBURGH SAN FRANCISCO

Silver Mirrored SILV-A-KING SHOW WINDOW REFLECTORS *Crystal Glass*

Silv-A-King Show Window Reflectors are scientifically designed for efficient window illumination. They are silvered, copper-plated and finished with two coats of specially prepared silver bronze, creating unexcelled efficiency and durability. The holder is constructed to permit the use of two sizes of lamps with the same reflector by loosening the screws and extending the holder to full length. This holder may be attached to brass shell or porcelain socket. Types 110, 130 and 510 are recommended for "flush type" mounting using ceiling rings. Each unit individually packed in a corrugated container to facilitate handling and to prevent breakage.

For Deep Windows



Cat. No.	Lamp size, watts	Diam., in.	List price
105	100–150	8⅜	$3.50
115	150–200	* 9⅛x 9⅛	4.00
135	150–200	9½	4.00
505	300–500	*12 x12⅜	9.25

For Shallow Windows



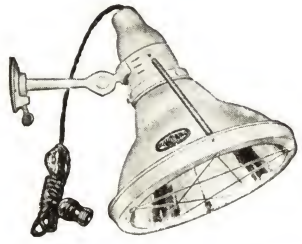
Cat. No.	Lamp size, watts	Diam., in.	List price
110	100–150	8⅜	$3.50
120	150–200	* 9 x 9⅝	4.00
130	150–200	9½	4.00
510	300–500	12⅜	9.25

Auxiliary Reflectors



Cat. No.	Lamp size, watts	Diam., in.	List price
125	150–200	10	$4.50
150	150–200	10	4.50
550	300–500	12⅜	8.75

Spotlights and Floodlights



Cat. No.	Lamp size, watts	Diam., in.	List price
200	150–200	10½	$ 9.50
250	150–200	10½	9.50
350	300	12⅜	11.75
500	500	13⅜	13.75

*Eccentric in shape. Louvre equipment and plaster flanges cannot be furnished.

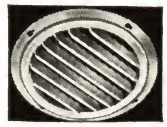
FLUSH MOUNTING ACCESSORIES



Ceiling Flange



Flush Concentric Louvre



Flush Parallel Louvre



Plaster Flange



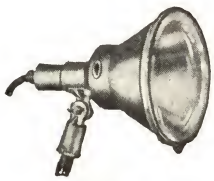
Typical Show Windows Illuminated with Silv-A-King Reflectors

SILV-A-KING FLOOD-LIGHTING EQUIPMENT

Aluminum Enclosed Type



2500



7750

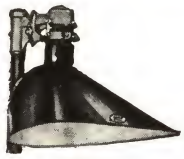


1500

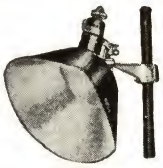
Porcelain Enameled Open Type



4700



6750
Super Service



3750

Cat. No.	Lamp size, watts	Diam., in.	List price
*1200	75-100	8½	$ 5.85
*1500	150-200	10	9.50
*2500	300-500	12	16.75
*7500	300-500	12	22.00
7750	750-1500	15½	32.00

*Colored lenses (Red, Green, Amber, Blue) available. Prices may be obtained upon application.

Porcelain Enameled Island Light



19500

Cat. No.	Lamp size, watts	Diam., in.	List price
19200	200	20	$11.00
19500	300-500	20	11.50
19700	750-1000	24	13.00
19750	750-1500	27	18.00

Cat. No.	Lamp size, watts	Dim., in.	List price
3300	300-500	15x16	$12.75
3750	750-1500	16x18	17.00
4300	300-500	15x16	14.50
4700	750-1500	16x18	19.00
5300	300-500	19x20	20.00
5750	750-1500	25x24	26.00
6300	300-500	19x20	22.00
6750	750-1500	25x24	28.00

Alzak or oxidized Aluminum Inner Beam Projectors available for the above units.

SILV-A-KING INDUSTRIAL LIGHTING EQUIPMENT

Glassteel Diffusers

R.R. Threaded Type With Pendant Hood



"Speed-Lox" Type With Pendant Hood



For the very best results in the general illumination of industrial interiors. The use of "Speed-Lox" type equipment allows easy removal of reflectors for cleaning and relamping.

Cat. No.	Lamp size, watts	Dia. in.	Type globe	List price
1518	150-200	18	Opal	$9.00
1518B	150-200	18	Dayl't	9.50
1520	300-500	20	Opal	12.50
1520B	300-500	20	Dayl't	13.25

Cat. No.	Lamp size, watts	Dia. in.	Type globe	List price
21518	150-200	18	Opal	$9.30
21518B	150-200	18	Dayl't	9.80
21520	300-500	20	Opal	12.90
21520B	300-500	20	Dayl't	13.65
21524	750-1500	24	Opal	18.90
21524B	750-1500	24	Dayl't	20.65

All glassteel diffusers are regularly furnished in open type, unless closed type is specified.

Standard Dome Reflectors

Socket Type



"Speed-Lox" Type



For good general illumination of industrial interiors. "Speed-Lox" easily attached hoods are available in angle, ceiling or pendant (as illustrated) iron castings.

Cat. No.	Lamp size, watts	Dia., in.	List price
512	60-100	12	$3.20
514	150	14	3.50
516	200	16	4.10
518	300-500	18	5.30
522	750-1500	22	7.20

Cat. No.	Lamp size, watts	Dia., in.	List price
24512	75-100	12	$3.50
24514	150	14	3.80
24516	200	16	4.40
24518	300-500	18	5.70
24522	750-1500	22	7.50

X Type



Vapor-Proof Units

For use where deteriorating conditions such as acid fumes, steam, moisture and smoke are prevalent. Listed as Vapor-proof by the Underwriters' Laboratories, N.E.C. standard.

Pendent Type



Cat. No.	Lamp size, watts	Dia., in.	List price
8512	75-100	12	$7.35
8514	150	14	8.75
8516	200	16	9.25

Cat. No.	Lamp size, watts	Dia., in.	List price
7612	75-100	12	$7.25
7616	150-200	16	8.90

X Type Units are tapped four ways and are furnished with three plugs, making this unit adaptable and universal for all installations.

Mercury-Vapor Units



Presenting a complete line of lighting equipment for the 250-watt and 400 watt, Type H, mercury-vapor lamp. Line consists of glassteel diffuser standard dome, deep bowl, circular angle and rectangular angle reflectors.



Cat. No.	Lamp size, watts	Dia., in.	List price
94518	250	18	$9.70
94522	400	22	9.00

Cat. No.	Lamp size, watts	Dia., in.	List price
94920	250	12	$9.60
94950	400	18	9.10

Combination Mercury Units



Silv-A-King presents a complete line of combination mercury-vapor and incandescent lighting equipment as its contribution to the latest developments in the field of high intensity industrial lighting. Units are constructed to take one mercury lamp and three incandescent lamps.



Cat. No.	Lamp size	Dia., in.	List price
97518	(1) 250 watt mercury vapor (3) 75-150 watt incandescent	18	$12.50
97522	(1) 400 watt mercury vapor (3) 100-200 watt incandescent	22	14.70

Cat. No.	Lamp size	Dia., in.	List price
97520	(1) 250 watt mercury vapor (3) 75-150 watt incandescent	20	$16.50.
97524	(1) 400 watt mercury vapor (3) 100-200 watt incandescent	24	24.90

Sign Lighting Equipment

Circular Angle



Rectangular Angle



Silv-A-King sign-lighting equipment has been designed to provide an efficient, uniform illumination. Some of its features are a bayonet type socket housing, which makes it easy to remove reflector for cleaning, and a patented armored socket.

Cat. No.	Lamp size, watts	Dia., in.	List price
Vertical Fitting			
600	60-100	8	$2.20
610	150-200	10½	2.50
620	300-500	12	4.50
650	750-1500	16	7.60
Horizontal Fitting			
605	60-100	8	2.20
615	150-200	10½	2.50

Cat. No.	Lamp size, watts	Dim., in.	List price
Vertical Fitting			
800	60-100	6¾x 8¼	$2.50
810	150-200	9¼x10¾	3.60
820	300-500	11x13	6.15
850	750-1500	15x16	9.25
Horizontal Fitting			
805	60-100	6¾x 8¼	2.50
815	150-200	9¼x10¾	3.60

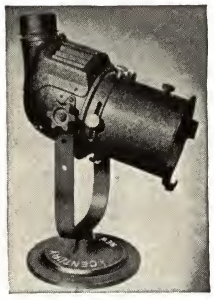
CENTURY LIGHTING, INC.

Manufacturers of Theatrical, Architectural, Store and Photographic Lighting Equipment

419 West 55th Street, NEW YORK, N. Y.
CABLE ADDRESS: LEKOLITE

Century Lekolites

Precision Beam Control Instruments—The Lekolite provides a sharply controlled beam of high intensity. A 500 watt Lekolite is equal in Lumen output to a 2000 watt Standard Conventional Spotlight.



No. 1591. 100-500 Watt, 6-In. Lens



Precision Beam Control with Lekolites

Lekolites are available with any one of the following controls: (1) Built-in Iris Shutter; (2) Template Forms—three Circular Shutters, one Four-Way Shutter; (3) Built-in iris independently operated with built-in vertical and horizontal shutters operated in pairs. Gate arranged for rapid swivel for oblique shaping; (4) Four built-in independently operated vertical and horizontal shutters with swivel device for oblique shaping of beam; (5) Built-in independently operated iris and four built-in independently operated vertical and horizontal shutters with swivel for oblique-circular-rectangular shaping of beam. The wattage range is from 100 to 2000, and the lens diameters are 4½, 6 and 8 in. Equipped with Alzak reflectors.

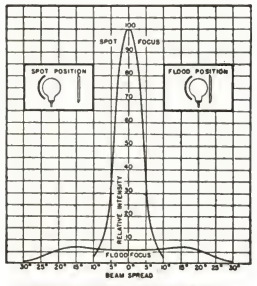
Applications—Theatre, moving picture studios, still photographic work, dance floors, night clubs, window lighting, art galleries and museums, outdoor precision floodlighting.

Also recessed Lekolites and low voltage units employing transformers.

Century Fresnelites

Fresnelite Characteristics—High intensity, narrow beams and flood beams, soft edge even when matted, smooth field, three times as efficient as the conventional spotlights. Century heat resisting Fresnelens have adjustable focus and direction mounting.





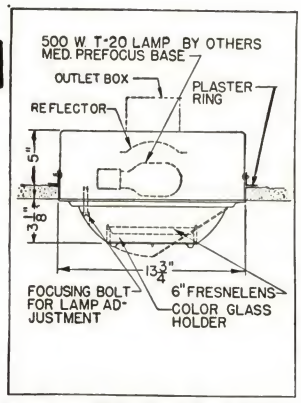
CHARACTERISTIC PERFORMANCES

Applications—Theatre—small, medium and large stages, photographic studies, night clubs, floodlighting, store windows, window lighting.

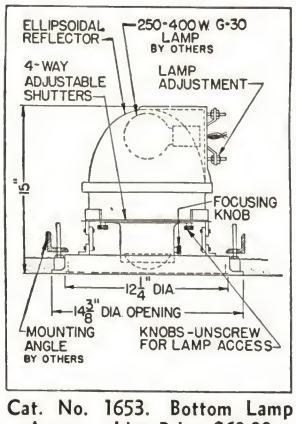
Century Project-O-Lites

Designed to throw a precise beam of high intensity from a concealed source on the important object in the line of vision. The Ceiling Fresnelite (illustrated in the drawing above) is a semi-exposed or surface type Project-O-lite with a soft-edge beam, used to accent free standing displays.

Applications—Showrooms, theatres, department stores, night clubs, restaurants, art galleries and museums, etc.



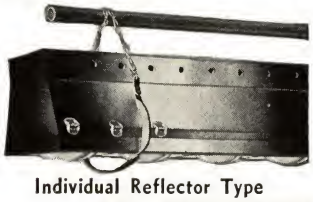
Cat. No. 498. Semi-Exp. Type. List Price $48.00



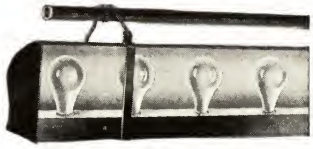
Cat. No. 1653. Bottom Lamp Access. List Price $60.00

Century Borderlights and Footlights

Individual Reflector Type—Individual reflectors. Chain hangers. Scenery guards. Heat resisting colored glass roundels with spring ring holders. (Combination filter holders available at additional cost.) Splice box for feed cables.



Individual Reflector Type



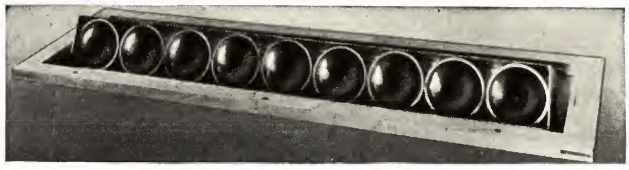
Continuous Reflector Type

DATA, CENTURY BORDERLIGHTS AND FOOTLIGHTS

Cat. No.	Type reflector	Outlet centers, in. Inches	Wattage	Price, per ft.
	Individual Reflector Type			
450	Alzak	6	75–150	$7.00
451	Chromium	6	75–150	7.00
452	Aluminum	6	75–150	6.00
455	Alzak	8	200	10.00
456	Chromium	8	200	8.00
457	Aluminum	8	200	7.00
460	Alzak	12	300–500	12.00
461	Chromium	12	300–500	9.00
462	Aluminum	12	300–500	8.00
	Continuous Reflector Type			
400	Non-fade white or aluminum paint			$3.10
401	Matte aluminum stripping			4.35
402	Chromium plated stripping			5.65
403	Alzak aluminum stripping			5.00

Disappearing Footlights

Made in standard 5-ft. sections. Kiln-dry maple wood trims. Mercury disconnect switches (on and off). Splice box for leads.



Individual Reflector Type

Cat. No.	Type reflector	No. of Outlets	Wattage	Price per section
842	Chromium	9	75–150	$73.00
843	Alzak	9	75–150	75.00
844	Aluminum	9	75–150	68.00
845	Chromium	12	75–100	70.00
846	Alzak	12	75–100	72.00
847	Aluminum	12	75–100	65.00
	Continuous Reflecting Surface—2-Piece Wood Covers			
811	White paint	15	25–100	$50.00
811A	Alzak stripping	15	25–100	60.00
811C	Chromium stripping	15	25–100	55.00

DAY-BRITE LIGHTING INC.

5401 Bulwer Avenue, ST. LOUIS, MO.

REPRESENTATIVES IN PRINCIPAL CITIES

LIGHTING EQUIPMENT FOR STORES, BANKS, SCHOOLS, HOSPITALS, HOMES, THEATERS, INDUSTRIAL PLANTS, DISPLAY CASES, PUBLIC BUILDING, ETC.

Ceiling Fixtures With Holophane Controlens—Day-Brite manufactures a complete line of Controlens fixtures for recessed, semi-exposed and exposed mounting in a variety of shapes, sizes and metals. Each installation is engineered to specific requirements. For use in stores, schools, auditoriums, public buildings, etc.

Hospital Lighting—Day-Brite Multi-Beam Operating Lights with Holophane Controlens meet all of the rigid requirements for controlled high-intensity lighting as is needed for this type of work. Aisle, Corridor and Signal lights are sturdily constructed and are available in several sizes and finishes.

Industrial Lighting—The Day-Brite line of industrial fixtures includes three types of light hoods for close visual work that can be used as units or in continuous hook-ups. The "Super-Lume" fixture is employed for general lighting and provides glare-free illumination by eliminating the harsh contrasts between the light source and the surrounding area. Pit, Step, and Tunnel Reflectors are manufactured in various sizes and supplied with "Tuf-flex" heat-resisting glass and guards.

Electric Signs—A complete line of Exit and directional signs is manufactured by Day-Brite and are available in bronze and steel in various finishes.

Recessed Fixures for General Lighting—For schools, offices, public buildings, stores, homes, etc. Made in a range of sizes in square, rectangular and circular shapes. Frames are supplied in various metals and finishes to match interior decorations.

Indirect Troughs—For Type A and Lumiline lamps; in steel, bronze and aluminum. Fixtures designed and engineered to meet specific requirements.

Cove Lighting—Illustrated are three types of standard equipment. For smaller installations in lobbies and rooms the troughs using Lumiline or Type A lamps are recommended. For larger installations assemblies of spun ALZAK reflectors of narrow or wide spread beam type with or without heat-resisting color roundels are provided.

Lumiline "Chan-L-ite"—A complete decorative lighting system for Lumiline lamps is provided in the "Chan-L-ite" for coves, niches, shadow boxes, etc. Two types of porcelain enameled reflectors and a chromium plated cover are available with snap-on arrangements for easy installation. Fittings include End Caps, Service Boxes, Couplings, Adjustable Elbows, and Blank Capping.

Lighting Strip—Similar to "Chan-L-ite," but supplied with porcelain sockets at variable spacings for Type A lamps. Can be used for illuminating coves, silhouette signs, etc. Fittings are similar to those used for "Chan-L-ite" System.

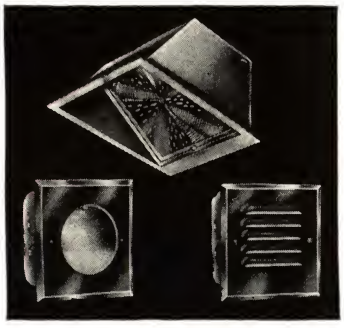
Stage Lighting—Day-Brite Borderlights and Footlights are manufactured in the individual ALZAK reflector type with heat-resisting color roundels or, for smaller installations, open trough type for bare lamps. Available in disappearing 5-ft. sections and continuous type.

Engineering Service—Day-Brite maintains a staff of illuminating engineers who are at all times ready and willing to recommend and design the correct type of equipment for your lighting installations. This service is offered to you without any obligation whatsoever.

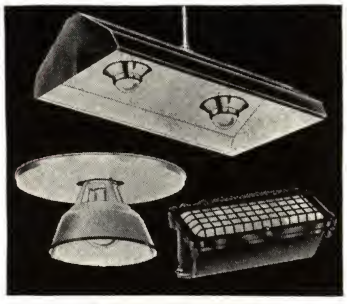
Write now for complete catalog.



Ceiling Fixtures
With holophane controlens



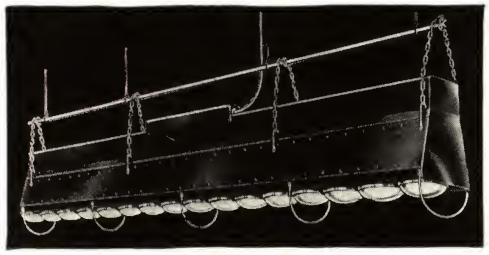
Hospital Lighting



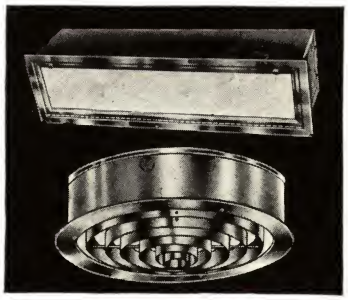
Industrial Lighting



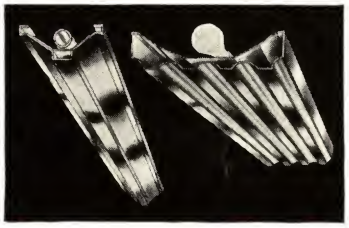
Electric Signs



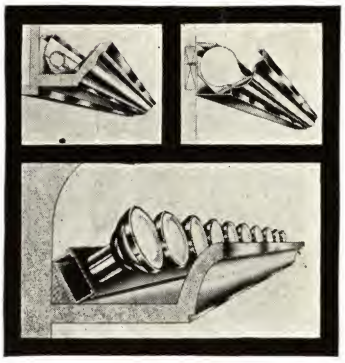
Border Lights



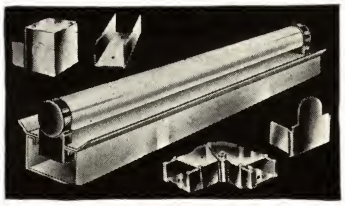
Recessed Fixtures
For general lighting



Indirect Troughs



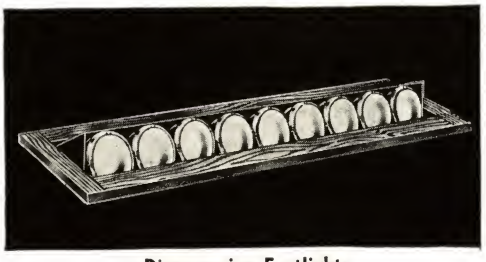
Cove Lighting



Lumiline Chan-L-ite



Lighting Strip



Disappearing Footlights

ERIKSON ELECTRIC COMPANY

Specialized Lighting Equipment

6 Power House Street, BOSTON, MASS.

SALES REPRESENTATIVES MAINTAINED IN THE PRINCIPAL CITIES

THE COMPANY

Erikson Electric Company are designers and manufacturers of lighting equipment for all types of special applications. Over forty years of national experience in production of built-to-order equipment, for both architectural and commercial applications, have enabled this company to perfect the manufacturing technique peculiar to this type of product.

ENGINEERING

This organization is ideally equipped to suggest the most suitable system of illumination to harmonize with a particular architectural treatment, and to work out such details as: determination of desirable intensity, balance of light distribution to eliminate or produce shadows as the case may require, color modification to suit theme of the design, together with necessary structural and electrical details. This service is particularly valuable to the architect in connection with use of light as a decorative medium in modern architectural design.

PRODUCTS

The diversified nature of the products of this company, which range from simplified wiring strips to elaborate systems of reflector and lens combinations, makes it possible to select equipment best suited to individual requirements.

PUBLICATIONS AND SERVICE

A new 80-page catalog, devoted to special lighting equipment and its application, is now available.

Facilities of our Engineering Department are available for the development of new products incorporating the new Fluorescent lamps, low pressure Mercury tubes, and the use of Polaroid in lighting equipment for:

Auditoriums	Gymnasiums	Schools
Banks	Hospitals	Stores
Churches	Offices	Temples
Galleries	Prisons	Theatres

RECENT ERIKSON INSTALLATIONS



Hayden Planetarium, New York, N. Y.



Auditorium of the Georgetown School, Georgetown, Del.



J. L. Hudson Co., Detroit, Mich.



New York Central R.R. Waiting Room, Syracuse, N. Y.

GOODRICH ELECTRIC COMPANY

Manufacturers of Industrial, Commercial and Floodlighting Equipment

TELEPHONE
Bittersweet 8200

GENERAL OFFICES AND FACTORY
2912 North Oakley Avenue, CHICAGO, ILL.

Products

Goodrich offers a complete line of porcelain enameled reflectors for indoor and outdoor service; floodlights, mercury vapor lamp and vaporproof fixtures, etc.; as well as reflectors with exclusive mechanical features.

Catalogs

In addition to a general catalog on the complete line, literature is also available covering special lighting equipment for various industrial requirements. Copies may be had upon application to the home office in Chicago.

Diskonect R.L.M. Dome Reflectors

Offered in six sizes from 12 to 20 in. in diameter to accommodate





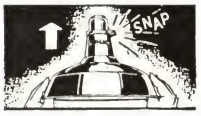
lamps ranging from 60 to 1500 watts. Porcelain enameled reflector and lamp disconnect from the hood as a complete unit without disturbing the wiring.



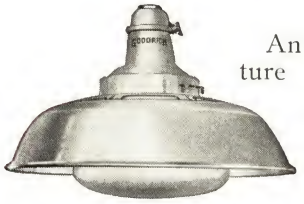
Goodrich Diskonect

Left: A slight lift of the plunger releases reflector and lamp from hood.

Right: A snap of the plunger tells it is securely attached.



Glassteel Diffusers



An efficient general lighting fixture with glass diffusing globe which eliminates sharp shadows, provides a soft, evenly diffused light. Apertures in the top of the reflector permit a part of the light to reach the ceiling.

Outlet-Box Reflectors



To meet limited headroom conditions. Goodrich standard and shallow dome styles are the closest mounting reflectors on the market. Socket fits standard outlet box. Sizes up to 16-in. diameter for basements, ramp garages, mezzanines, tunnels, etc. See catalog for complete information.

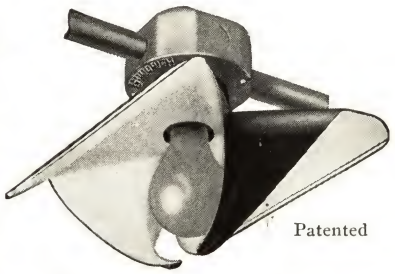
Keystone Sign Reflectors



For the lighting of square or rectangular signs. Cuts light to fit form of sign, spreads an even, well diffused light over the entire surface without waste at edges or corners. Lamp burns in normal, vertical position with the Goodrich resilient socket, prolongs life of lamp, reduces maintenance.

The Stocklite

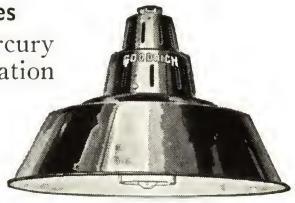
For Better Stock Bin Illumination



Patented

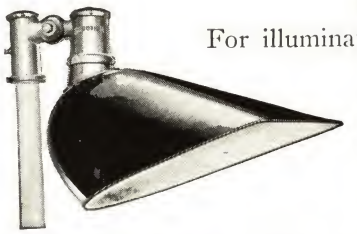
An exclusive Goodrich product. Because of its ingenious design, reflector throws light to sides to illuminate shelf surfaces from top to bottom while the curved V-shaped flange eliminates aisle glare. Makes it possible to identify small parts numbers, read stock sheets, typewritten orders, etc; with uniform illumination in the aisles. An important improvement in stock bin illumination which speeds up handling—cuts handling costs. Write for folder or see Goodrich general catalog for complete details.

Mercury Vapor Lamp Fixtures



Offered in styles for mercury vapor lamps and for combination mercury vapor and incandescent lamps. Various sizes available for high, medium and low bay mounting, and for 250 and 400-watt mercury vapor lamps. Fixtures supplied in porcelain enamel and Durak aluminum. See general catalog.

Floodlights



For illuminating large areas at small cost. Deliver a bright, evenly diffused light for illumination of gasoline stations, athletic fields, parking lots, freight yards, etc. Offered in styles and sizes with a choice of mountings. Write for folder on floodlighting or see Goodrich general catalog for full details.

Goodrich Standlites



Deliver high intensity of illumination, ideal for gasoline service stations, pump islands, parking lots driveways, entrances, yards, platforms, etc. Complete information on request. Ask for catalog No. 62.

ESTABLISHED 1898

GARCY REFLECTORS DIVISION

OF GARDEN CITY PLATING & MFG. CO., INC.

Corner Ogden Boulevard and South Talman Avenue

CHICAGO, ILL.

NEW YORK OFFICE and WAREHOUSE, 133 Wooster Street

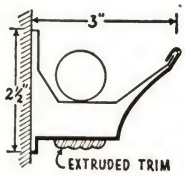
REPRESENTATIVES IN PRINCIPAL CITIES

For our pages on Ornamental Metal Work, Adjustable Shelving Hardware, Drawer Slides, see File Index

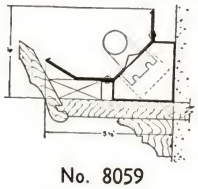
COVE LIGHTING, TROUGH LIGHTING, STRIP LIGHTING

Fluorescent Cove Lighting

Mast cove lighting trough reflectors are Garcy products, such as No. F16282 (right), No. 8059 (below). Both are for fluorescent lamps and have adequate space auxiliaries in the wire channels. Any lamp spacing obtainable. Write for Bulletin 38-110 for details. For more cove lighting see Catalog 36. Interior of troughs are Garlite reflecting surface, scientifically fabricated to produce most efficient lighting for specific jobs. Therefore, architects should state room dimensions when writing for free engineering layout. Curved sections are a Garcy specialty.



No. F16282



No. 8059

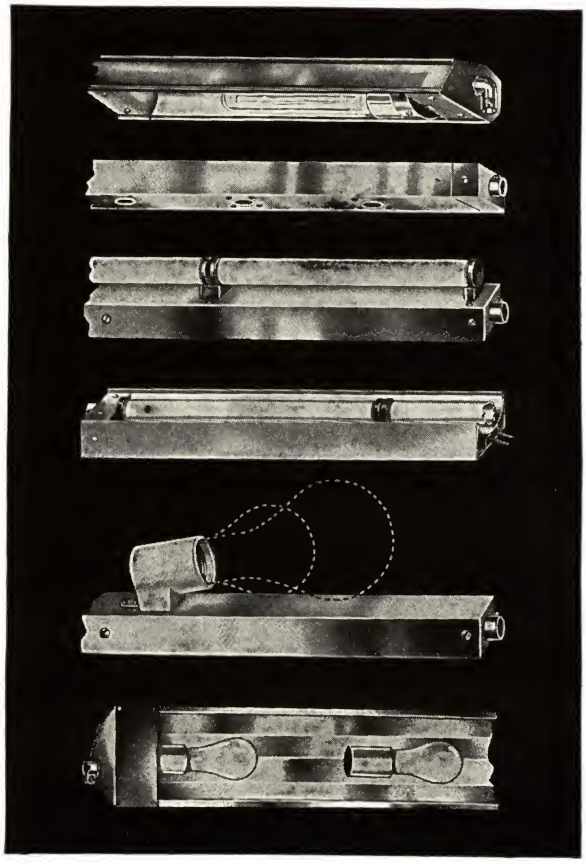


Typical Garcy Cove Lighting Installation for Louis Mazor & Son, Baltimore, Md.

E. Paul Behles and Associates, Architects

Beautifully illuminated ceiling is accomplished by Garcy cove lighting reflectors

Tubular and Pear Shaped Lamps



(1) No. **3302** is the most popular show case reflector for intermediate base lamps. Has 1½-in. face. Also made for lumiline (No. **3199**) and T-10 (No. **3196**) lamps, 2 in. face.

(2) No. **6596.** Any socket spacing. Alzak reflectors can be attached. Recommended for show window lighting. Size, 1¾ in. x 2½ in. wide.

(3) No. **6867** lumiline lamp channels completely wired and assembled. Splice pockets at each end. Size, 1¾ in. x ⅝ in.

(4) No. **6861** lumiline light reflecting strips. Has Garlite reflecting surface. Size, 2½ in. x 1⅛ in.

(5) No. **6865** lamps 25 to 200 watts fit snug to raceway. The all-purpose raceway completely wired, ready to install. Splice pockets, each end, every section. Size 1¼ in. x ⅝ in. No. **6864** is 1¾ in. x 1⅜ in.

(6) No. **N3050** for continuous trough reflector lighting. Any socket spacing, any length. Wired with splice pockets at each end. 3½-in. face. 32 similar standard shapes, page 13, Catalog 36.

(7) No. **8000** fluorescent strip lighting raceway (illustrated in Bulletin 38-110), is similar to No. 6867. Auxiliaries are contained in channel. Size of raceway is 1¾ in. high, 2½ in. wide.

(8) No. **8001** fluorescent strip lighting raceway with symmetric or asymmetric reflector, otherwise same as No. 8000. (Illustrated in Bulletin 38-110). Channel size is 1¾ in. high, 2½ in. wide.

Fluorescent Lighting Catalog

A comprehensive line of lighting fixtures have been developed, utilizing the new Fluorescent lamp. Complete data will be found in the new illustrated Bulletin 38-110. Write for your copy.

Engineering and Designing Service

A planning service is maintained for the convenience of architects and designers. Suggested treatments and working details for the illumination of any project will be furnished without obligation.

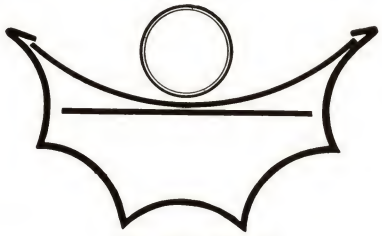
New Designs in "Trough Indirects" for Fluorescent Lumiline Lamps and Standard Lamps



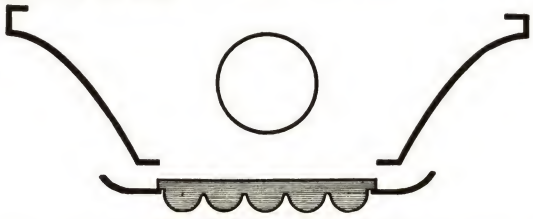
No. 7561 Semi-Indirect
Has curved opal glass bottom with decorative cast supports. Depth is 6 in., width is 13½ in. For lamps up to 100 watts



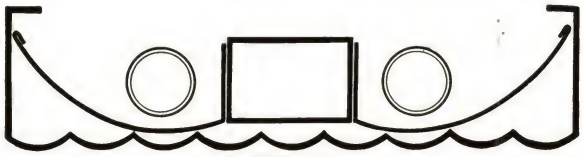
No. 7559 Indirect
With spill light illuminating sides. Depth is 5 in., width 14 in. Furnished any finish metal. For lamps up to 100 watts



No. 7560 Indirect
For fluorescent lamps. Formed metal housing. Wire channel accommodates necessary control equipment. Depth 3 in., width 6 in. Furnished in any metal or finish.



No. 7558 Semi-Indirect
With spill light and glass plaque bottom. Depth 6¼ in., width 16¼ in. For lamps up to 100 watts



No. 7557 Indirect
For 2 rows of fluorescent lamps. Center wire channel contains control equipment. Furnished in any metal or finish. Depth, 2¼ in., width 9 in.

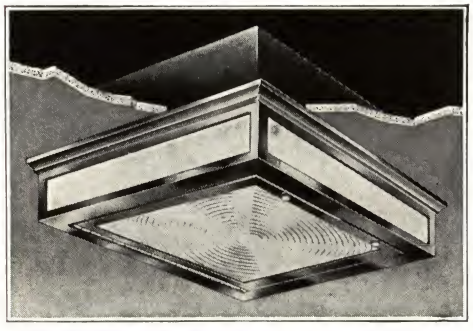
For types of ends and hangers for above troughs, see our Catalog 36, Page 61



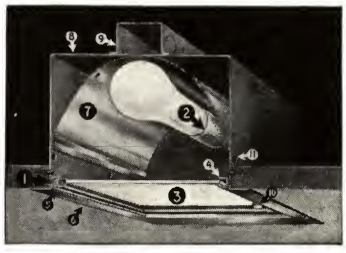
The Aristocrat No. 6668
A stock fixture of extruded and cast aluminum with curved glass. Unit is 17 in. wide, 35 in. long. Frame hinges down for relamping. Also furnished in continuous lengths for "line of light" effects. No. 6669, 10 in. wide, 18 in. long. Typical installation, Foley Brothers, Houston, Tex.; industrial plant, Lever Bros., Hammond, Ind.

No. 6540
12-in. glass bowl with satin-finished fitter mounted to ceiling. Has louver at bottom for direct light. For all low ceiling heights. Takes one 200 or 300-watt lamp

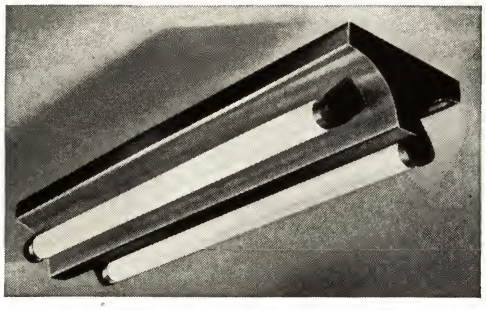
Controlens Luminaire No. C6845-2
A surface mounted fixture of beautiful lines. Flashed opal glass sides, metal lustrous finish, with lens plates bottom for maximum efficiency. Typical installations: Marshall Field & Co., Chicago; M. O'Neil Co., Akron; Arizona Trust Co., Tucson; Wm. Taylor Co., Cleveland



Controlens Lighting No. 6831
Typical of luminaires illustrated in Section C, Catalog 36. Lenses control light. Typical installations are: Boston Store, Milwaukee; Feller Co., Harrisburg; Peoples Drug, Norfolk, Va.



Flush Recessed Light Boxes No. 6210
Easily installed; has hinged frame; maximum efficiency reflector. Furnished for plaster and other types of ceilings. No lamp spots; ample ventilation diffusing glass, or lenses, 29 standard stock sizes available



No. 8012 Decorative Fluorescent Unit
For 2 rows of fluorescent lamps. Fixture contains necessary auxiliaries. Available in units 3 in. longer than lamp size used, or in continuous lengths. These fixtures are satin chrome finish. Can also be had with ceiling hanger suspension

HOLOPHANE COMPANY, INC.

Illuminating Engineers and Manufacturers of Scientific Lighting Equipment

342 Madison Avenue, NEW YORK, N. Y.

THE HOLOPHANE COMPANY, LTD., 385 Yonge Street, TORONTO, CANADA

For over *four decades* HOLOPHANE has pioneered lighting progress and near the close of the last century introduced the commercial use of the prism for artificial light control. From this developed *Planned Lighting* (which requires that lighting equipment be designed for specific application)—and *"Specifics."*

This catalog gives the essential data on those Specifics most often used by architects and engineers. Scores of others are necessarily omitted, so in order to receive our *complete lighting service* we urge architects to consult our Engineering Department at New York, N. Y., or any of our field engineers, all of whom have a thorough knowledge of lighting requirements and the application of *Holophane Specifics.*



S-5540—Suspension Type



C-5540—Ceiling Type



R-5544—Flush Type

HOLOPHANE SEMI-DIRECT LIGHTING—CORRECTALITE

The Holophane Correctalite presents the new trend—*semi-direct* lighting. It is admirably suited for use in stores, offices, public building service areas, commercial display rooms, schools and laboratories, etc.

Specification Data

The light controlling element consists of two parts—a prismatic reflector and a bottom bowl-shaped refracting member in which there is a removable plate to permit easy relamping. These two parts are safely and securely joined as one unit by three rods which engage the bottom bowl and fasten to an annular ring in the neck of the reflector. The controlling element is assembled at the factory and the complete Correctalite unit consists of but two principal parts.

Fixtures are No. 22 gauge brass. *Ceiling* type fixtures are equipped with canopy cross bar and barrel nuts for mounting. *Suspension* type fixtures are of rigid ⅜ in. stem, ball and swivel construction with slip canopy and are arranged for direct attachment to outlet box by suitable hickeys and extensions furnished by the contractor.

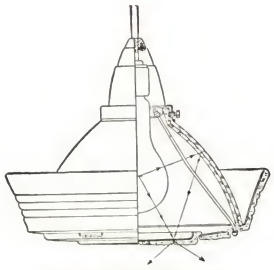
Flush fixtures have a cast iron plaster ring and a spun satin cadmium finished flange with a No. 22 gauge brass socket hood satin nickel finished, terminating in a ½ in. female pipe thread to which contractor can attach a flexible connection from outlet box.

All fixtures are furnished with easy-to-wire porcelain sockets and have two lugs and two set screws to securely support the light director.

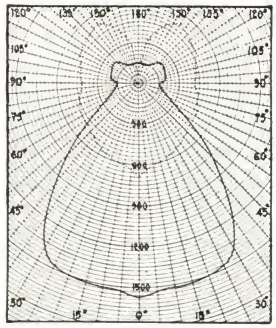
Standard finish is satin nickel. Dull bronze and any Duco finish can be supplied at no extra charge, when so specified.

Spacing

For uniform horizontal illumination spacings should not exceed 1¼ times the mounting height above the work.



Section View Through Correctalite



Characteristic Curve, 300-watt Medium Base Lamp

Cat. No.	Mazda lamp	Dimen., ins.	
		Dia.	Dph.
C-5540	200-300*	15¾	13
S-5540	200-300*	15⅜	36
R-5544	200-300*	18 Plaster Ring	7½ Recess Needed

*300-watt medium base 6 in. light center lamp.

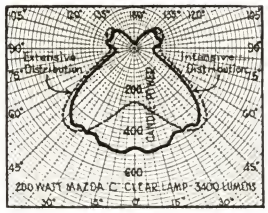
RECESSED REFLECTOR—REFRACTOR

Listed Under Label Service of Underwriters' Laboratories, Inc.

Recessed Reflector—Refractors make *in-bilt* lighting possible with minimum installation difficulties and expense.



Holphane Recessed Reflector-Refractor



Characteristic Extensive or Intensive Distribution

Selection Data

Especially suited for low ceilings due to wide light coverage at normal spacings.

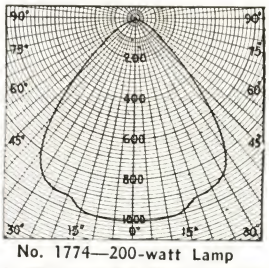
Installation is simple. Plaster ring is set in position and ceiling plastered. Flexible wiring from the outlet box is brought to socket in fitter.

Easy relamping through removable cup in bottom glass.

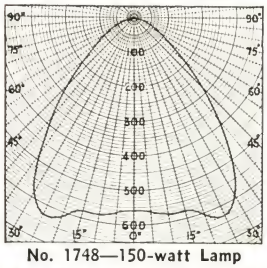
Cat. No.	Lamp size	Dia. plaster ring, in.	Recess needed, in.
R-2110	100	9⅝	7⅜
R-2120	150	11⅞	8¼
R-2130	200	14†	9½
R-2133†	200	14†	9½
R-2140	300**	16⅛	9½
R-2143†	300**	16⅛	9½

**300-watt medium base lamp. †Intensive distribution.

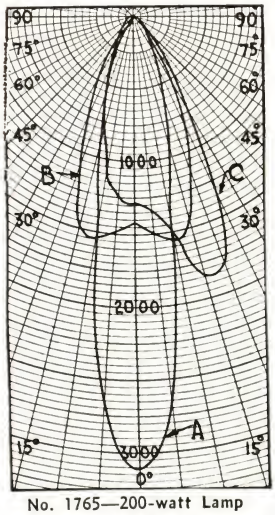
FLUSH "IN-BILT" LIGHTING WITH SQUARE CONTROLENSES



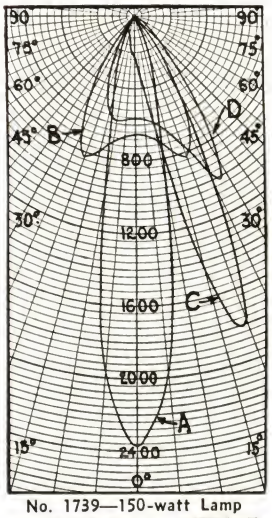
No. 1774—200-watt Lamp



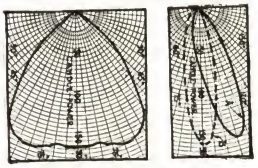
No. 1748—150-watt Lamp



No. 1765—200-watt Lamp

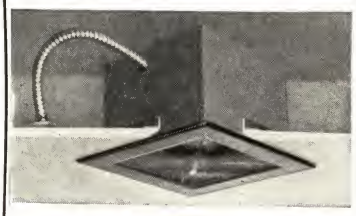


No. 1739—150-watt Lamp

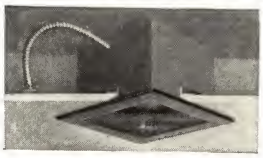


No. F-796 for Special Application

1. GENERAL LIGHTING

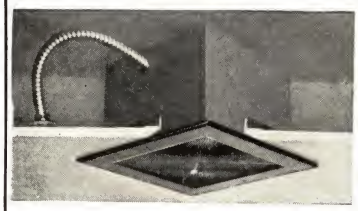


F-1774

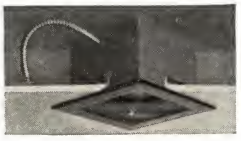


F-1748

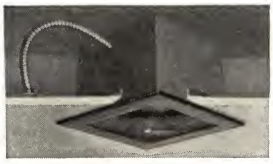
2. PLUS AND LOCALIZED LIGHTING



F-1765



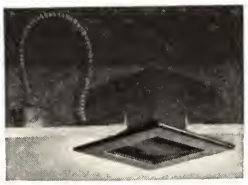
F-1732



F-1739



F-1722



F-796

General—Natural lighting comes from built-in devices, windows and skylights. So does artificial lighting . . . with the new Holophane Controlens *"In-Bilt."*

The Holophane Controlens takes the light from the reflector and lamp, "gathers" it together into the exact spread needed, and distributes it, strongly reinforced, to the proper places. Glare is eliminated because the scattering, high angle light is bent from useless, glare-causing paths, into useful directions.

Unit Cat. No.	Lenses in unit	Max. watts per lens	Spacing	Lens size, in.	Roughing box, depth, in.	Plaster opening	
						Length, in.	Width, in.
F-1774	1	300	1¼ x 1	12″	10⅞″	14⅜″	14⅜″
F-1774-2	2	300	1¼ x 1	12″	13″	24⅝″	14⅜″
F-1774-4S	4	300	1¼ x 1	12″	13″	26⅛″	26⅛″
F 1748	1	150	1¼ x 1	8½″	8⅞″	10¾″	10¾″
F-1748-2	2	150	1¼ x 1	8½″	9″	19¼″	10¾″
F-1748-4S	4	150	1¼ x 1	8½″	13″	23½″	23½″
F-1765	1	300	.9 x 1	12″	11⅞″	14⅜″	14⅜″
F-1765-2	2	300	.9 x 1	12″	13″	24⅝″	14⅜″
F 1765-4S	4	300	.9 x 1	12″	13″	26⅛″	26⅛″
F-1739	1	150	.9 x 1	8½″	10⅜″	10¾″	10¾″
F-1739-2	2	150	.9 x 1	8½″	10½″	19¼″	10¾″
F-1739-4S	4	150	.9 x 1	8½″	13″	23½″	23½″
F-1732	1	100	¾ x 1	6½″	8¼″	8⅜″	8⅜″
F-1722	1	60	¾ x 1	6½ x 3⅞″	6⅝″	8¼″	5¾″
F-796	1	100	Special	6½″	6″	9⅞″	8½″
F-796-2	2	100	Special	6½″	7⅜″	17⅛″	11⅞″

Standard Finish—Satin finished on all exposed surfaces.

All Holophane Controlens Units are listed under label service of Underwriters' Laboratories, Inc.

SPECIFICATION PARAGRAPHS

No. 1774—The optical train shall consist of a 12-in. square lens of the sectored plano-convex type regressed to a flat plane in steps not less than eight to the inch, the segments being distributed in concentric form, equally spaced and extending completely into the corners of the lens, the top side being stippled with ellipsoidal projections with velvet finish to provide diffusion; and a crystal prismatic glass reflector 12 in. in diameter, 5¾ in. deep.

No. 1748—The optical train shall consist of an 8½-in. square lens of the sectored plano-convex type regressed to a flat plane in steps not less than eight to the inch, the segments being distributed in concentric form, equally spaced and extending completely into the corners of the lens, the top side being stippled with ellipsoidal projections with velvet finish to provide diffusion; and a crystal prismatic glass reflector 8½ in. square, 4⅜ in. deep.

No. 1765—The optical train shall consist of a 12-in. square lens of the sectored plano-convex type regressed to a flat plane in steps not less than eight to the inch, the segments being distributed in concentric form, equally spaced and extending completely into the corners of the lens, the top side being stippled with ellipsoidal projections with velvet finish to provide diffusion; and a crystal prismatic glass reflector 9¾ in. in diameter, 4¼ in. deep.

No. 1732—The optical train shall consist of a 6½-in. square lens of the sectored plano-convex type regressed to a flat plane in steps not less than eight to the inch, the segments being distributed in concentric form, equally spaced and extending completely into the corners of the lens, the top side being stippled with ellipsoidal projections with velvet finish to provide diffusion; and a crystal prismatic glass reflector 6¾ in. in diameter, 4 in. deep.

No. 1739—The optical train shall consist of an 8½-in. square lens of the sectored plano-convex type regressed to a flat plane in steps not less than eight to the inch, the segments being distributed in concentric form, equally spaced and extending completely into the corners of the lens, the top side being stippled with ellipsoidal projections with velvet finish to provide diffusion; and a crystal prismatic glass reflector 7½ in. in diameter, 3⅜ in. deep.

No. 1722—The optical element shall consist of a 6½ x 3⅞-in. rectangular lens of the sectored plano-convex type regressed to a flat plane in steps not less than eight to the inch, the segments being distributed in concentric form, equally spaced and extending completely into the corners of the lens, the top side being stippled with ellipsoidal projections with velvet finish to provide diffusion; and a crystal prismatic glass reflector 4¾ in. deep by 2¾ in. wide.

No. 796—The optical element shall consist of a 6½-in. square lens of the cylindrical plano-convex type regressed to a flat plane in steps not less than eight to the inch, the segments being distributed in parallel form equally spaced and extending completely into the corners. At right angles on the opposite lens surface are cylindrical plano-concave type prisms regressed to a flat plane in steps not less than eight to the inch, the segments being distributed in parallel form, equally spaced, and forming a diamond shaped pattern; this side being velvet finished to provide diffusion.

Important—This is only a Partial Listing

SEMI-EXPOSED CONTROLENS UNITS

This type is generally chosen because of a lack of sufficient depth in ceiling for complete recessing or the desire for more ornamentation. Both two and one-piece construction are available.

Typical Semi-exposed Double Controlens Unit



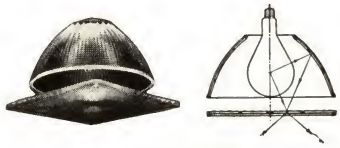
EXPOSED CONTROLENS UNITS

This type is used where recessed construction is not possible due to job conditions. It provides a fine opportunity for ornamentation of varying degrees.

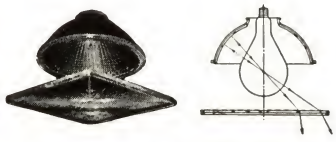
Write the Architectural Department of the Holophane Company, 342 Madison Avenue, New York, N. Y., for complete data

Typical Exposed Square Controlens Unit





Characteristic of F-1774, F-1748

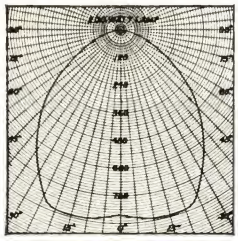


Characteristic of F-1765, F-1739, F-1732, Etc.

OPTICAL ASSEMBLIES OF CONTROLENS UNITS

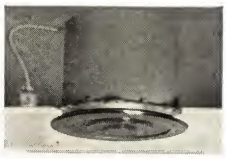
Caution: Each Controlens requires a specially designed reflector that will direct the light to it in the particular paths required. Holophane performance can only be secured by the use of the complete combination as manufactured and recommended by Holophane.

FLUSH "IN-BILT" LIGHTING WITH CIRCULAR UNITS



Characteristic Curve

GENERAL LIGHTING



F-15529

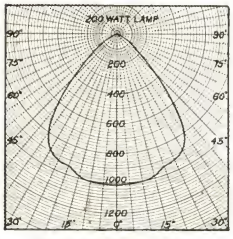
SPACING—Up to 1¼ x Mounting height **WATTAGE**—300-500

DIMENSIONS—Dia. of Work Box 17¼ in. Work Box Depth—15⅛ in.

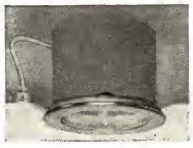
DIAMETER OF LENS—15 in.

SPECIFICATION PARAGRAPH—The optical train shall consist of a 15-in. diameter refracting plate bearing a geometrical line prismatic pattern having spread-diffuse characteristics, coupled with a complementing prismatic reflector 15½ in. in diameter and 7⅝ in. deep.

Note: This unit can also be furnished with a Convex Lens under No. 15526.



Characteristic Curve



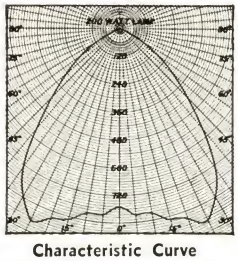
F-1894

SPACING—Up to 1¼ x Mounting height **WATTAGE**—200-300

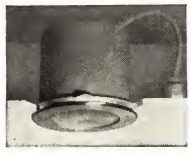
DIMENSIONS—Dia. of Work Box—15⅝ in. Work Box Depth: 12 in.

DIAMETER OF LENS—13½ in.

SPECIFICATION PARAGRAPH—The optical train shall consist of a 13½-in. circular lens of the sectored plano-convex type regressed to a flat plane in steps not less than eight to the inch, the segments being distributed in concentric form, the top side being stippled with ellipsoidal projections with velvet finish to provide diffusion; and a crystal prismatic glass reflector 13½ in. diameter by 7⅜ in. deep.



Characteristic Curve



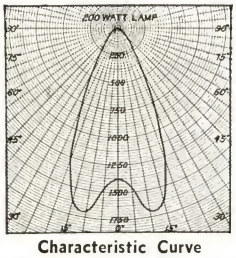
F-12336

SPACING—Up to 1½ x Mounting height **WATTAGE**—200

DIMENSIONS—Diameter of Work Box—12⅝ in. Work Box Depth—10¾ in.

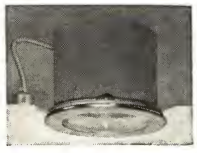
DIAMETER OF LENS—10⅜ in.

SPECIFICATION PARAGRAPH—The optical train shall consist of a 10¾-in. diameter refracting plate having concentric prisms on the inner surface and square bounded lens areas on the reverse coupled with a complementing prismatic reflector 10⅛ in. in diameter and 7¼ in. deep.



Characteristic Curve

PLUS AND LOCALIZED LIGHTING



F-1848

SPACING—Up to ¾ x Mounting height. **WATTAGE**—200-300

DIMENSIONS—Diameter of Work Box—15⅝ in. Work Box Depth—12 in.

DIAMETER OF LENS—13½ in.

SPECIFICATION PARAGRAPH—The optical train shall consist of a 13½-in. circular lens of the sectored plano-convex type regressed to a flat plane in steps not less than eight to the inch, the segments being distributed in concentric form, equally spaced, the top side being stippled with ellipsoidal projections with velvet finish to provide diffusion; and a crystal prismatic glass reflector 9¾ in. in diameter, 4¼ in. deep.

Important—This is only a Partial Listing

MULTIPLE CONTROL LENS SYSTEMS FOR OPERATING ROOMS (M.C.L.S)

A multiple lens system for surgery lighting provides a number of light beams converging to form a high intensity spot on the operating area. It assures adequate light without glare, shadows or heat. It is a permanent part of the room construction and requires no adjustment or attention during an operation. It is well outside the zone of explosion hazard. Summing up, a Holophane "Controlens" System presents a most modern, complete, satisfactory method available for meeting the exacting lighting requirements and overcoming the mechanical difficulties of operating room lighting.

Advantages

1. Maximum horizontal illumination on operating area.
2. General illumination of the Operating Room so that the brightness of the surroundings is about the same as the interior of the incision. (The seeing conditions in "looking up" do not change.)
3. The direction of the light may be varied without moving the fixture.
4. Adequate diffusion and absence of harmful shadows.
5. High vertical illumination.
6. Glareless, comfortable light.
7. Multiple lamping (some devices put only one lamp between life and death).
8. Reasonable cost of installation, operation and maintenance.
9. All enclosed and dirt-resisting.
10. No mirrors that permit conscious patients to observe their operation.

The M.C.L.S. is a self-contained unit consisting of all metal housing; top primed white inside, hospital gray Duco outside, sides and sash given one primary coat; complete with sockets, holders, reflectors, and lenses; wired in separate circuits collected in junction box ready for connection to power supply. It is shipped knocked down in such a way as to make assembly and erection easy. It is usually installed flush in a furred ceiling but may be mounted exposed if so desired. Metal strip for finishing ceiling around the unit is not part of the standard installation.



M.C.L. System in Use

HOLOPHANE MULTIPLE SPOT LENS SYSTEM (M.S.L.S.)

The Holophane Multiple Spot Lens System is composed of a number of individual "Controlens" units for either exposed or recessed installation, arranged so that each contributes a beam of light to a spot at the operating site. The system embraces many of the desirable qualities of the M.C.L.S., viz.: absence of shadows, multiple lamping, heat elimination and adequate general room illumination. It fits into most job conditions and lean budgets.

The size of the system ranges from 3 boxes, used for dental surgery (No. 3-D.S.L.S.), to whatever number is necessary to provide proper illumination for the type of surgical work performed.

Catalog number	Overall dimensions			Lamp wattage
	Length	Width	Depth	
15-M.C.L.S.	11′ 6⅛″	6′ 6½″	1′ 10½″	15-150W
18-M.C.L.S.	13′ 7⅜″	6′ 6½″	1′ 10½″	18-150W
21-M.C.L.S.	15′ 7⅞″	6′ 6½″	1′ 10½″	21-150W
5-M.S.L.S. (Exposed)	Write for Engineering Data Sheets on Dental Exposed, Minor and Delivery Multiple Spot Lens Systems			5-150
5-M.S.L.S. (Flush)				5-150 or 200
7-M.S.L.S. (Exposed)				7-150
7-M.S.L.S. (Flush)				7-150 or 200
11-M.S.L.S. (Exposed)				11-150
11-M.S.L.S. (Flush)				11-150 or 200



M.S.L. System in Use

HOLOPHANE SEMI-INDIRECT—FILTERLITE



F-500
16-in.-R

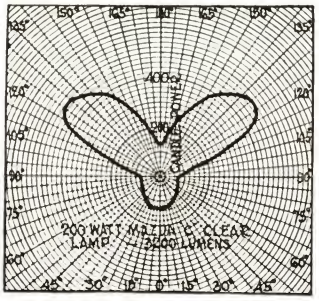
Offices, classrooms and other locations where constant eye work is performed require a refinement of illumination not generally necessary in the lighting of less exacting business or industrial areas. The "Filterlite" is admirably suited for office work of similar work because of the outstanding characteristics listed below.

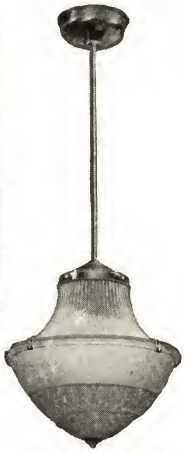
The lower member is an optically designed refracting bowl, bending the light upwards. The upper member is an optically designed lateral diffuser. The combination delivers most of the light smoothly on to the ceiling—20% being permitted to filter directly downward. The result is smooth, quiet illumination.

The fixtures are brass finished in satin nickel. Dull brass, Duco and acid bronze furnished at no extra cost.



Ceiling Type
CF-100R, CF-200R





Suspension Type
F-100R, F-200R

"Filterlite" Characteristics

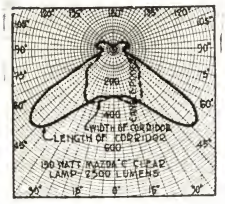
1. Semi-indirect distribution (80% of output upward—20% downward).
2. High efficiency.
3. Low brilliancy.
4. Minimum dust depreciation (smooth outside).
5. No permanent deterioration.
6. Wide spread ceiling light.
7. No shadows or streaks.
8. No sharp cut-off on ceiling.
9. Excellent appearance.

Catalog No.	Mazda lamp	Dimen., in.	
		Dia.	Dph.
CF-100R	100†-150	12	14⅛
CF-200R	200-300	14	17½
CF-500-16″R	500	16½	20¾
F-100R	100†-150	12	32½
F-200R	200-300	14	35¾
F-500-16″R	500	16½	36

Installation—Use "Filterlites" spaced on not over 15-ft. centers and mounted so that distance from ceiling to bottom of glassware will not exceed 25% of total ceiling height.

Important—This is only a Partial Listing

HOLOPHANE CORRIDOR AND BOOK STACK SPECIFICS



Characteristic Curves
No. C-2172-R

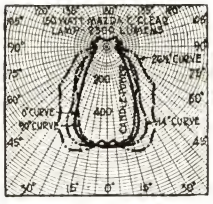


No. C-2172-R

USE—No. C-2172-R is for corridor lighting or for long narrow areas of similar proportions. The light is restricted in the width of the corridor and that which is generally wasted on the side walls in ordinary lighting systems is redirected and utilized along the length of the corridor. Fixture finish, satin nickel.

SPACING—Up to 2½ x Mounting height.

DIAMETER—9⅞ in. **DEPTH**—10¾ in. **WATTAGE**—75-150



Characteristic Curves
No. 2176

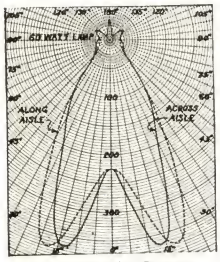


No. 02176

USE—No. 02176 is for lighting library bookstacks, stock bins, etc., and provides uniform illumination on books or shelves from top to bottom and from unit to unit. Designed for 50-60-watt lamp but can be furnished for use with 40-watt lamp on special order. Dull nickel finish fixture for mounting directly on ears of 3¼-4-in. outlet box.

SPACING—6 ft. 0 in. centers.

DIAMETER—9⅞ in. **DEPTH**—7½ in.



Characteristic Curves
No. 02076



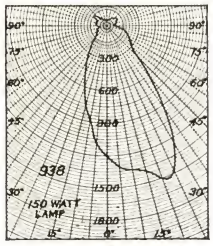
No. 02076

USE—No. 02076, also for bookstack lighting, is an open bottom unit with fitter for attachment to grooved porcelain socket. The open bottom feature permits increased illumination at lower points on the stacks. Installation should be made with orienting hole in fitter at right angles to the vertical surface to be lighted. This assures proper positioning of the glassware when orienting lug is engaged in hole. Fixture finish satin nickel. Use 60-watt Inside Frosted lamp.

SPACING—6 ft. 0 in. centers.

DIAMETER—8¾ in. **DEPTH**—7 in.

SHOW WINDOW REFLECTORS



Characteristic Curve



No. 938 with Bottom Plate Pendant

No. 938 (Includes Hinged Face Plate)

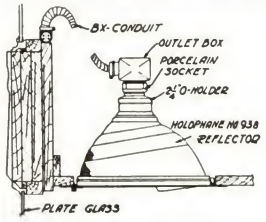
USE—For small and medium sized average depth windows, island windows, other display areas, indoor sports, etc.

WATTAGE—150.

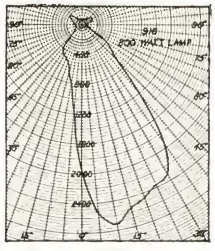
SPACING—12 to 15 in. on center.

OPENING REQUIRED—11 in. diameter.

MIN. HEIGHT AS ILLUSTRATED—7⅜ in.
Catalog number without bottom plate but including flush mounting trim is No. 940.



Method of Mounting Holophane No. 938



Characteristic Curve



No. 916

No. 916

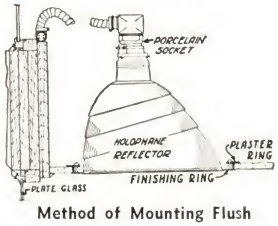
USE—For windows with medium trim, island windows, other display areas, etc.
Flush installation in wood ceiling by using finishing ring No. 0701; in plaster ceiling with plaster ring No. 0700 and finishing ring No. 0701.

WATTAGE—200.

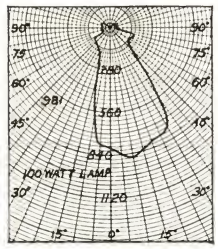
SPACING—13¼-in. wood ceiling; 14-in. plaster.

OPENING REQUIRED—11⅜ in.

MIN. HEIGHT AS ILLUSTRATED—9⅛ in.



Method of Mounting Flush



Characteristic Curve



No. 981-983

No. 981-983

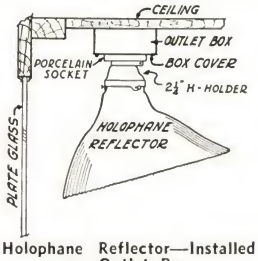
USE—For small and medium sized average depth windows, indoor sports, churches, etc.

WATTAGE—100-150.

SPACING—12 in. on center.

	981	983
REFLECTOR DEPTH—(To holder screws)	4¾"	6⅛"

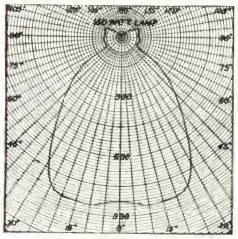
HOLDER—2¼ in. "H" type.



Holophane Reflector—Installed on Outlet Box

Important—This is only a Partial Listing

HOLOPHANE PRISMATIC REFLECTORS



Characteristic Curve



No. 6531

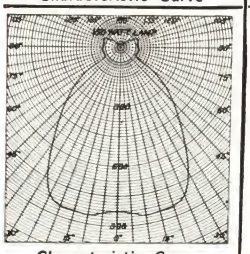
SPACING—Up to 1¼ x Mounting height above work.

DIMENSIONS—Overall depth 9 5/16 in. Diameter 9 in.

LAMP SIZE—100 watt (with socket extension)—150 watt.

MOUTING—On 3¼-4-in. outlet boxes.

WHEN RECESSED—Use plaster ring No. 0181; with flush mounting ring No. 0180.



Characteristic Curve



No. 6533

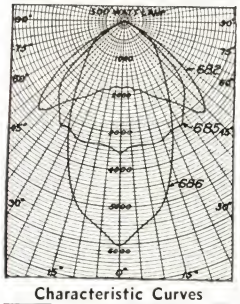
SPACING—Up to 1¼ x Mounting height above work.

DIMENSIONS—Overall depth 9¾ in. Diameter 9 in.

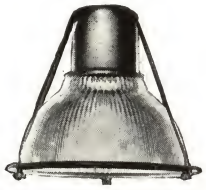
LAMP SIZE—100 watt (with socket extension)—150 watt.

MOUTING—Use pipe to fit ½-in. female thread connection.

WHEN RECESSED—Use plaster ring No. 0181; with flush mounting ring No. 0180.



Characteristic Curves



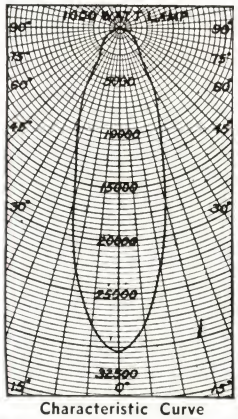
Nos. 684, 682, 685, 686

Cat. No.	Distribution	Spacing	Diameter	Overall depth	Lamp size
682	Extensive	2 x Mtg. Ht.	13 7/8″	12¼″	300-500-W
684	Intensive	1.25 x Mtg. Ht.	11 7/8″	10 7/8″	200W
685	Intensive	1.25 x Mtg. Ht.	13 7/8″	12¼″	300-500-W
686	Focussing	0.6 x Mtg. Ht.	13 7/8″	12¼″	300-500-W

Add "AL" to Cat. No., or specification when aluminum cover is desired.

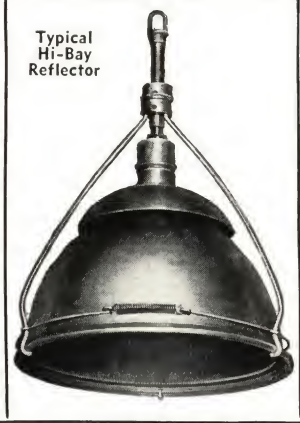
MOUNTING—Use pipe to fit ½-in. female thread connection.

WHEN RECESSED—Use plaster ring No. 0195 (for 684) or No. 0194 (for 682, 5 and 6). With flush mounting ring No. 0192 (for 684) or No. 0190 (for 682, 5 and 6) without roundel; or No. 0193 (for 684) or No. 0191 (for 682, 5 and 6) if desired hinged with roundel.



Characteristic Curve

Typical Hi-Bay Reflector



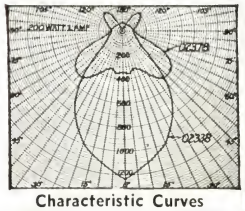
Holophane "Hi-Bay" Specifics are for high mounting and are designed to give maximum downward illumination. The reflectors are heavy pressed prismatic glass with dust-tight aluminum cover spun on permanently.

Cat. No.	Distribution	Spacing	Diameter	Overall depth	Lamp size
681AL	Intensive	1 x Mtg. Ht.	16″	20 5/8″	300- 500W
691AL	Intensive	1 x Mtg. Ht.	19¾″	27″	750-1500W
690AL	Focussing	0.6 x Mtg. Ht.	21¾″	26 5/8″	750-1500W
692AL	Extensive	2 x Mtg. Ht.	19¾″	27 3/8″	750-1500W

MOUNTING—Use 2-in. fixture hook, or disconnecting hanger or shock absorber.

WHEN RECESSED—Plaster ring, hinged or fixed flush mounting rings, cover glasses and heat-resisting roundels can be supplied. Write Architectural Dept., Holophane Co., 342 Madison Ave., New York, N. Y., for full details.

HOLOPHANE VAPOR-PROOF SPECIFICS



Characteristic Curves



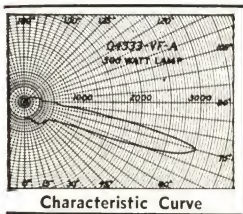
No. 02328

This equipment has a broad application in acid plants, distilleries, rectification plants, paint shops, electro-plating and pickling departments, oil refineries, powder plants, showers, etc.

The units consist of heavy duty prismatic glass globes with threaded fitters which engage cast silicon aluminum fittings for mounting on ½-in. conduit.

Cat. No.	Distribution	Spacing	Diameter	Overall depth	Lamp size
02208	Extensive	2 x Mtg. Ht.	6¾″	8 7/8″	60W
02328	Extensive	2½ x Mtg. Ht.	8 5/8″	10 7/8″	150W
02368	Extensive	2 x Mtg. Ht.	10½″	11½″	150W
02338	Intensive	1 x Mtg. Ht.	10½″	12½″	200W
02378	Extensive	2 x Mtg. Ht.	12″	12¾″	200W

HOLOPHANE "WIDE-SPRED" LIGHTING SPECIFICS



Characteristic Curve



No. 04333-VF-A

The unusually wide spread of light from these specifics has made them popular for the solution of outdoor lighting problems. The globes are heavy pressed double refractors sealed together, weather-proof and dust tight. Fixtures are cast silicon.

Cat. No.	Distribution	Spacing	Diameter	Overall depth	Lamp size
830	Wide-spread	6 x Mtg. Ht.	8 1/16″	9 7/8″	100-150W
832	Wide-spread	6 x Mtg. Ht.	9″	11 5/8″	200W
04333VF-A	Wide-spread	6 x Mtg. Ht.	16¼″	16¼″	300-500W
04338VF-A	Wide-spread	6 x Mtg. Ht.	12 7/8″	14 3/8″	200-300W

Important—This is only a Partial Listing

MEMORANDA

FOR MODERN LIGHTING USE PERMAFLECTORS

The Silvered Glass Reflectors with the Permanent Efficiency



PITTSBURGH REFLECTOR COMPANY

PERMAFLECTOR *Lighting* BY PITTSBURGH

PERMAFLECTORS • LUSTROLIERS • LUMINAIRES • SPOTLIGHTS • FLOODLIGHTS



A COMPLETE LINE

Two decades of manufacturing experience and engineering research form the background for Permaflectors, the modern word for good lighting. In 1916, after much experimental work, we developed a process for protecting the silver reflecting surface of Permaflectors with copper. This process enabled us to absolutely guarantee Permaflectors against weaknesses common to other silvered glass reflectors.

Today, hundreds of thousands of Permaflectors have been in service for ten, fifteen and twenty years and yet not one out of ten thousand has been reported to us as having the silvered reflecting surface darken, or the backing crack, check or peel.

The Permaflector line of silvered glass reflectors includes more than 70 designs—a correctly shaped unit for practically every need in the lighting of show windows, cove lighting, direct and indirect lighting, flood lighting and color lighting.

Various types of lighting installations require the use of special auxiliary equipment for adapting Permaflectors to local architectural conditions. Therefore, there is available to you a complete line of auxiliary equipment especially designed by our engineers to permit the Permaflectors to perform with maximum efficiency. Special equipment includes "Lustroliers," luminaires, floodlights, spotlights, urns, housings for industrial and built-in equipment, roundels, color-lites, louvers, knockout strip and numerous fittings.

The completeness of the Permaflector line helps to simplify your job of selecting proper lighting equipment as there is scarcely any lighting problem which Permaflector equipment will not help solve.

Front Cover: Crown Jewelry Store, New Kensington, Pa. Architect—H. H. Lefkowitz

YOUR NEAREST PERMAFLECTOR REPRESENTATIVE



















WIDE APPLICATION

Illustrated above are a few of the many different types of Permaflector installations. These illustrations demonstrate the wide application of Permaflectors—both in lighting treatment and classes of architectural problems.

In addition to those shown above, there are Permaflector installations in hotels, art galleries, banks, museums, laboratories, department stores, night clubs, stock exchanges, apartment buildings, residences, etc.

Occasionally an unusual or entirely new lighting problem develops which requires a unit of special design. A new unit that will solve the problem with utmost efficiency is promptly designed by our engineering department. In this way the Permaflector line is continually changing and ever widening in its application.

PERMAFLECTOR ENGINEERING SERVICE FOR ARCHITECTS . . . . . .

A glance at the following pages of this catalog will indicate the great variety of reflectors and complete lighting units we have for various lighting conditions. We realize that it would be almost an impossibility for our customers to be able to select the Permaflector best suited for a particular lighting condition. Having designed and produced the line, our engineers have a thorough knowledge of the proper lighting applications for the various units.

For this reason we offer the services of our engineering department to you at no extra cost. When you are planning a lighting installation, consult our engineering department at Pittsburgh, or any of our field representatives all of whom have a thorough knowledge of lighting needs. Our trained men will make certain that you have selected the correct Permaflector for your particular requirements. Do not hesitate to make use of this service.

LIGHTING IN ARCHITECTURE . . . . . .

• INFLUENCE OF LIGHT ON ARCHITECTURAL DESIGN

Leading and progressive architects are realizing the value of light as an important influence on the beauty and utility of their architectural designs. Accordingly, they are planning their structures with light as an integral part of their designs.

Planned lighting enhances the beauty of any architectural interior or exterior. Moldings, fluted bands or columns, pilasters and walls become alive with glowing richness. Skillful balancing of light and shade accents structural lines and three dimensional patterns. In modern architecture, planned lighting creates an "organic" decorativeness—a "related" beauty that is unexcelled.

Those who practice new architectural truths know they are founded on functional efficiency. Production, safety, morale and health are strongly effected by lighting. Ease of seeing is important in work or play. Various tasks of seeing require different levels and character of illumination. Planned lighting provides proper illumination where and when it is needed thereby contributing greatly to functional efficiency.

Modern efficient lighting equipment is the new tool with which the architect achieves designs of distinctive beauty and functional efficiency.

• FUNDAMENTALS OF GOOD LIGHTING

Good lighting, regardless of the job, requires just five things:

1. Proper size and type of lamp.
2. Correct location and spacing.
3. Good reflectors.
4. Correct design.
5. Correct installation.

It is the purpose of this catalog to suggest the correct answer to these questions as applied to as many different types of lighting problems as may be possible. However, since nearly every architectural lighting problem presents individual influencing factors that must be considered we find it advisable to supply complete details on our entire line through our engineering department and catalogs.

• SELECTION OF REFLECTING SURFACE

	Absorption Loss
Polished silver, unprotected, new (darkens rapidly—not practical)	5%
Silver plated glass	10%
Nickel, freshly polished (tarnishes rapidly)	40%
Aluminum (varies with quality and finish)	20-40%
Stainless steel, more than	60%

From this tabulated data—the particular efficiency and adaptability of silver-plated glass is established. But it is not sufficient to select any silver-plated glass reflector. Unless the silver-plating be properly protected, the silvered reflecting surface will gradually deteriorate, until it has no more value than aluminum, stainless steel, or other similar surfaces.

There is one silvered glass reflector which does stay bright—the reflecting surface of which does not discolor.

Permaflectors stay bright—at the end of ten, fifteen, twenty-five or thirty years, you will find the reflecting surface of Permaflectors just as bright, just as efficient, as when first placed in service.

• LASTING BRIGHTNESS OF PERMAFLECTORS

Use all the light you need—but get all the light you pay for. Light, like water and gas, costs money. So use the light you buy to the best advantage. Just as a cheap gas burner wastes gas, so a cheap reflector, or one not specifically adapted to the purpose intended, wastes electricity.

The secret process of copper-sealing the silver-plated glass developed by the Pittsburgh Reflector Company, has caused the name "Permaflector" to mean the most efficient reflector for lighting yet produced. More than 70 different designs afford a range wide enough to meet any lighting requirements. Regardless of the shape selected, uniform quality is assured by our completely controlled process of manufacture.

1. The "foundation" of a Permaflector—clear, sparkling Crystal Glass, blown in our own plant. Because every step in the manufacture of the glass used in Permaflectors is controlled by us, the high quality runs uniform.

2. Outside double-plated with pure silver, the reflecting surface that absorbs the least amount of light. When protected by the Pittsburgh method it retains permanently its original bright luster.

3. Copper plating covers the silver, sealing it permanently against tarnishing. Like a copper roof it is a lifetime protection.

4. A special silver colored satin finish, attractive and distinctive is properly applied over the copper coating. This finish of neutral tone harmonizes admirably with all surrounding materials and fitments.

1 2 3 4



SHOW WINDOW LIGHTING

The four important factors to be considered in the selection of lighting equipment for show windows are as follows: 1. To conceal the light source and thus avoid glare; 2. Locate the lamps to illuminate the display; 3. To control the light that would ordinarily be wasted on the ceiling or sidewalks, redirecting and concentrating it on the display plane; 4. To use plenty of light, not merely for visibility, but to attract passers-by.

The dimensions of the window determine the type of reflector to be used. For example, shallow windows require a reflector of concentrated distribution while deep windows demand a reflector of broad distribution.

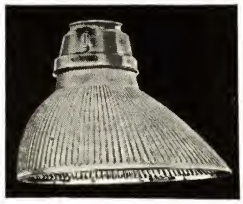
Permaflector show window equipment is complete, including fourteen reflectors of various wattages in four different distributions and three general installation arrangements. For complete installation details consult your local Permaflector engineer listed on Page Twelve.

DeRoy Jewelry Store, Pittsburgh, Pa.



Architect, H. H. Lefkowitz

A FEW TYPICAL SHOW WINDOW PERMAFLECTORS WITH INSTALLATION DATA



PERMAFLECTOR NO. 55

Application: For windows with medium trim; island windows; or windows with upper portion of background of glass. Also for other display lighting, churches, indoor sports, and indirect cove lighting.

Spacing Recommended: 12 in. on centers.

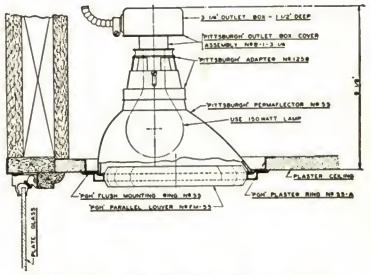
Bottom Opening: Circular, 8½ in. diameter.

Lamp Size:
100 watt A-23, Adapter compressed.
150 watt A-25, Adapter extended.

Mounting: May be mounted on Conduit (Nos. 1, 61 or Knockout Strip KO-1) or Outlet Box Cover Assembly (Nos. B-1-3¼ or B-1-4).

When Recessed: ***In Plaster Ceiling***
—use Plaster Ring, No. 55-A with Flush Mounting Ring, No. 55.
In Ceiling Not Plastered
—use Flush Mounting Ring, No. 55.

Louvers: ***For External Mounting***
—Nos. EM-55 or EM-88-CA.
For Recessed Mounting
—Nos. FM-55 or FM-88-CA (use with Flush Mounting Ring, No. 55).



No. 55 with Plaster Ring, Flush Mounting Ring and Louver
Minimum spacing 11 in. on centers.



PERMAFLECTOR NO. 57

Application: For windows having height 2 to 3 times the depth; or windows in which display is placed low—such as jewelry, etc.

Spacing Recommended: 12 in. on centers.

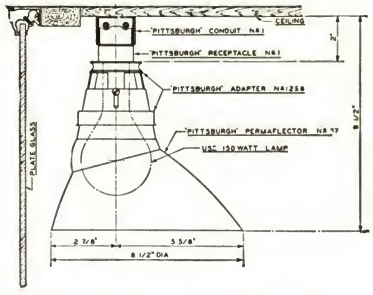
Bottom Opening: Circular, 8½ in. diameter.

Lamp Size:
100 watt A-23, Adapter compressed.
150 watt, A-25, Adapter extended.

Mounting: May be mounted on Conduit (Nos. 1, 61 or Knockout Strip KO-1) or Outlet Box Cover Assembly (Nos. B-1-3¼ or B-1-4).

When Recessed: ***In Plaster Ceiling***
—use Plaster Ring, No. 55-A with Flush Mounting Ring, No. 55.
In Ceiling Not Plastered
—use Flush Mounting Ring, No. 55.

Louvers: ***For External Mounting***
—Nos. EM-55 or EM-88-CA.
For Recessed Mounting
—Nos. FM-55 or FM-88-CA (use with Flush Mounting Ring, No. 55).



No. 57 General Arrangement
Minimum spacing 9 in. on centers.



PERMAFLECTOR NO. 990

Application: Illuminates full height of background without sharp cut-off of more concentrating types. Also for indirect lighting from wall urns, coves, columns and indirect floor lamps.

Spacing Recommended: 12 in. on centers.

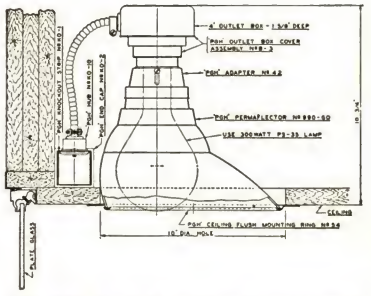
Bottom Opening: Circular, 9½ in. diameter.

Lamp Size:
300 watt PS-35, any position.
500 watt PS-40, for indirect lighting, ***base down only.***

Mounting: May be mounted on Conduit (No. 6)—in which case discard Outlet Box Cover.

When Recessed: ***In Plaster Ceiling***
—use Plaster Ring, No. 54 with Flush Mounting Ring, No. 54.
In Ceiling Not Plastered
—use Flush Mounting Ring, No. 54.

Louvers: ***For External Mounting***
—Nos. EM-54 or EM-99-CA.
For Recessed Mounting
—Nos. FM-54 or FM-99-CA (use with Flush Mounting Ring, No. 54).



No. 990 Flush Mounting Arrangement
Minimum spacing 12 in. on centers.

COVE LIGHTING

Cove lighting is a distinctive type of totally-indirect lighting that has the additional advantage of entirely concealing the light sources. This elimination of the usual visible means of artificial lighting together with the high diffusion and even distribution of illumination provides the closest approximation to natural daylight at its best.

Cove lighting is structurally a part of the room itself which makes it functionally modern and beautiful in its simplicity and close relationship. Accordingly, for best appearance and efficiency cove lighting should be carefully detailed in the original plans.

Our P-Type Permaflectors are particularly adapted to securing the best results from this desirable form of illumination. They are especially designed for lamps in a horizontal position which conserves space in the cove. Selecting the correct Permaflector for cove lighting depends upon the kind of ceiling, width of room, and distance of cove from ceiling to floor. For complete installation details consult your local Permaflector engineer listed on Page Twelve.

Knoxville Presbyterian Church, Pittsburgh, Pa.



A FEW TYPICAL PERMAFLECTORS FOR COVE LIGHTING WITH INSTALLATION DATA



PERMAFLECTOR NO. P-25

Application: For cove lighting, wall cases, bank cages, etc. Also for multi-unit, low wattage indirect fixtures. Broad distribution.

Minimum Spacing: 6 in. on centers.

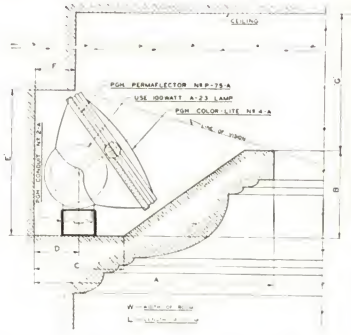
Dimensions: Opening, $3\frac{13}{16}$ in. diameter; height, 3¼ in.; length, $4\frac{13}{32}$ in.

Lamp Size:
25 watt A-19.
40 watt A-19.

Holder: With Conduit No. 2-A or Outlet Box Cover Assemblies No. B-2-3¼ or B-2-4, use 2¼ in. Form "S" holder for 25 watt A-19 lamp; 2¼ in. Form "SL" holder for 40 watt A-19 lamp, attached directly to socket.

May Be Installed with Outlet Box Cover Assembly: No. B-2-3¼ or B-2-4 with 2¼ in. Form "S" or "SL" holders.

May Be Mounted on Conduit: No. 2-A with 2¼ in. Form "S" or "SL" holders.





PERMAFLECTOR NO. P-76

Application: For indirect lighting from coves. Very broad distribution. Also for indirect lighting fixtures in special applications where spacing is limited.

Minimum Spacing: 7½ in. on centers.

Dimensions: Opening, 4¾ in. diameter; height, 3 in.; length, $5\frac{5}{16}$ in.

Lamp Size:
60 watt A-21.
75 watt A-21.
100 watt A-23.

Holder: With Conduit No. 2-A, or Outlet Box Cover Assemblies No. B-2-3¼ or B-2-4, use 2¼ in. Form "S" holder for 60 watt A-21 lamp; 2½ in. Form "SL" holder for 75 watt A-21 lamp; 2¼ in. Form "L" holder for 100 watt A-23 lamp, attached directly to socket.

May Be Installed with Outlet Box Cover Assembly: No. B-2-3¼ or B-2-4 with 2¼ in. Form "S", "SL" or "L" holders.

May Be Mounted on Conduit: No. 2-A with 2¼ in. Form "S" "SL" or "L" holders.

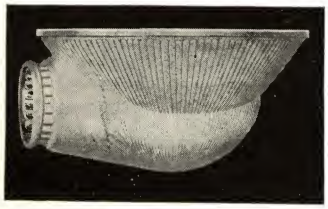
For Colored Lighting: Use Color-Lite—No. 12-A or No. 12-ADB.

COVE LIGHTING DESIGN

In the above sketch the essential dimensions required by our engineering department for a proper cove lighting recommendation are indicated by the letters W, L, G, H.

Dimensions for letters A, B, C, D, E, and F will be supplied by our engineering department together with the proper Permaflector.

An arched ceiling may be treated in a similar manner.



PERMAFLECTOR NO. P-75-A

Application: For cove lighting where a concentrated distribution is required; also for stock quotation boards, art galleries, indirect lighting fixtures.

Minimum Spacing: 7¾ in. on centers.

Dimensions: Opening, 6¾ in. diameter; height, 3⅝ in.; length, 7 in.

Lamp Size:
100 watt A-23.

Holder: With Conduit No. 2-A or Outlet Box Cover Assemblies No. B-2-3¼ or B-2-4, use 2¼ in. Form "S" holder attached directly to socket.

May Be Installed with Outlet Box Cover Assembly: No. B-2-3¼ or B-2-4 with 2¼ in. Form "S" holder.

May Be Mounted on Conduit: No. 2-A with 2¼ in. Form "S" holders.

For Colored Lighting: Use Color-Lite—No. 4-A or No. 4-ADB.

WHERE COVE LIGHTING MAY BE USED

Churches
Ball Rooms
Theatres
Night Clubs
Court Rooms
Residences
Retail Stores
Libraries

BUILT-IN LIGHTING

Permaflector Built-In Direct Lighting is another modern method of illumination which features concealed lighting equipment built in the structure. An efficient Permaflector together with auxiliary equipment is recessed into the ceiling allowing the mouth of the reflector to remain flush with ceiling line. Source of light is concealed by means of louvers, roundels or ornamental glass covers thus providing effective and efficient concealment.

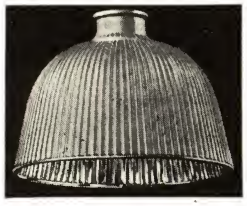
This type of illumination is especially adaptable to merchandising in department stores, dress shops, jewelry and shoe stores. It frees the overhead space from the usual hanging fixtures and provides glareless high intensity illumination on the counters and display cases as well as adequate general illumination over the entire interior. Its simplicity imparts a feeling of spaciousness and allows unbroken view of the store and merchandise. For complete installation details consult your local Permaflector engineer listed on Page Twelve.

Kitty Kelly Shoe Store, Chicago, Ill.



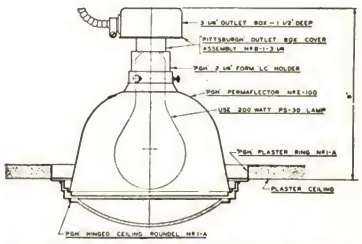
Architect, A. S. Alschuler

A FEW TYPICAL PERMAFLECTORS FOR BUILT-IN LIGHTING WITH INSTALLATION DATA



PERMAFLECTOR NO. E-100

Application: A broadly distributing reflector for direct lighting service. Used exposed in factories or recessed as in gymnasiums, below mezzanine floors and other locations with low head room.
Bottom Opening: Circular, 8½ in. diameter.
Lamp Size:
100 watt A-23.
150 watt A-25.
200 watt PS-30.
Mounting: May be mounted on Conduit (Nos. 1, 61 or Knockout Strip KO-1) or Outlet Box Cover Assembly (Nos. B-1-3¼ or B-1-4). Use with 2¼ in. Holder, Form "S", "L", or "LC".
When Recessed: *In Plaster Ceiling* —use Plaster Ring No. 55-A with Flush Mounting Ring, No. 55; or Plaster Ring, No. 1-A with Hinged Ceiling Roundel, No. 1-A or Hinged Concentric Louver No. 1-A.
In Ceiling Not Plastered —use Flush Mounting Ring, No. 55; or Hinged Ceiling Roundel No. 1-A; or Hinged Concentric Louver No. 1-A.
Louvers: *For External Mounting* —Nos. EM-55 or EM-55-C.

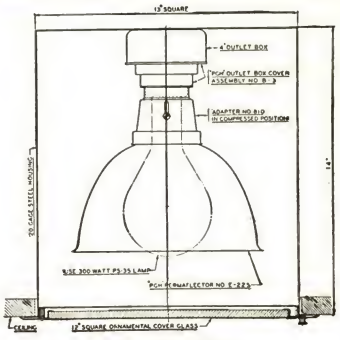


No. E-100 with Hinged Ceiling Roundel



PERMAFLECTOR NO. E-225

Application: For uses similar to E-100 and E-200, where an extremely broad distribution is desired. Also a good reflector for indirect lighting applications.
Bottom Opening: Circular, 9½ in. diameter.
Lamp Size:
150 watt A-25, Adapter compressed.
200 watt PS-30, Adapter extended.
Mounting: May be mounted on Conduit (Nos. 1, 61 or Knockout Strip KO-1) or Outlet Box Cover Assembly (Nos. B-1-3¼ or B-1-4).
When Recessed: *In Plaster Ceiling* —use Plaster Ring, No. 54 with Flush Mounting Ring, No. 54; or Plaster Ring, No. 6 with Hinged Ceiling Roundel No. 6; or Hinged Concentric Louver No. 6.
In Ceiling Not Plastered —use Flush Mounting Ring, No. 54; or Hinged Ceiling Roundel No. 6; or Hinged Concentric Louver, No. 6.
Louvers: *For External Mounting* —Nos. EM-54 or EM-54-C.
For Recessed Mounting— —Nos. FM-54, FM-54-C, FEC-200 (use with Flush Mounting Ring, No. 54); or Hinged Concentric Louver, No. 6.

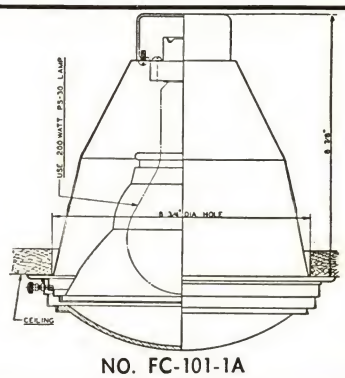


NO. GR-30012



PERMAFLECTOR NO. C-101-A

Application: May be set flush in ceiling and louvered for spot lighting effects.
Spacing Recommended: 12 in. on centers.
Bottom Opening: Circular, 8⅛ in. diameter.
Lamp Size:
150 watt A-25, Adapter compressed.
200 watt PS-30, Adapter extended.
Mounting: May be mounted on Conduit (Nos. 1, 61 or Knockout Strip No. KO-1) or Outlet Box Cover Assembly (Nos. B-1-3¼ or B-1-4).
When Recessed: *In Plaster Ceiling* —use Plaster Ring, No. 55-A with Flush Mounting Ring, No. C-100; or Plaster Ring No. 1-A with Hinged Ceiling Roundel No. 1-A or Hinged Concentric Louver No. 1-A.
In Ceiling Not Plastered —use Flush Mounting Ring No. C-100; or Hinged Ceiling Roundel No. 1-A; or Hinged Concentric Louver No. 1-A.
Louvers: *For External Mounting* —Nos. EM-55 or EM-55-C.
For Recessed Mounting— Nos. FM-55, FM-55-C, FEC-100 (use with Flush Mounting Ring No. C-100); or Hinged Concentric Louver, No. 1-A.



NO. FC-101-1A

LIGHTING FIXTURES

Permaflector lighting fixtures may be classified as four distinct types: totally indirect luminaires, indirect "Lustroliers" with illuminated bowls, indirect "Lustroliers" with minor direct lighting component and direct luminaires. Each classification includes a number of designs reflecting various styles of modern decorative design.

Every Permaflector Luminaire is equipped with a Permaflector which efficiently and correctly controls the light. The bowl serves merely as an enclosure for the Permaflector. Any method which places reliance on the enclosing bowl for reflection and control of the light flux from the lamp gives results which vary from one design to another.

Well-balanced proportions, simplicity and graceful flowing lines make Permaflector "Lustroliers" and Luminaires beautifully modern. They harmonize exceedingly well with modern interiors and furnishings. For complete installation details consult your local Permaflector engineer listed on Page Twelve.

Ohrbach's Inc., Newark, N. J.



A FEW TYPICAL PERMAFLECTOR LUMINAIRES AND LUSTROLIERS WITH INSTALLATION DATA



A-50 B-50
INDIRECT

TYPE OF LAMP	* 1000 watt T-24 Bipost	300-500 Watt PS-type Inside Frosted
Luminaire No. (Equipped with stem hanger only)	A-50	B-50
Diameter of Bowl	20"	20"
Standard Suspension:		
Top of Bowl to Ceiling	36"	30"
Overall Length	43¼"	37¼"
Permaflector No.	B-509	B-509
Standard Finish	Scratched and Polished Aluminum	Scratched and Polished Aluminum
Shipping Weight (One Luminaire packed)	7½ lbs.	7½ lbs.

TYPE OF LAMP	* 750-1000 watt T-24 Bipost	300-500 Watt PS-type Inside Frosted
Lustrolier No. (Equipped with stem hanger only)	R-591	N-591
Diameter of Bowl	20"	20"
Standard Suspension:		
Top of Bowl to Ceiling	36"	30"
Overall Length	43¼"	37¼"
Permaflector No.	B-509	B-509
Standard Finish	Scratched and Polished Aluminum	Scratched and Polished Aluminum
Shipping Weight (One Lustolier packed)	8 lbs.	8 lbs.



R-591 INDIRECT N-591
ILLUMINATED BOWL



N-562 N-1062
DIRECT-INDIRECT

Standard Lamps, Size	300-500 Watt	750-1000 Watt
Lustrolier No.	N-562	N-1062
Direct Component Transmitted Through	Etched Glass Disc	Etched Glass Disc
Diameter of Bowl	21"	28"
Standard Suspension:		
Top of Bowl to Ceiling	30"	36"
Overall Length	37"	45"
Permaflector No.	B-507	B-1007
Standard Finish	Roman Silver	Roman Silver
Daylight Lighting For Direct Component Use Color-Lite (optional) No.	F-7 DB	F-8 DB

TYPE OF LAMP	200 Watt Medium Base PS-30 inside frosted or 300 Watt Medium Base PS-35 inside frosted	300-500 Watt Mogul Base PS-type Inside Frosted	750-1000 Watt Mogul Base PS-52 Inside Frosted
Luminaire No. (Equipped with stem hanger only)	3200	5300	1750
Diameter of Bowl	20"	22"	28"
Standard Suspension:			
Top of Bowl to Ceiling	30"	30"	36"
Overall Length	35"	35½"	42¾"
Permaflector No.	E-225-GO	E-500-GO	I-1005-GO
Standard Finish	Scratched and Polished Aluminum	Scratched and Polished Aluminum	Scratched and Polished Aluminum
Shipping Weight (One Luminaire packed)	19 lbs.	20 lbs.	35 lbs.



Nos. 3200, 5300, 1750
DIRECT

INDUSTRIAL LIGHTING

Architects have invaded the industrial field and exploded the theory that darkness, confusion and ugliness are inseparable from industry. For, in the factory, the architect is face to face with the machine—the basis of modern architectural design. It is not surprising, therefore, to find utter simplicity, structural strength, and, above all, orderliness, cleanliness and brightness in modern plants.

Good lighting is an important factor in modern industrial plant design. Proper illumination contributes greatly to safety, efficiency and economy. Accidents are lessened, spoilage reduced and production increased thereby lowering costs.

The Permaflector line includes a correctly designed unit for every type of industrial interior—high bay units for heavy manufacturing operations; intermediate units for fabricating plants; focusing units for local lighting over machines, benches, etc. For complete installation details consult your local Permaflector engineer listed on Page Twelve.

General Steel Castings Corp., Eddystone, Pa.



A FEW TYPICAL PERMAFLECTORS FOR INDUSTRIAL LIGHTING WITH INSTALLATION DATA



No. I-505-S

PERMAFLECTOR NO. I-505-S

Description: Permaflector No. I-050-GO enclosed in aluminum housing. Attaches to any ½ in. conduit hanger.

Application: For high bay industrial interiors, gymnasiums, auditoriums, boxing arenas, etc. Used where protection of silvered glass reflector is desirable.

Dimensions: Diameter, 16½ in.; height, overall, 16½ in.

Lamp Size: 500 watt PS-40; 300 watt PS-35.

PERMAFLECTOR NO. I-505-RS

Description: Same as I-505-S but equipped with hinged door carrying heat-resisting stippled glass roundel.

Application: Same as I-505-S.

Dimensions: Diameter, 17 in.; height, overall, 19 in.

Lamp Size:
500 watt PS-40.
300 watt PS-35.



No. I-505-RS



No. I-1000-S

PERMAFLECTOR NO. I-1000-S

Description: Permaflector No. I-505-GO enclosed in aluminum housing complete with mogul socket and arranged to attach to any ½ in. conduit hanger. Permaflector removable.

Application: Same as Permaflector No. I-505-S. To be used where higher intensity is required.

Dimensions: Diameter, 16½ in.; height, overall, 18½ in.

Lamp Size:
1000-750 watt PS-52.

PERMAFLECTOR NO. I-1000-RS

Description: Same as I-1000-S but equipped with hinged door carrying heat-resisting stippled glass roundel.

Application: Same as I-1000-S.

Dimensions: Diameter, 17 in.; height, overall, 21 in.

Lamp Size:
1000-750 watt PS-52.



No. I-1000-RS



No. E-500-S

PERMAFLECTOR NO. E-500-S

Application: A reflector of wide utility. It is enclosed in aluminum housing for industrial and public space illumination. Excellent for use above skylights.

Lamp Size:
500 watt PS-40.
300 watt PS-35.

Description: Permaflector No. E-500-S employs Permaflector No. E-500-GO enclosed in aluminum housing. Permaflector readily removable. Furnished complete with socket. Attaches to any standard ½ in. conduit hanger.

Dimensions: Diameter, 12½ in.; height, overall, 15¼ in.

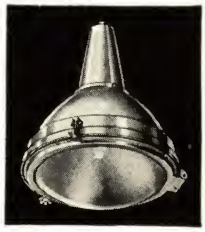
PERMAFLECTOR NO. C-1000-S

Description: Consists of Permaflector No. F-1001 enclosed in aluminum housing with hinged door containing 15¾ in. diam. inside stippled heat-resisting glass roundel, making it dust tight. Attaches to any standard ½ in. conduit hanger.

Application: For high industrial interiors, gymnasiums, auditoriums, boxing arenas, etc. At 25-foot mounting height, covers an area on the floor of 18.2 foot diameter; at 100-foot mounting, covers 72.8-foot diameter.

Dimensions: Diameter, 17 in.; height, overall, 21 in.

Lamp Size: 1000-750 watt PS-52.



No. C-1000-S

THEATRE LIGHTING

In the theatre lighting plays a dramatic part in joining with architectural form to create the desired atmosphere. Here, the scheme of the structure in general should reflect colorfulness, joy and imaginative fancy. To create these moods it is necessary to bring into play many different types of Permaflector equipment such as cove reflectors, floodlights, recessed units and fixtures. Special lighting effects with this equipment requires individual consideration on each job at the time of design.

However, stage lighting is more easily identified with the theatre and is somewhat standard as to practice. Therefore, we are able to present Permaflector lighting equipment especially designed for stage lighting in theatres, churches or schools.

Permaflector Stage Lighting equipment consists of built-in footlights—single and double, disappearing footlights, portable footlights, proscenium strip and border lights. Every piece of equipment contains Permaflectors to efficiently control the distribution of light. Various colors are supplied by colored glass roundels. For complete installation details consult your local Permaflector engineer listed on Page Twelve.

Severance Hall, Cleveland, Ohio.
Architects: Walker & Weeks



A FEW TYPICAL PERMAFLECTOR THEATRE ASSEMBLIES WITH INSTALLATION DATA

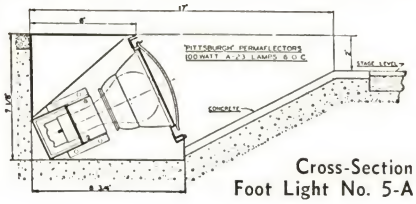


FOOT LIGHT NO. 5-A

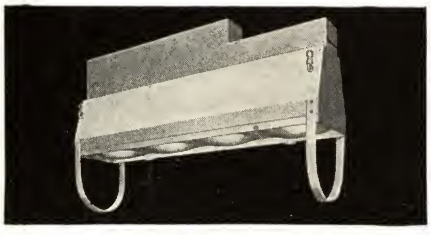
Pittsburgh Foot Light No. 5-A is completely enclosed, self-contained, dust-tight. Sold complete with Permaflectors No. C-60 spaced 6 inches on centers and one F-7 Color-Lite for each outlet (Not Wired). Color-Lite No. F-7 available in red, blue, green, amber, moonlight or uncolored stippled.

SELECTION DATA

Lamp Size: Use 100 watt A-23.
Note: As many 10 ft. 0 in. lengths are bolted together as may be required. Special lengths made up if required.



Cross-Section
Foot Light No. 5-A



BORDER LIGHT NO. 6

A completely enclosed, self-contained unit, built of 20 gauge galvanized iron, aluminum finish. Permaflector C-101 snugly set in metal bottom plate on 9 in. centers. Glass Color-Lites No. F-2 set in hinged metal plate for easy access to lamps.

Made in standard lengths of 9 ft. with 12 outlets 9 in. on centers. Strap steel guards 36 in. on centers. Wiring box installed at center or either end as specified. Terminal connection block furnished in wiring box for convenience of installation and maintenance.

Furnished complete as shown, unwired, but equipped with chain for attaching to pipe batten. Chains spaced 36 in. on centers.

We do not furnish pipe batten, strain insulator, flexible border light cable, lamps or rigging of any kind.

SELECTION DATA

Lamp Size: Use 200 watt PS-30.
Note: As many standard 9 ft. lengths are bolted together as may be required. When total length is not evenly divisible by 9 ft., one section is made special to required dimension.

COMPLETE LINE OF ACCESSORIES AND FITTINGS

Illustrated herewith are a few of the many available accessories and fittings that complete the Permaflector line of lighting equipment. Accessories and fittings are especially designed for Permaflectors by our own engineers and contribute greatly to the flexibility and efficiency of Permaflector lighting equipment.

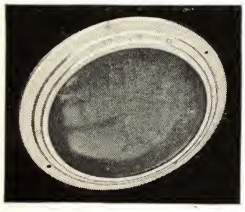
Color-Lites are available in a wide range of colors and may be attached to most types of Permaflectors. They are particularly well adapted for use with theatre and store lighting equipment.

Permaflector Louvers are complete, including concentric, eccentric, parallel and egg crate designs suitable for every installation requirement.

Additional Permaflector accessories and fittings are: glass roundels, flush mounting rings, plaster rings, spill shields, knockout strip, conduit, adapters, holders and many others. For complete installation details consult your local Permaflector representative listed on Page Twelve.



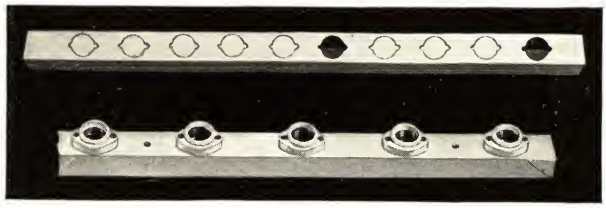
LOUVERS



COLOR-LITES



ROUNDELS



CONDUIT, KNOCKOUT STRIP



ADAPTERS AND HOLDERS

A FEW TYPICAL PERMAFLECTOR INSTALLATIONS

Some of the nationally known firms listed below have been Permaflector customers for years—a direct result of efficient performance and dependability. Twenty-eight years of careful design and workmanship have made Permaflector lighting equipment the standard of accuracy and quality in the lighting field.

When you specify Permaflectors in your plans you also specify permanent efficiency. The lighting in your structure will be modern for many years to come because it will remain "functionally efficient."

If you do not reside in one of the cities shown here and would like to inspect a Permaflector installation, consult your local Permaflector representative. He will gladly arrange to show you an installation of Permaflectors in your city.

Department Stores

Gimbel Brothers.....New York City
Marshall Field & Co.....Chicago, Ill.
Frederick & Nelson.....Seattle, Wash.
Robert Simpson Co., Ltd.....Toronto, Canada
Wanamaker's .....Philadelphia, Pa.

Industrial Buildings

International Harvester Co.....Indianapolis, Ind. and
(Sales & Service).....Winnipeg, Canada
General Steel Castings Corp.....Eddystone, Pa.
Carnegie-Illinois Steel Co.....Pittsburgh, Pa.
American Sheet & Tin Plate Co.....Gary, Indiana
Glenn L. Martin Company.....Baltimore, Md.

Auditoriums

Severance Hall.....Cleveland, Ohio
Roosevelt High School.....Washington, D. C.
Fort Slocum.....New Rochelle, N. Y.
Women's Contemporary Club.....White Plains, N. Y.
Carmichaels High School.....Carmichaels, Pa.

Schools and Colleges

University of Washington.....Seattle, Wash.
Columbia University.....New York City
West Point M. A. Gymnasium.....West Point, N. Y.
Howard University.....Baltimore, Md.
University of Vermont,
Southwick Memorial.....Burlington, Vt.

Office Buildings

Oliver Building.....Pittsburgh, Pa.
Archives Building.....Washington, D. C.
Merchandise Mart.....Chicago, Ill.
Manufacturers Trust Co.....New York City
New Interior Department Building.....Washingon, D. C.

Other Installations

Horace C. Henry Art Gallery.....Seattle, Wash.
Pittsburgh Equitable Meter Co.....Pittsburgh, Pa.
Bronx Zoological Garden.....New York City
Royal Ontario Museum.....Toronto, Canada
American Museum of Natural History.....New York City

A 10-YEAR GUARANTEE AND A 22-YEAR RECORD

While there are guarantees and guarantees, a guarantee backed by twenty-two years of practical experience means something. When a customer purchases Permaflectors, he is less interested in the assurance that a responsible manufacturer will replace the equipment if it turns out to be defective than he is in the comfort of this conviction that the product is so good that it will never have to be replaced, a conviction backed up by twenty-two years of nearly faultless production.

"We unconditionally guarantee to the original purchaser that the backing on Pittsburgh silver plated glass reflectors will not crack, check or peel, and that the silvered reflecting surface will not tarnish, for a period of ten years from date of purchase from us."

If a Permaflector does not make good, we do, but from the 22-year record of almost perfection in the manufacture of silver plated glass reflectors you know that there is not one chance in ten thousand that any of the Permaflectors you purchase will go bad.

USING YOUR PERMAFLECTOR ENGINEERING SERVICE



We urge you to make free use of the services of our entire engineering staff. In addition to the Permaflector engineers in the field we maintain a staff of specially trained and experienced illumination engineers at our office in Pittsburgh. All of these men are thoroughly equipped to assist you in the selection of correct Permaflector equipment and in planning its installation. Their sympathetic understanding of architectural practice enables them to faithfully carry out the objectives created by the architect in each design.

Most architects prefer to use the above service. However, for those specialists whose experience and training permit them to detail lighting specifications, we offer our three Permaflector catalogs.



Catalog No. 38



Catalog No. 39



Catalog No. FL-1A

Permaflector Catalog No. 38 contains complete information on the entire line of Permaflectors, accessories and fittings.

Permaflector Catalog No. 39 presents complete details on Permaflector Fixtures, Lamps and Urns.

Permaflector Catalog No. FL-1A is devoted to complete details on Permaflector Floodlights.

For copies of these catalogs write direct to our Engineering Department in Pittsburgh or call your local Permaflector representative.

PERMAFLECTOR *Lighting*

PERMAFLECTORS · LUSTROLIERS · LUMINAIRES · SPOTLIGHTS · URNS
FLOODLIGHTS · LAMPS · BUILT-IN CEILING UNITS · ACCESSORIES

PERMAFLECTOR ENGINEERS

BRANCH OFFICES

CHICAGO, ILL.,
R. O. Williams, Mgr., 1158 Merchandise Mart. (Superior 0970).

NEW YORK, N. Y.,
Chas. H. Goddard, Mgr., 1775 Broadway (Circle 7-7055).

"Pittsburgh" Permaflector

REPRESENTATIVES

ATLANTA, GA.,
M. L. Whitman, Bona Allen Building (Walnut 0978).

BALTIMORE, MD.,
W. B. Masland Co., 621 W. North Ave. (La Fayette 4544).

BOSTON, MASS.
Detweiler-Bell Co., 25 South St. (Hancock 6191).

BUFFALO, N. Y.,
H. H. Mallon, 140 Elmwood Ave. (Lincoln 8954).

CLEVELAND, OHIO,
Handel-Davies Co., 202 Chester-Twelfth Bldg. (Main 2684).

DALLAS, TEXAS,
Geo. E. Anderson Co., Sante Fe Bldg. (7-4013).

DENVER, COLORADO,
Paul A. Douden, 1645 Wazee St. (Keystone 6798).

DETROIT, MICHIGAN,
J. Morris Jones, 8531 Orangelawn Ave. (Hogarth 5156).

INDIANAPOLIS, IND.,
Scott-Jaqua Co., Indiana Terminal Warehouse (Riley 7825).

KANSAS CITY, MO.,
Mervin Simons, 613 Manufacturers Exchange Bldg. (Harrison 2768).

LOS ANGELES, CALIF.,
Frank E. Hastings, 810 Transportation Bldg. (Trinity 9801).

MIAMI, FLA.,
Chalmers M. White, Ingraham Bldg. (2-6771).

MINNEAPOLIS, MINN.,
Balch Electric Co., 126 S. Tenth St., S. (Atlantic 3307).

OMAHA, NEBR.,
Garritt S. Felt, Merchants National Bank Building (Webster 3311).

PHILADELPHIA, PA.,
Hopkin Bros., Inc., 116 N. 7th St. (Lombard 8368).

RUTHERFORD, N. J.,
H. G. Otis, 131 Woodward Ave. (Rutherford 2-4740).

ST. LOUIS, MO.,
Hawkins & Hagen Electrical Sales Co., 315 N. 21st St. (Chestnut 4821).

SALT LAKE CITY, UTAH,
Raymond Ackerman, 318 Dooly Block (Wasatch 7282).

SAN FRANCISCO, CAL.
H. A. Gardner, 807 Flatiron Bldg. (Garfield 1885).

SEATTLE, WASH.,
Lyman D. Morgan, 239 Securities Bldg. (Elliott 7500).

WASHINGTON, D. C.,
Sam Masland, 410 Bond Building (National 3934).

PITTSBURGH REFLECTOR COMPANY
OLIVER BUILDING, PITTSBURGH, PENNSYLVANIA

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Section Number 1 / 5 Catalog Number

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Stanley & Patterson Div. of Schwarze Electric Co. 25/9
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AMERICAN DISTRICT TELEGRAPH COMPANY

Electric Protection Services Against Fire, Burglary and Holdup

155 Sixth Avenue, NEW YORK, N. Y.

A.D.T. Central Stations are located in all principal cities of the U. S. They operate under the name "American District Telegraph Company," with the following exceptions:

CHICAGO AND ELSEWHERE IN ILLINOIS, Illinois District Telegraph Co.
DETROIT, MICH., The American Still Alarm
CITIES IN NEW JERSEY, American District Telegraph & Messenger Co.
CINCINNATI, OHIO, Ohio Messenger & Telegraph Co.
PHILADELPHIA, PA., Philadelphia Local Telegraph Co.
CITIES IN KENTUCKY, American Protection Co.

The AMERICAN DISTRICT TELEGRAPH COMPANY, founded in 1873, is a nation-wide organization whose sole business is the manufacture, installation, maintenance and operation of Protection Systems against Fire, Burglary and Holdup. The services offered are of three basic types, described below.

Central Station Service

The protection system at the subscriber's premises is electrically connected to the A.D.T. Central Station where the signals are immediately acted upon by emergency patrol forces, with police and fire department co-operation when necessary. This service provides continuous electrical supervision and complete maintenance of all systems. Available in more than 350 cities.

Proprietary Systems

The proprietary system provides for owner operation and maintenance. The protection equipment is connected to a local central station within the protected premises, where operators are on duty to take action when signals are received. Proprietary installations are available anywhere in the United States, but are recommended chiefly for large establishments in locations where Central Station service is not available.

Local Alarm Systems

Equipment is furnished for local systems, which give warnings of fire, burglary and other emergency conditions by means of audible signals. Available anywhere in the United States.

A.D.T. PROTECTION SYSTEMS INCLUDE THE FOLLOWING:

Watchman Supervisory System—The unique A.D.T. Watchman's "Compulsory Tour" System compels the watchman to follow a prescribed sequence of stations on his tour and to signal periodically from transmitting stations electrically connected to the Central Station. The transmitting stations can be actuated only by setting up the watchman's register (key) in a series of preliminary stations. Any failure of the watchman to signal the Central Station results in an immediate investigation.



Preliminary Station

Manual Fire Alarm System—Fire alarm boxes for manual operation are installed at convenient points throughout the premises. Operation of any box sends a coded signal to the Central Station and the fire department, indicating the exact location from which the alarm was sent.

When desired, Central Station Manual Fire Alarm systems may be combined with the local Interior Fire Alarm system described on this page. Under this arrangement, a single pulling of the fire alarm lever will summon the fire department and at the same time sound the alarm on a system of audible signal devices within the premises.



Fire Alarm Box Flush Type

Aero Automatic Fire Alarm System—Assures the fastest possible detection of fire. Aero is a combined pneumatic and electrical system which operates on the rate of temperature rise. The pneumatic part of the system consists of inconspicuous copper tubing, .08 in. in diameter, run in loops or circuits along the ceilings or roof. Both ends of each tube circuit terminate in small metal chambers formed by expansible metal diaphragms of the aneroid barometer type. The rapid rise in temperature caused by a fire condition results in increased pressure within the tubing, which bulges the diaphragms, thereby making electrical contacts which actuate the alarm equipment. An annunciator designates the floor or section of the building where the alarm originated.

Sprinkler Supervisory and Waterflow Alarm System—Makes the sprinkler system function as an automatic fire alarm. Waterflow, whether caused by the opening of a sprinkler head or by a dangerous leak, automatically transmits a fire alarm signal to the Central Station. The service also maintains a continuous, electrical watch over all vital parts of the sprinkler system. Any trouble condition which might impair the supply of water or its proper and effective distribution, is automatically detected and reported to the Central Station, which takes immediate corrective action.

Local Interior Fire Alarm Systems—Usually installed for the purpose of warning occupants when fire breaks out, and to summon a local fire brigade.

The equipment includes manual fire alarm boxes, with or without Central Station connection, which, when operated, sound a coded alarm on a system of local gongs or other audible signal devices. The systems are of two types: General Alarm type, which sounds all the gongs simultaneously; and the Pre-Signal type, which first sounds the alarm on a system of pilot gongs audible only in certain locations.


A.D.T. Single Stroke Gong

Burglary and Holdup Alarm Systems—Include electrical protection equipment for all types of mercantile, industrial and banking premises so that immediate warning is given to the Central Station and police in case of burglary or holdup. Available in both Central Station and local types. Underwriters' "Grade A" Certificates furnished.

Approval

All A.D.T. equipment is inspected and listed as standard by the Underwriters' Laboratories. The systems meet all requirements of insurance underwriters and other authorities having jurisdiction.

Specifications

Detailed descriptions and specifications of any A.D.T. system will be furnished upon request. Without obligation A.D.T. will furnish drawings and complete engineering advice regarding any type of installation. Write to the nearest office, or A.D.T. headquarters, 155 Sixth Avenue, New York, N. Y.

EDWARDS & COMPANY, INC.

Electrical Signaling Apparatus

NORWALK, CONN.

ADEQUATE SIGNALING FOR THE RESIDENCE

For Your Convenience

This listing is designed to generalize in such a way that the Architect may apply it to a specification for any residence. It will assure complete and efficient signaling but leave such details as finish, etc., to be decided toward the end of the job in co-operation with the owner.

While this information is applied to an average 8-room (or larger) home, with a resident servant, convenient signaling dictates exactly the same consideration for the smaller home, except that Service Signals are, of course, unnecessary.

Entrance Signals

Keep them audible and audible only. They should never be connected to an annunciator. The person interested should always be able to tell immediately, from the nature of the sound, what entrance is calling. It should never be necessary to first look at and then reset an annunciator before answering an entrance call.

On the other hand, audible signals should never be annoying. The best arrangement for a home with servant is: a bell for front door and buzzer for rear door located in the kitchen vicinity for servants to hear and answer. In the front hall where it can be heard throughout the house should be a pleasant musical chime—two notes for front and one note for rear door.

The chime is used only when servants are out because the owner does not want to hear entrance signals while servants are there to attend to them. Therefore, this plan calls for a switch located in the kitchen, which, in one position silences the chime and keeps kitchen signals operating; thrown to the other position, when servants go out, the kitchen signals are silenced and pleasant chime notes are audible through the house.

Dining Room Signal

This, too, should be an audible signal—not connected to an annunciator. It must be entirely different from other signals, heard clearly in the kitchen but not audible to people in the dining room. In the dining room the movable floor tread is always within reach of the hostess' foot and does not necessitate a hole in the carpet.

Service Signals

These should always connect to an annunciator with calling stations at every location where anyone might be at any time. The cost is negligible. Such locations as bathrooms, lavatories, porches, etc., should not be overlooked. Calling stations need not be just unattractive push buttons. See following page.

Public Telephones

Because these should be conveniently co-ordinated with house telephones and signaling, the following suggestions are made: In addition to the usual instrument in the front hall, place an extension instrument in master bedroom with switch so bell may be silenced, and one in the kitchen for servants' use when owner is not available.

Private House Telephones

An instrument in the master bedroom and one in the kitchen vicinity allows quick communication at any time without inconvenience or delay. If owner has public telephone silenced while retired or resting, the servant may call owner on the house telephone if an important call has come in on the public telephone.

Other Important Considerations

A push button in the kitchen and single note bar type chimes in first and second floor halls provide a dignified and efficient way for the servant to tell any member of the family that there is a telephone call. One note for Mr., two notes for Mrs., etc.

For full convenience, all signals should be audible in the servants' quarters as well as the daytime kitchen location. Most present day plans locate servants' quarters adjacent to the kitchen and the signals will be heard if placed on that wall of the kitchen nearest the servant quarters. If servant quarters are far removed from the kitchen, the specifications should include: "an extension to all service and entrance signals shall be provided in servants' quarters where shown on plans."

The ordinary "bell ringer" transformer will not operate anything efficiently but a doorbell. The accompanying specification includes an inexpensive "signaling transformer" which will handle the complete signaling system.

For Architects' Protection

A complete detailed signaling specification is recommended to prevent owner inconvenience and annoyance in an otherwise complete and lovely home. The following page shows but a few of the complete line of conveniences in your Edwards catalog. The Engineering Department of this company will co-operate in planning for larger homes, special conditions, etc. Edwards equipment also covers the industrial, school, hospital, and apartment field of signaling.

SPECIFICATIONS FOR ADEQUATE SIGNALING

All kitchen signaling devices shall be grouped together at the location shown on plans. An Edwards flush No. 672 Annunciette shall be installed with the lower edge 5 ft. 6 in. above finished floor. It shall have as many drops as there are calling stations and each drop shall carry the correct room designation, not a number.

Immediately under the Annunciette, the following signals shall be grouped in one switch box and covered with one multiple gang plate; Edwards No. 662 flush bell and buzzer for front and rear entrances respectively; No. 663 Melocall for dining room signal; No. 664 Togelpush for telephone paging, and No. 665 Toggle-switch to silence above entrance signals and throw entrance chime in circuit.

In front hall where shown on plans, shall be installed an Edwards two-entrance tubular chime, design and finish to be selected later by owner. This shall be connected so it is in service only when kitchen signals are silenced.

Dining room signal shall be an Edwards 235 plug with No. 290 floor-tread and 6 ft. of cord.

Service calling stations connected to the Annunciette shall be located where shown on plans and shall be of the type listed herewith:

Living Room .....
Master Bedroom .....
Bedroom 2.....
Etc., Etc., (See following page)

Private telephones shall be installed between the master bedroom and kitchen. They shall be located where shown on plans and shall be Edwards No. ..... in the kitchen and No. ..... in the bedroom. (See following page).

Install where shown on plans in first and second floor halls an Edwards single note, bar type chime, style and finish to be selected later by owner. These shall be connected to the push in kitchen for telephone paging.

Front and rear entrance pushes shall be of forged type, Edwards No. 650, finish to be selected by owner.

The complete system shall be operated from an Edwards No. 88 signaling transformer.

Each device shall be of Edwards manufacture so as to constitute a complete system under the manufacturer's guarantee.

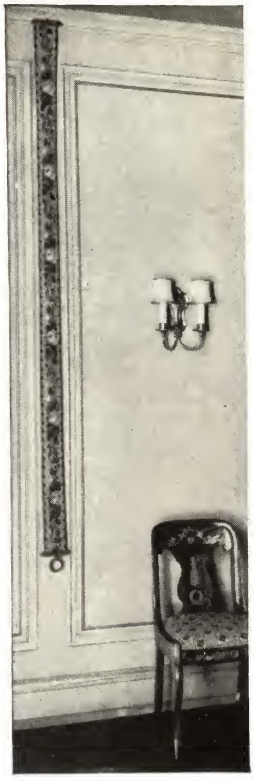


Ideal Kitchen Arrangement

Described on preceding page. Annunciette on top; door signals, push and switch mounted flush in wall under Annunciette. Utility shelf for public telephone, etc. Under shelf hangs No. 4854 house telephone. House telephone may be put on shelf, too, if desired—No. 4852.

House Telephones for Bedroom, etc.

As public telephone takes considerable room on bedside table hanging type like above (No. 4854) is desirable. Table type is No. 4852. Flush wall type is No. 4801. All may be specified Ivory finish.



Tapestry Bell Pull

A charming living room is added to by the tapestry bell pull. No. 280 switch is mounted in wall at ceiling line and owner selects and attaches tapestry or rope. Very often desired by owners in bedrooms, too.



Chimes in the Entrance Hall

Not only efficient but attractive. Edwards chimes are made in period styles: Modern, Colonial, Georgian, Spanish, etc. Larger models sound Westminster chime. Ofter installed in architectural wall recess. See your Edwards catalog for details. Specification on preceding page covers installation but allows final selection of style to owner.

EDWARDS PUSH BUTTONS



No. 60 Screwless Escutcheon

Prevents soiled wall paper and paint. Made of brass it is available in all finishes. Push button may be pearl center (No. 620) but rounded glass center (No. 625) is preferable — will not break ladies fingernails. Available in white, blue, amber, black, red and luminous center. Example Spec. *No. 625 blue push in No. 60 pol. br. escutcheon.*



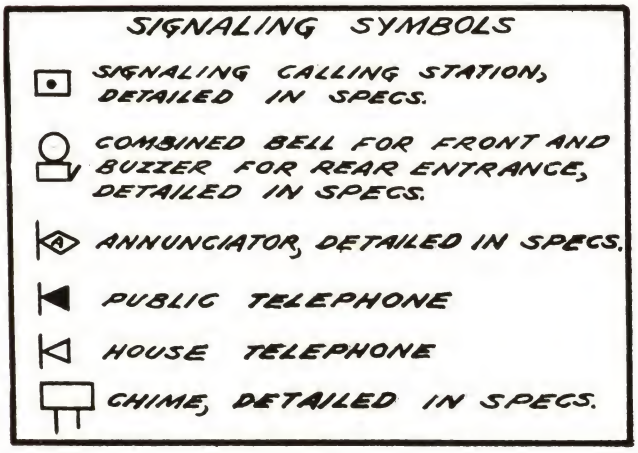
The Ideal Arrangement for Dining Room

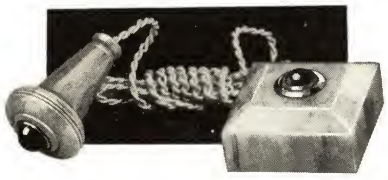
Floor tread is out of sight under carpet. Easily moved when table is extended. Carpet need not be cut. Included in specification on preceding page.



No. 650 Push

Lovely doorways should not be spoiled with cheap stamped pushes. No. 650 is forged brass in many finishes. Others shown in Edwards catalog.





Attractive French Type Bedside Table and Pendant Pushes

These add to the decorative scheme of the bedroom. Many color bases with jeweled center pushes and ivory bases. See Edwards catalog. Example Spec. *No. 150 table-push, cord and No. 158-235 base plug, type and color to be selected later.*

INTERNATIONAL BUSINESS MACHINES CORPORATION

INTERNATIONAL TIME RECORDING DIVISION

Manufacturers of Electric Time, Signal Program, Telephone, Fire Alarm and Central Control Sound Systems

WORLD HEADQUARTERS BUILDING
590 Madison Avenue, NEW YORK, N. Y.

CANADIAN DIVISION: 300 Campbell Avenue, TORONTO, ONTARIO

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WHEELING, W. VA.
WICHITA, KAN.
WINSTON-SALEM, N. C.
YOUNGSTOWN, OHIO

ELECTRIC TIME AND PROGRAM EQUIPMENT

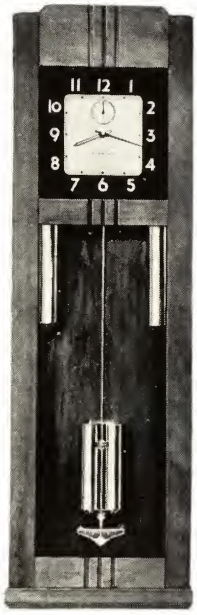


Metal Case Secondary Clock

International manufactures hundreds of different types of time recording, indicating and signaling devices. Most of these are furnished for operation individually or as secondary units in a master clock controlled system. In the latter case, any building or group of buildings is furnished with completely automatic and dependable electric time service. Attendance time recorders, job time recorders, wall clocks and time stamps operate in exact unison.



A Typical Tower Clock Built to Meet the Architect's Special Requirements



International Master Clock with Mercurial Pendulum

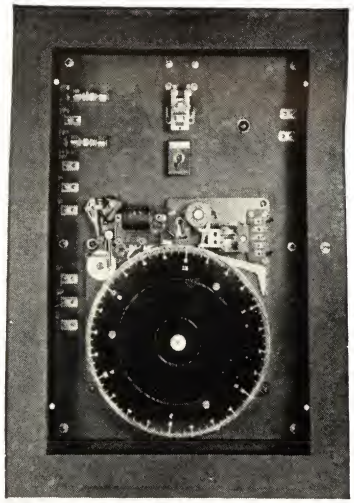
Program equipment, operated as part of the International Self-regulating Electric Time Systems, makes it impossible for clocks or bells to contradict each other. Through its use, classes are moved, work periods are designated or phases of process work are marked by audible signals — exactly as scheduled.

All International equipment is furnished according to architects' specifications — designs, styles, etc., to meet individual requirements, architectural or decorative schemes. Consult representatives for full details.



Marble Dial Secondary Clock

This Clock System, of the electric impulse type, features automatic, electric regulation. Once each hour all units are simultaneously supervised. That is, they are checked or aligned for continuous agreement with their master time source. Practically all maintenance is thus eliminated. This system ordinarily operates from the commercial lighting circuit, but battery operation is furnished when necessary.



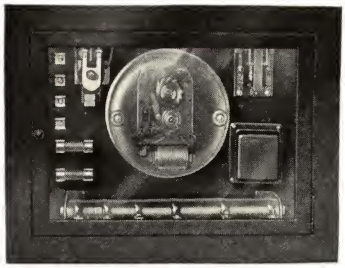
The International Metal Disc Program Signaling Unit

FIRE ALARM EQUIPMENT

International Fire Alarm Systems offer the most up-to-date equipment for the protection of property and life. Only the latest engineering features and approved circuits are included in each installation. Expert workmanship and rugged construction assure highest quality at minimum cost. Systems for any requirement built to specification.



Fire Alarm Gong



Fire Alarm Control Panel

All International equipment, including Fire Alarm Systems, has been approved by the National Board of Fire Underwriters.



Break Glass Station

Data sheets are available in all International offices covering the complete range of equipment from the simplest non-code to the most elaborately supervised and coded systems. To meet every individual need, a wide variety of bells, horns, sirens and other alarm sounding devices has been provided.

INTER-ROOM TELEPHONE SYSTEMS



Cradle Type Telephone

International Telephone Systems are specially designed only for interior communication in schools, business organizations, apartment houses, residences, etc. Several types are available to meet specified requirements.



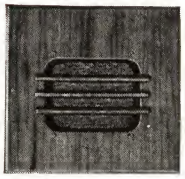
Telephone Push-Button Mat

All equipment is specially designed for the greatest convenience, ruggedly constructed to furnish the highest quality service at minimum cost. Operation of all types is extremely simple. Either direct or alternating current may be employed as desired. Many types of telephone instruments in both pedestal and wall models are available.



Flush Wall Telephone

CENTRAL CONTROL RADIO, MUSIC AND SPEECH SYSTEMS



Surface Wall Type Sound Reproducer

For those places where sound must be amplified to reach large audiences and for institutions where it is desirable to distribute sound programs simultaneously throughout a number of different rooms in any one or more buildings, International provides an unusual Central Control Radio, Music and Speech System. It permits the flexible use of radio, phonograph or microphone programs through one instrument that is as simple to operate as the ordinary home type radio.



Single-Channel Sound Control Cabinet

A unit plan of construction is employed to permit purchase in sections. As the demand grows or as funds become available, extra sections may be added. Such additions do not make the original equipment obsolete, nor take up extra floor space.

The loudspeakers, which assure faithful, life-like reproduction, are provided in a wide range of models including both permanent field and dynamic types to meet every possible acoustic or decorative requirement. Directional horn speakers are provided for athletic fields and other outdoor uses.



Combined Secondary Clock and Sound Producer

SPECIFICATION-WRITING SERVICE

In every International office there is some one qualified to give expert help in the writing of specifications for the various types of low tension equipment listed on these two pages. An International representative will also be able to give valuable assistance in selecting the kind of equipment most suitable for each job. This service is yours, merely for the asking.

The International line includes almost every kind of time and sound distribution equipment. In addition to the systems listed here there are many specialties and accessory devices, such as paging systems, watchman's clocks, recording doorlocks, chimes, etc.

Complete information is available at any of the offices of INTERNATIONAL BUSINESS MACHINES CORPORATION listed on the preceding page.

ESTABLISHED
1867

PARTRICK & WILKINS CO.

Automatic and Semi-Automatic Annunciators, Electric Signaling Devices, Nurses' Call and Other Signaling Systems, Burglar Alarm Accessories

51 North 7th Street, PHILADELPHIA, PA.

Products

P. & W. Annunciators—Fully Automatic Reset (surface and flush); Electric-Manual Reset (surface and flush); Low Voltage Lamp (wall and desk); (110 Voltage Lamp Wall Type); Return Call Annunciator Systems.

P. & W. Electric Signaling Devices—Audible Signals, Contact Devices, Transformers, Telephones, Relays, Letter Boxes, etc.

Burglar Alarm, Hospital and School House Systems.

P. & W. Devices for Over 70 Years

The Partrick & Wilkins Co. has maintained a reputation, for more than three generations, of manufacturing or specially designing only high quality annunciators, electric signaling devices and alarms. Every effort has been made to pioneer and find a better way to satisfy users of remote communication systems. An engineering department is at the service of architects to design any special apparatus for remote signaling and to draw up complete plans and specifications for proper installation. All P. & W. products are thoroughly tested before leaving factory and are unconditionally guaranteed, if properly installed.

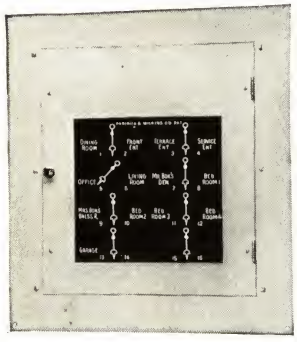
P. & W. ARROW ANNUNCIATORS

For Service Stations in Apartment Houses, Homes, Hotels and Offices

P. & W. Annunciators have overcome the complicated mechanism and parts subject to wear that one generally finds in annunciators.

P. & W. depends only on the magnetic electrical impulse to produce, by means of the deflection of an indicating arrow, the clearest form of indication possible. There is no possibility of registering a call falsely nor any possibility of mechanism going bad, as there is no excessive jarring.

FULLY AUTOMATIC RESET ANNUNCIATOR



No. 2700 Automatic Flush Type Hinged Front

Features

P. & W. Fully Automatic Reset Annunciators solve the difficulties experienced with ordinary hand or electric reset annunciators, which require resetting after every call.

A Time Saver—Requires no attention other than observing the call when made; resetting is done automatically by each new call. Annunciator can be placed at any convenient location. Indications are visible 25 ft. or more.

Simplicity of Operation—With the P. & W. Automatic Reset Annunciator there is no possible confusion, for only one, and that is the last call, remains when signal sounds.

Multiple Operation—Where residences have one or two attendants, multiple operation of automatic annunciators is often desirable, as annunciators may be placed in convenient locations so that calls may receive attention wherever attendant may be. Large residences having servants' quarters can be equipped with three or four P. & W. Automatic Reset Annunciators, all operating in multiple, entirely automatic in their function.

Up-to-Date Service—Meets the modern trend of automatic service with efficiency. There is no so called "gentle thrust" turned into a "bang" or a "punch" by a hurrying attendant, which in due time will utterly ruin any mechanism.

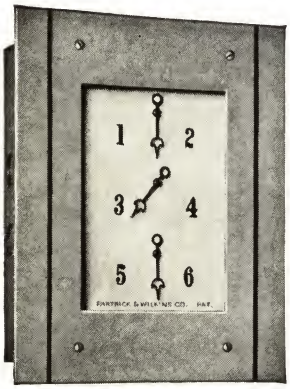
Pays for Itself—Costing but a trifle more than the less efficient hand reset types, it pays for itself requiring less voltage A-C. than competitive types for its long trouble-free life of highly satisfactory service.

Types

No. 2700 Automatic Annunciator—*Hinged Flush Type*—Specified by leading architects for installation in high grade homes, offices, institutions. Front completely removable without disturbing mechanism for installation, also has hinged section for easy accessibility. Mechanism with buzzer completely enclosed in all metal case. If bell desired inside consult for size.

Standard Finish—White Metal Front. Commercial bronze and brass fronts; also chromium and other plated finishes to order.

Dimensions—See table. Flange or trim extends ¾ in. all around.



No. 2600 Automatic Flush Type

No. 2600 Automatic Annunciator—*Flush Type*—New type all-metal construction and separate box. All wiring connections and buzzer mechanism in back of removable front plate. Especially recommended for low cost residential installations, institutions, offices, etc.

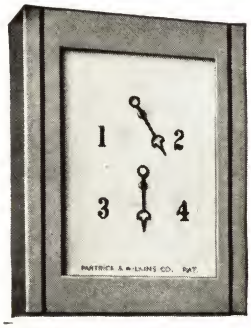
Standard Finish—Satin Aluminum with green striping—white face plate—black numerals or lettering.

Dimensions—See table. Flange or trim extends ½ in. all around.

No. 3000 Automatic Annunciator—*Surface Type*—All-metal construction with removable and dustproof metal case. Ample wiring space in back plate. All wiring connections and buzzer mechanism accessible but concealed.

Standard Finish—Satin Aluminum with green striping. Special sprayed finishes to order.

Dimensions—See table.



No. 3000 Automatic Surface Type

ELECTRIC (REMOTE CONTROL) RESET ANNUNCIATOR SYSTEM

For Small Hospitals, Residences, Offices, Etc.

Calls are permanently recorded until reset by electrical control by pushing button, located where desired. Indications are visible 25 ft. or more. Two annunciators may be located in different places and connected in multiple. Electric resetting of one will electrically reset both. Individual manual reset remains for emergency control.



No. 1100 Electric Reset Surface Type

Types

No. 3600 Electric Reset Annunciator—*Flush Type*—New type all-metal construction and separate wall box. All wiring connections and buzzer mechanism in back of removable front plate.

***Standard Finish*—**Satin Aluminum with green striping. White face plate. Black numerals or lettering.

***Dimensions*—**See table. Flange or trim extends ½ in. all around.

No. 1100 Electric Reset Annunciator—*Surface Type*—All-metal construction with removable metal case. Ample wiring space in back plate. All wiring connections and buzzer mechanism accessible but concealed.

***Standard Finish*—**Mottled Green Aluminum with green striping. Special sprayed finishes to order.

***Dimensions*—**See table.



No. 3600 Electric Reset Flush Type

P. & W. RETURN CALL ANNUNCIATOR SYSTEM

For Dormitories, Y.M.C.A.'s, Schools, Colleges, Institutions.

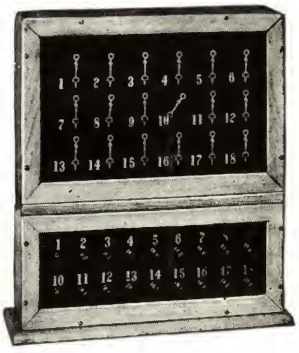
The attendant may call any room by pushing corresponding button on No. 5000 Return Call Annunciator in the office. The person receiving the call on No. 41 Surface or Flush Return Call Buzzer in his room may push a button indicating that he has received the call. The reverse operation would take place if the room desires to call the office. In many colleges and institutions it is extremely inexpensive compared to ordinary telephone or other interior communication systems. It is used to call occupants of a certain room to the telephone or office or elsewhere by coding the number of rings.



No. 41 Return Call Buzzer-Flush Type

No. 5000 Annunciator—Hand or electric reset. Surface or flush cases (metal or wood).

No. 41 Combination Buzzer and Return Call Button—Brush Brass finish or Bakelite top plates; can be mounted on standard outlet box. Surface mounting if desired.



No. 5000 Return Call Annunciator

LAMP ANNUNCIATORS

For Hospitals, Large Residences, Industrial Plants and Offices.

Low Voltage and 110-V. H Types—*Surface, Flush and Desk Types*—Wall annunciators can be furnished in either opaque glass or bullseye types. Opaque glass can be furnished with numerals ¾, 1¼ or 1⅞ in., visible only when indication is made. Bullseye type have numerals ⅞, 1¼ or 1¾ in. 110-volt annunciators can be supplied with 1¼-in. numerals or larger. Desk types have ⅝-in. bullseyes with nameholders for each bullseye.

A locking relay for each indication must be furnished if plain push buttons are used as the means of calling. These relays may be mounted in the same cabinet as annunciator (small sizes) or in separate surface or flush hinged door metal cabinets.

Indications may be reset individually, or in groups. Reset buttons may be placed on annunciator case or at any point desired.

Should locking toggle switches be used as calling stations, relays are not necessary but indications must be reset from point of origin.

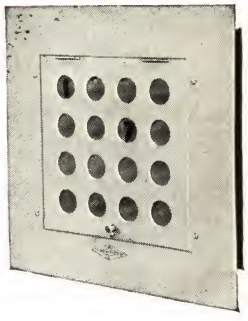
Buzzers for audible signal furnished unless otherwise specified.

***Voltage*—**12 to 16 volts or 20 to 24 volts, also 110 volts.

***Finish*—**Flush cases, white standard, any plated or sprayed finish desired. Surface cases, white standard, other finishes to order.

***Dimensions*—**Depending upon arrangement of indications.

***Lettering*—**Can be furnished with certain limitations depending on size of bullseye.



Lamp Annunciator Flush Wall Type

TABLE OF VOLTAGES AND STANDARD CASE DIMENSIONS

Style	No. 3000 Automatic surface			No. 2600 Automatic wall box size			No. 2700 Automatic wall box size			No. 1100 Elec. reset surface			No. 3600 Elec. reset wall box size		
Voltage transformer	8-12 V. A-c.			8-12 V. A-c.			12-16 V. A-c.			8-12 V. A-c.			8-12 V. A-c.		
	Dimensions, inches			Dimensions, inches			Dimensions, inches			Dimensions, inches			Dimensions, inches		
	H	W	D	H	W	D	H	W	D	H	W	D	H	W	D
4 point	8⅜	6⅝	2¼	9¼	7¼	3	11½	9	3	8⅜	6⅝	1⅞	9¼	7¼	3
6 point	8⅜	6⅝	2¼	9¼	7¼	3	11½	9	3	8⅜	6⅝	1⅞	9¼	7¼	3
8 point	12⅜	6⅝	2¼	13¼	7¼	3	15½	9	3	12⅜	6⅝	1⅞	13¼	7¼	3
10 point	12⅜	6⅝	2¼	13¼	7¼	3	15½	9	3	12⅜	6⅝	1⅞	13¼	7¼	3
12 point	8⅜	10⅝	2¼	9¼	11¼	3	11½	13	3	8⅜	10⅝	1⅞	9¼	11¼	3
16 point	10⅜	10⅝	2¼	11¼	11¼	3	13½	13	3	10⅜	10⅝	1⅞	11¼	11¼	3
20 point	12⅜	10⅝	2¼	13¼	11¼	3	15½	13	3	12⅜	10⅝	1⅞	13¼	11¼	3

All over 20 points to order. Indications may be lettered (names) if specified. All annunciators made to operate on trasformer unless otherwise specified.

Complete 1939 catalog of all equipment will be furnished on request. Consult our Engineering Department

THE A. E. RITTENHOUSE CO., INC.

Electrical Manufacturers Since 1903

66 East Street, HONEOYE FALLS, NEW YORK

GENERAL SALES OFFICE: 220 Church Street, New York, N. Y.

Door Calls
Maids' Calls
Dinner Calls

RITTENHOUSE ELECTRIC DOOR CHIMES

Signals in Business Offices
Signals in Doctors' Offices
Hospitals, Churches, etc.

The old-fashioned doorbell is outmoded. Builders and home owners everywhere are replacing the irritating nerve-racking noise of high-pitched bells and rasping buzzers with the pleasing musical tones of Rittenhouse Electric Door Chimes. More pleasure is derived in the home, more pride is taken in greeting guests who have heard the chime's musical note of welcome.

Rittenhouse Chimes are nationally advertised and have been selected for exclusive installation in many leading model homes throughout the country, including "The Model Home of America," House Beautiful's "Bride's House," House & Garden's "Ideal House" and many others. Patented construction developed after years of experimentation, beautifully styled by expert designers, Rittenhouse Chimes truly represent the finest in electrical chime signals.

Rittenhouse Chime Features

Beautiful Tone—The result of proper acoustical design and the use of special chime alloys.

Smart Styling—Available in various stock finishes, also special finishes to order.

Surface Mounting—All models are surface mounting. No recess need be cut in wall to accommodate any part of the striking mechanism.

Fully Guaranteed—Like all Rittenhouse products these chimes are guaranteed 100%.

AMBASSADOR FOUR-TUBE MODELS

These beautiful multi-tube models sound an 8-note Westminster chime sequence. Also available are two additional single-note signals for rear or side entrance, maids' calls, etc.

Specifications Model A-400

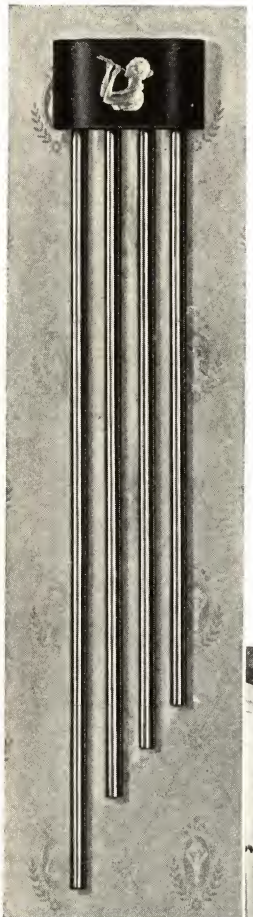
Length 55 in., width 10 in., depth 3½ in. Suitable for installation either on wall surface or in a wall niche. Minimum recommended niche dimensions 58 in. high by 12 in. wide. (This is for a rectangular niche. For an arched top, niche must be accordingly longer.) Shield is beautifully finished in either Ivory or Antique Bronze with Brushed Brass figure. Chime tubes are Brushed Brass. Can also be supplied, at slight additional charge, specially finished to order, or with plain housing.

List price $34.50 complete with special transformer.

Specifications Model A-500

Length 60 in., width 9½ in., depth 3½ in. Suitable for installation either on wall surface or in wall niche. Minimum recommended niche dimensions 62 in. high by 12 in. wide. (This is for rectangular niche. For an arched top, niche must be accordingly longer). Shield is exquisitely designed and is cast of solid bronze. Chime tubes are brass with an oxidized bronze finish to match the shield. This model can also be supplied specially finished to order at slight additional cost.

List price $50.00 complete with special transformer.

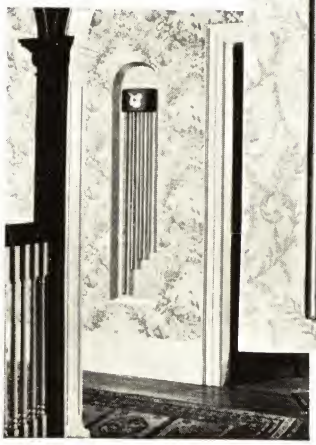


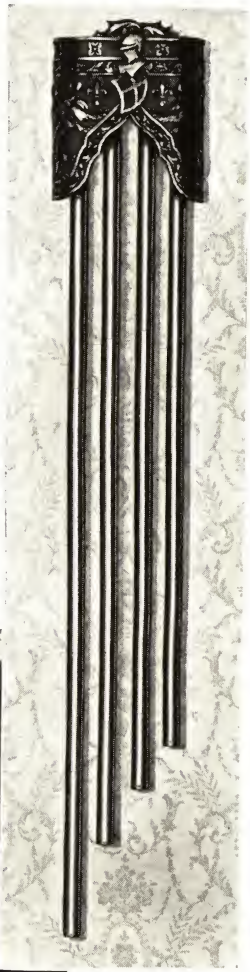
Ambassador Model A-400



Illustration at left shows a typical surface mounting installation of an Ivory A-400 model.

On the right is shown a Bronze A-400 model installed in a wall niche which affords a pleasing setting for the chimes. Niches of this type are also frequently used with an architectural grille covering.





Ambassador Model A-500

THERE IS A RITTENHOUSE CHIME TO SUIT EVERY REQUIREMENT

They Are All Guaranteed



PRESIDENT MODEL

This popular model is well suited for general door call service and is widely used in homes, apartments, offices, etc. The President sounds two rich chime tones easily heard in the average residence.

The Double Purpose model sounds a two-note signal for the front entrance and a single-note signal for the rear entrance. The Single Purpose model is the same in appearance but has the two-note signal only.

Specifications—Size 40 in. long by 7 in. wide by 2 in. deep. Operates on a-c. with the transformer supplied with it or on batteries. Beautifully finished in either Ivory with Brass or Bronze with Brass. Chime tubes are Brushed Brass. Can be supplied in Black and Chrome or specially finished to order at $2.00 additional list.

Model	Type	List price
PO-4	Double purpose	$8.00
PO-3	Single purpose	7.00

SENTINEL MODEL



This model was especially designed to occupy small wall space. Its smaller size allows it to be installed in many places where it might not be desirable to use the longer President models.

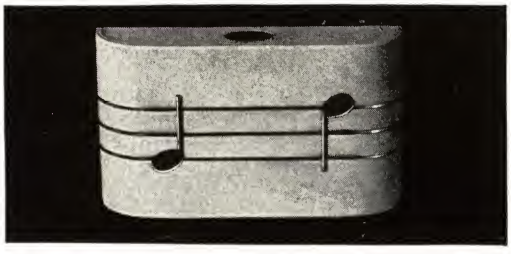
Though compact in design, the Sentinel has a beautifully rich, resonant tone that is equal in volume to the larger tubular models. It is intended for use in general door call service and is particularly well adapted for offices.

It is available in both Single and Double Purpose types. The Double Purpose type sounds a two-note signal for the front door and a single-note signal for the rear door. The Single Purpose type has the two-note signal only.

Specifications—Size 14 in. long by 6 in. wide by 3 in. deep. Operates on a-c. on transformer supplied with it or on batteries. Beautifully finished in Ivory with Brass or Bronze with Brass. Can be supplied in Black and Chrome or specially finished to order at slight additional charge.

Model	Type	List price
No. 300	Double purpose	$7.00
No. 301	Single purpose	6.25

BAR TYPE CHIMES



Twintone Model

Twintone Model is an attractive bar type chime designed for use as maids' calls, office calls and signals, etc. Frequently used for door calls in apartments and small homes, however, we recommend the louder tubular models for general door call service. The Double Purpose type has available both a two-note and a single-note signal. The Single Purpose type has the two-note signal only.

Size 7x3¾ in. Beautifully finished in Ivory with Gold or Green with Gold. Operates on any good bell-ringing transformer or on batteries.

Model	Type	List price
No. 200	Double purpose	$4.50
No. 201	Single purpose	4.00



Chime Junior

The Junior Model is a single-note bar chime suitable for maids' calls, office calls and signals, etc. Not recommended for door call service, except in small homes or apartments.

Size 8x2¾ in. Attractively finished in Ivory with Gold or Green with Gold.

Price $2.75.

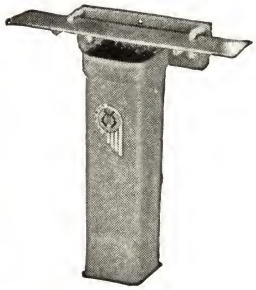


Softone Model R

Produces a medium pitch tenor note. Operates on any good doorbell transformer or on ordinary dry batteries. Attractively finished in Cameo Cream with a gold finished chime bar.

Price $1.00.

Softone Model S



Produces a pleasing deep baritone note. It is similar in appearance to the Type R, except that it has a longer resonance chamber and chime bar. Operates on any good doorbell transformer or dry batteries. Same finish as Model R.

Price $1.95.

Write for Catalog Showing Complete Rittenhouse Line of Chimes and Transformers

MEMORANDA

Wheelock STANDARDS

MANUFACTURED BY

SIGNAL

ENGINEERING & MFG. CO.
150 WEST 14th ST., NEW YORK

Wheelock STANDARDS

MFD. BY
SIGNAL
ENGINEERING & MFG. CO.
150 WEST 14TH STREET, NEW YORK

For more than a quarter century, Signal Engineering & Mfg. Company has always set the pace in design and construction. Having engineered and developed the alternating current Fire Alarm System . . . the Solenoid Underdome Bell . . . the patented Automatic Master Code Fire Alarm System . . . the patented March-Time Fire Alarm System (continuous ringing) with single stroke instead of vibrating bells or horns, and other achievements . . . the outstanding superiority of Wheelock Standards in Interior Fire Alarm equipment, as in other Wheelock products, is generally recognized.

Likewise with Wheelock Code Call Systems . . . the same pioneering and development in advanced design and construction have resulted in many patented features and the general recognition of "Wheelock" as Standard in code call equipment.

A signal system is no better than its relays. The prominent position in the relay field, maintained by this company year after year, has been largely responsible for the broad acceptance of Wheelock Relays as Standard.

Signal Engineers are available to assist architects, engineers, contractors and manufacturers in problems within the scope of Wheelock Apparatus; in supplying circuit diagrams, estimates, specifications, and in the development of special apparatus to meet specific requirements.

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Fire Alarm . . . . . Pages 3 to 9
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Wheelock Standards call for—

Designs, circuits, materials and workmanship to excel, and laboratory tests to exceed—essential requirements of "approval" laboratories, agencies, and jurisdictional boards.

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Wheelock STANDARDS

FIRE ALARM SYSTEMS

The two general types of Fire Alarm Systems in common use are:

(1) Systems using non-code break glass stations in which the location of the particular operated station is not indicated.

(2) Systems using pull lever coded stations, in which the location of the operated station is indicated by the particular code sounded.

(1) Systems using non-code stations are furnished in two types: (a) March-Time System (continuous-ringing), in which breaking glass or opening door of station automatically sends a continuous series of single strokes on all signals, until the station is restored to normal; and (b) Master Code Alarm System, in which breaking glass or opening door of station automatically sends a definite number of rounds of a code — such as 3-3 or 4-4 — on all signals, after which trouble bell rings until the station is restored to normal.

These systems have exclusive patented features in the use of the Wheelock Automatic Interrupter, in that they require no winding or resetting of any kind, and that they have an adjustment for timing the interval between strokes.

(2) Systems using coded stations are also furnished in two types: (a) General Alarm System, in which every signal device operates when a station lever is pulled, giving a general alarm corresponding with the number of the station; and (b) Presignal Alarm System, in which only signal devices on the preliminary alarm circuit are operated when a station lever is pulled. These signals are located within hearing of a fire squad or other emergency force having authority to investigate cause of the alarm. In case of fire of proportions to endanger occupants of building, a key is inserted in the station and the lever pulled again, thus causing operation of all signal devices. This system is designed for use in such buildings as hospitals, hotels, etc., where it is not desirable to sound a general alarm unless there exists an actual fire which is serious enough to require evacuation of premises.

These systems may use either the "Open Door, Pull Lever" type of station or the "Break Glass, Open Door, Pull Lever" type, the latter being particularly suitable for such buildings as hotels or schools.

All coded stations may be provided with means to prevent mixing of signals when two stations are pulled at the same time, at no extra cost.

Panel wiring and all signal and station loops of all systems are fully supervised.

It is impracticable to enumerate the many possible modifications of above basic principles, but it is only necessary to specify "Wheelock Standards" and state just what is to be accomplished.

FIRE ALARM SYSTEMS

March-Time

(Continuous Ringing)

NON-CODE STATIONS

(Detailed Specification opposite)



Trouble Bell



Fire Alarm Bell
Sizes: 4"-6"-8"-10"-12"

Are those in which breaking of glass or opening of door of station automatically causes the sounding on all signals of a continuous series of single strokes. (The Wheelock Standard System is the only one in which the timing is adjustable to such as march-time.)

Not more than 14 signals per circuit may be used with 110 volts direct current, not more than 10 per circuit with 110 volts 60 cycle alternating current, and not more than 8 per circuit with 24 volts direct current.



Non-Code, Break Glass

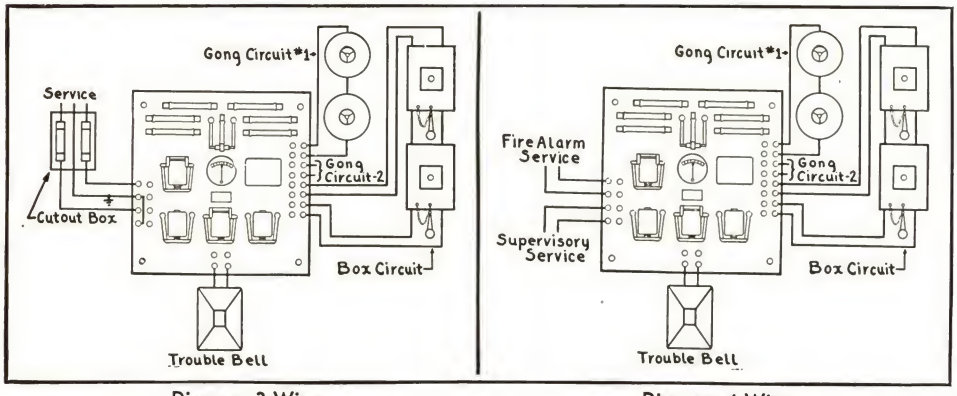
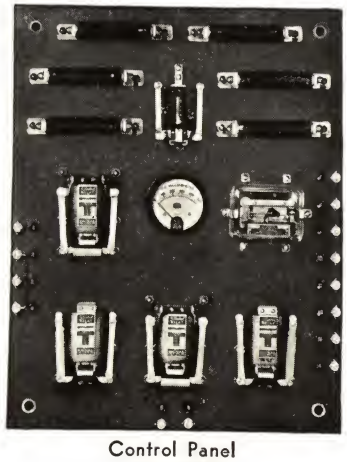


Diagram 3-Wire

Diagram 4-Wire



Control Panel Type G201

Master Code

NON-CODE STATIONS

(Detailed Specification opposite)



Trouble Bell



Fire Alarm Bell

Are those in which breaking of glass or opening of door of station automatically causes the sounding on all signals of four rounds of a code such as 3-3 or 4-4. (The Wheelock Standard System requires no winding or resetting, and time between strokes is adjustable.)

Not more than 14 signals per circuit may be used with 110 volts direct current, not more than 10 per circuit with 110 volts 60 cycle alternating current, and not more than 8 per circuit with 24 volts direct current.



Non-Code, Break Glass

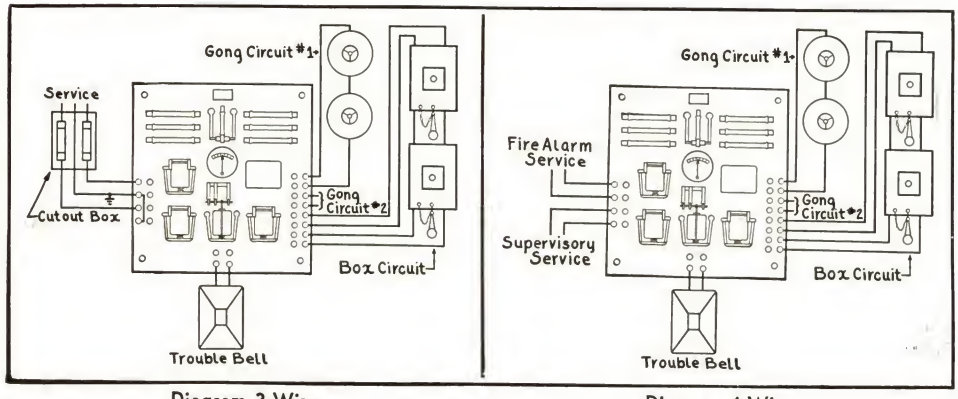
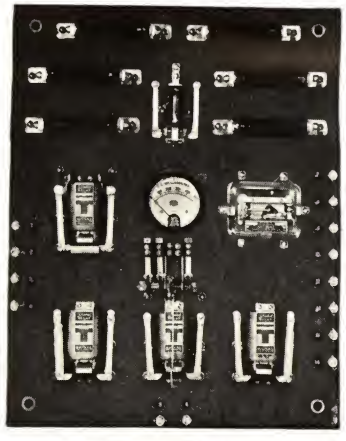


Diagram 3-Wire

Diagram 4-Wire



Control Panel Type T201

The contractor shall furnish and install complete with all conduit, wiring and connections a complete fire alarm system, all in accordance with the following and as shown on plans which form part of this specification.

System: The system shall be the Wheelock Standard March-Time (continuous ringing) Type as manufactured by the Signal Engineering & Mfg. Co.

Operation: Breaking glass or opening door of station shall transmit a continuous series of single strokes on all signals, until the glass is replaced and the station door closed. The trouble bell shall continue to ring until the glass is replaced and the station door closed. The apparatus must be so made as to *allow adjustment of timing between strokes.*

Control Panel: Shall be located in apparatus room in basement as shown on plans (locate in a conspicuous and accessible place). Panel shall be of Ebony Asbestos and equipped with necessary supervisory and control equipment, and furnished and installed complete with surface (or flush) type cabinet. Conduits shall enter cabinet through knockouts only on sides or bottom.

Relays: Shall have laminated cores. Armatures shall be hinged on stainless steel shafts in suitable bearings. Coils shall be form wound, cotton impregnated, and baked so as to be moisture-proof, and *shall stand a breakdown test of 2500 volts 60 cycles for 5 seconds between winding and core.*

Supervision—Single: Panel wiring and all signal and station loops shall be fully supervised. Trouble bell shall sound in the event of a break or a ground on either the bell or station circuit, while any station glass is broken or door is open, or in the event of main power failure.

Supervision—Double: (Same as above, and) Arrangements shall also be made to sound a trouble bell in the event of failure of the auxiliary power supply.

Trouble Bell: External trouble bells of the number needed to correspond with the supervision required shall be provided and located as specified.

Stations: Shall be of the plain non-code break glass type operating on a *supervised* circuit and shall be adapted for use in a single gang switch opening. There shall be a total of ( ) stations, arranged on ( ) loops.

Signals: Bells shall be ( ) in. single stroke solenoid type with form wound moisture-proof coils, underdome, rust proofed and finished in dull black. Coils *shall stand a breakdown test of 2500 volts 60 cycles for 5 seconds between winding and frame.* The bell shall be so designed that the mechanism will mount into a universal outlet box, 3¼x4x2⅛ inches with ½ inch knockout on each side and at the back, equipped with a terminal block which eliminates splicing and soldering. The bell shell shall cover the entire mechanism. (8", 10" or 12" bells may be specified). There shall be a total of ( ) bells, arranged on ( ) loops, located as follows ( ).

Current Supply: (Four Methods, Select one)

Single Supervised: The system shall be connected to the 3-wire ( ) volt commercial supply with grounded neutral, with trouble bell arranged to indicate power failure on the side of the circuit which supplies the alarm system.

Single Supervised: The system shall be connected to a 2-wire ( ) volt supply to operate the alarm system and to a separate 2-wire ( ) volt supply for supervision, with trouble bell arranged to indicate power failure on the circuit which supplies the alarm system.

Double Supervised: The system shall be connected to the 3-wire ( ) volt commercial supply with grounded neutral, with trouble bells arranged to indicate power failure in either side of the circuit.

Double Supervised: The system shall be connected to a 2-wire ( ) volt supply to operate the alarm system and to a separate 2-wire ( ) volt supply for supervision, with trouble bells arranged to indicate power failure in either supply circuit.

Wiring: Stations on each loop shall be connected in parallel across the two sides of the loop, starting from two of four station terminals on the panel and after connecting through all stations on that loop returning to the other two terminals of that loop. For signal circuits provide two No. 14 wires per loop, on which the signals of that loop are connected in series. Connection diagram shall be furnished by manufacturer, and all wiring is to be according to standard requirements as given for lighting and power elsewhere in the specifications.

The contractor shall furnish and install complete with all conduit, wiring and connections a complete fire alarm system, all in accordance with the following and as shown on plans which form part of this specification.

System: The system shall be the Wheelock Standard Master Code Alarm Type as manufactured by the Signal Engineering & Mfg. Co.

Operation: Breaking glass or opening door of station shall send four rounds of the code (such as 3-3 or 4-4) on all signals. Operation of the system shall then cease automatically, but the trouble bell shall continue to ring until glass is replaced and station door closed. The apparatus must be so made as to *allow adjustment of timing between strokes.*

Control Panel: Shall be located in apparatus room in basement as shown on plans (locate in a conspicuous and accessible place). Shall be of Ebony Asbestos and equipped with necessary supervisory and control equipment, and Master Code Transmitter, and furnished and installed complete with surface (or flush) type cabinet. Conduits shall enter cabinet through knockouts only on sides or bottom.

Relays: Shall have laminated cores. Armatures shall be hinged on stainless steel shafts in suitable bearings. Coils shall be form wound, cotton impregnated, and baked so as to be moisture-proof, and *shall stand a breakdown test of 2500 volts 60 cycles for 5 seconds between winding and core.*

Supervision—Single: Panel wiring and all signal and station loops shall be fully supervised. Trouble bell shall sound in the event of a break or a ground on either the bell or station circuit, while any station glass is broken or door is open, or in the event of main power failure.

Supervision—Double: (Same as above, and) Arrangements shall also be made to sound a trouble bell in the event of failure of the auxiliary power supply.

Trouble Bell: External trouble bells of the number needed to correspond with the supervision required shall be provided and located as specified.

Stations: Shall be of the plain non-code break glass type operating on a *supervised* circuit and shall be adapted for use in a single gang switch opening. There shall be a total of ( ) stations, arranged on ( ) loops.

Signals: Bells shall be ( ) in. single stroke solenoid type with form wound moisture-proof coils, underdome, rust proofed and finished in dull black. Coils *shall stand a breakdown test of 2500 volts 60 cycles for 5 seconds between winding and frame.* The bell shall be so designed that the mechanism will mount into a universal outlet box, 3¼x4x2⅛ inches with ½ inch knockout on each side and at the back, equipped with a terminal block which eliminates splicing and soldering. The bell shell shall cover the entire mechanism. (8", 10" or 12" bells may be specified). There shall be a total of ( ) bells, arranged on ( ) loops, located as follows ( ).

Current Supply: (Four Methods—Select one)

Single Supervised: The system shall be connected to the 3-wire ( ) volt commercial supply with grounded neutral, with trouble bell arranged to indicate power failure on the side of the circuit which supplies the alarm system.

Single Supervised: The system shall be connected to a 2-wire ( ) volt supply to operate the alarm system and to a separate 2-wire ( ) volt supply for supervision, with trouble bell arranged to indicate power failure on the circuit which supplies the alarm system.

Double Supervised: The system shall be connected to the 3-wire ( ) volt commercial supply with grounded neutral, with trouble bells arranged to indicate power failure in either side of the circuit.

Double Supervised: The system shall be connected to a 2-wire ( ) volt supply to operate the alarm system and to a separate 2-wire ( ) volt supply for supervision, with trouble bells arranged to indicate power failure in either supply circuit.

Wiring: Stations on each loop shall be connected in parallel across the two sides of the loop, starting from two of four station terminals on the panel and after connecting through all stations on that loop returning to the other two terminals of that loop. For signal circuits provide two No. 14 wires per loop, on which the signals of that loop are connected in series. Connection diagram shall be furnished by manufacturer, and all wiring is to be according to standard requirements as given for lighting and power elsewhere in the specifications.

FIRE ALARM SYSTEMS

General Alarm

CODED STATIONS

(Detailed Specification opposite)



Trouble Bell



Fire Alarm Bell
4"-6"-8"
10"-12"

Are those in which every signal device operates when a station lever is pulled, giving a general alarm coded to correspond with the number of the operated station.

Not more than 14 signals per circuit may be used with 110 volts direct current, not more than 10 per circuit with 110 volts 60 cycle alternating current, and not more than 8 per circuit with 24 volts direct current.



Break Glass, Open Door, Pull Lever

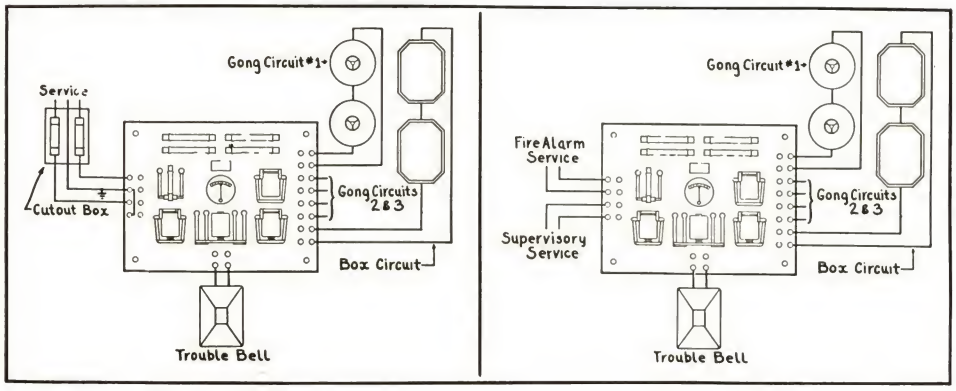
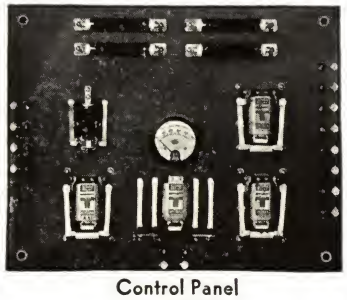


Diagram 3-Wire

Diagram 4-Wire



Control Panel
Type C301

Presignal Alarm

CODED STATIONS

(Detailed Specification opposite)



Trouble Bell



Fire Alarm Bell

Are those in which only the signal devices within hearing of a fire squad or other emergency force are operated when a station lever is pulled. In case of actual fire a key is inserted in the station and the lever pulled again, thus causing the operation of all signal devices.

Not more than 14 signals per circuit may be used with 110 volts direct current, not more than 10 per circuit with 110 volts 60 cycle alternating current, and not more than 8 per circuit with 24 volts direct current.



Break Glass, Open Door, Pull Lever

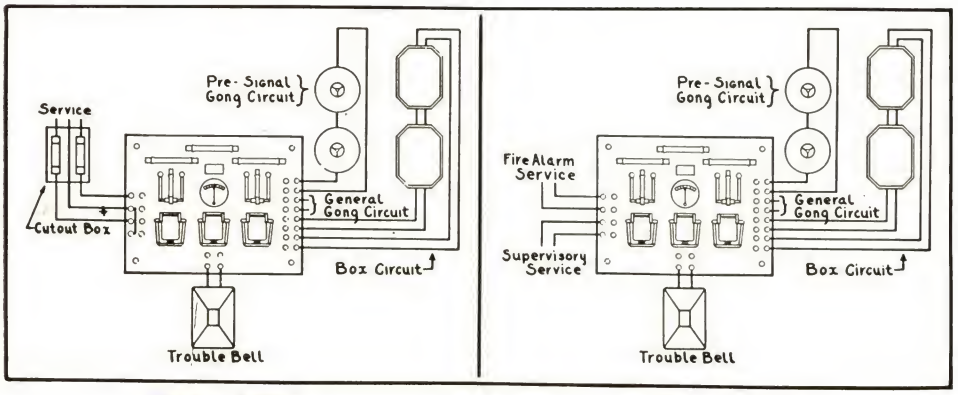
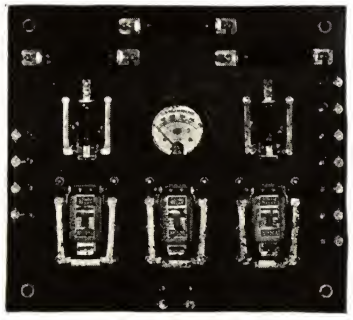


Diagram 3-Wire

Diagram 4-Wire



Control Panel
Type CD111

The contractor shall furnish and install complete with all conduit, wiring and connections a complete fire alarm system, all in accordance with the following and as shown on plans which form part of this specification.

System: The system shall be the Wheelock Standard Coded General Alarm Type as manufactured by the Signal Engineering & Mfg. Co.

Operation: Pulling down the lever of any station shall cause four rounds of the code of that station to be sounded on all signals. At the completion of the four rounds the system shall automatically restore itself to normal.

Control Panel: Shall be located in apparatus room in basement as shown on plans (locate in a conspicuous and accessible place). Panel shall be of Ebony Asbestos and equipped with necessary supervisory and control equipment, and furnished and installed complete with surface (or flush) type cabinet. Conduits shall enter cabinet through knockouts only on sides or bottom.

Relays: Shall have laminated cores. Armatures shall be hinged on stainless steel shafts in suitable bearings. Coils shall be form wound, cotton impregnated, and baked so as to be moisture-proof, and *shall stand a breakdown test of 2500 volts 60 cycles for 5 seconds between winding and core.*

Supervision—Single: Panel wiring and all signal and station loops shall be fully supervised. Trouble bell shall sound in the event of a break or a ground on either the bell or station circuit, or in the event of main power failure.

Supervision—Double: (Same as above, and) Arrangements shall also be made to sound a trouble bell in the event of failure of the supervisory power supply.

Trouble Bell: External trouble bells of the number needed to correspond with the supervision required shall be provided and located as specified.

Stations: There shall be (surface), (semi-flush), (flush) coded type stations, with codes as follows ( ), installed and connected at locations as shown on plans. Stations shall be open door, pull lever type with normally closed contacts. (Alternate, for schools, etc.—Stations shall be hinged hammer or hammer and chain, break glass, open door, pull lever type with normally closed contacts). The pull lever shall be so arranged that the pull is forward and downward, so as to permit the use of four fingers in operating. When the door is closed, the lever shall be in vertical position, flush with the surface of the movement plate. When the door is opened, the lever shall move forward to a position which will permit an easy grasp by the operator. The lever shall be so affixed to the mechanism that it cannot be removed without removing the mechanism cover and mechanism. Main spring shall be held symmetrically wound with a cup retainer. Code wheels shall be interchangeable and self locating on shaft.

Signals: Bells shall be ( ) in. single stroke solenoid type with form wound moisture-proof coils, underdome, rust proofed and finished in dull black. Coils *shall stand a breakdown test of 2500 volts 60 cycles for 5 seconds between winding and frame.* The bell shall be so designed that the mechanism will mount into a universal outlet box 3¼x4x2⅛ inches with ½ inch knockout on each side and at the back, equipped with a terminal block which eliminates splicing and soldering. The bell shell shall cover the entire mechanism (8″, 10″ or 12″ bells may be specified). There shall be a total of ( ) bells, arranged on ( ) loops, located as follows ( ).

Current Supply: (Four Methods—Select one)

Single Supervised: The system shall be connected to the 3-wire ( ) volt commercial supply with grounded neutral, with trouble bell arranged to indicate power failure on the side of the circuit which supplies the alarm system.

Single Supervised: The system shall be connected to a 2-wire ( ) volt supply to operate the alarm system and to a separate 2-wire ( ) volt supply for supervision, with trouble bell arranged to indicate power failure on the circuit which supplies the alarm system.

Double Supervised: The system shall be connected to the 3-wire ( ) volt commercial supply with grounded neutral, with trouble bells arranged to indicate power failure in either side of the circuit.

Double Supervised: The system shall be connected to a 2-wire ( ) volt supply to operate the alarm system and a separate 2-wire ( ) volt supply for supervision, with trouble bells arranged to indicate power failure in either supply circuit.

Wiring: For each loop of stations provide two No. 14 wires to form a loop on which the stations of that loop are connected in series. (Not more than twenty stations on one station loop. Panels shall be provided with extra terminals on this basis.) For signal circuits provide two No. 14 wires to form a loop on which the signals of that loop are connected in series. Connection diagram shall be furnished by manufacturer, and all wiring is to be according to standard requirements as given for lighting and power elsewhere in the specifications.

The contractor shall furnish and install complete with all conduit, wiring and connections a complete fire alarm system, all in accordance with the following and as shown on plans which form part of this specification.

System: The system shall be the Wheelock Standard Coded Presignal Alarm Type as manufactured by the Signal Engineering & Mfg. Co.

Operation: Pulling down the lever of any station shall cause four rounds of the code of that station to be sounded on the presignals. At the completion of the four rounds the system shall automatically restore itself to normal. To sound a general alarm, a key must be inserted at the station and the lever again pulled—sounding on all signals, four rounds of the code of that station.

Control Panel: Shall be located in apparatus room in basement as shown on plans (locate in a conspicuous and accessible place.) Panel shall be Ebony Asbestos and equipped with necessary supervisory and control equipment, and furnished and installed complete with surface (or flush) type cabinet. Conduits shall enter cabinet through knockouts only on sides or bottom.

Relays: Shall have laminated cores. Armatures shall be hinged on stainless steel shafts in suitable bearings. Coils shall be form wound, cotton impregnated, and baked so as to be moisture-proof, and *shall stand a breakdown test of 2500 volts 60 cycles for 5 seconds between winding and core.*

Supervision—Single: Panel wiring and all signal and station loops shall be fully supervised. Trouble bell shall sound in the event of a break or a ground on either the bell or station circuit, if any presignal key is inserted, or in the event of main power failure.

Supervision—Double: (Same as above, and) Arrangements shall also be made to sound a trouble bell in the event of failure of the supervisory power supply.

Trouble Bell: External trouble bells of the number needed to correspond with the supervision required shall be provided and located as specified.

Stations: There shall be (surface), (semi-flush), (flush) presignal, coded type stations, with codes as follows ( ), installed and connected at locations as shown on plans. Stations shall be open door, pull lever type with normally closed contacts. (Alternate, for schools, etc.—Stations shall be hinged hammer or hammer and chain, break glass, open door, pull lever type with normally closed contacts.) The pull lever (same as above).

Signals: Presignal bells shall be 4 in. single stroke solenoid type. General alarm bells shall be ( ) in. single stroke solenoid type. All bells shall be underdome, rust proofed and finished in dull black, with form wound moisture-proof coils. Coils *shall stand a breakdown test of 2500 volts 60 cycles for 5 seconds between winding and frame.* The bell shall be so designed that the mechanism will mount into a universal outlet box 3¼x4x2⅛ inches with ½ inch knockout on each side and at the back, equipped with a terminal block which eliminates splicing and soldering. The bell shell shall cover the entire mechanism (8″, 10″ or 12″ bells may be specified). There shall be a total of ( ) presignal bells, arranged on ( ) loops, and a total of ( ) general alarm bells, arranged on ( ) loops, located as follows ( ).

Current Supply: (Four Methods—Select one) (Same as above).

Wiring: For each loop of stations provide four No. 14 wires to form 2 loops connected through the stations in series. (Not more than twenty stations on one station loop. Panel shall be provided with extra terminals on this basis.) For signal circuits provide two No. 14 wires to form a loop on which the signals of that loop are connected in series. Connection diagram shall be furnished by manufacturer, and all wiring shall be according to standard requirements as given for lighting and power elsewhere in the specifications.

FIRE ALARM STATIONS



Non-Code, Break Glass, (Hinged Hammer)
Type NCFI (Flush)
Type NCSI (Surface)
Type NCSFI (Semi-flush)



Standard Switch Box



Coded, Break Glass, (Hinged Hammer) Open Door, Pull Lever
Type FHP210 (Flush)
Type SHP210 (Surface)
Type SFHP210 (Semi-flush)



Coded, Break Glass, (Hammer and Chain) Open Door, Pull Lever
Type FGP210 (Flush)
Type SGP210 (Surface)
Type SFGP210 (Semi-flush)



Back Box for Coded Stations

Non-Code Break Glass Stations

Are used only with the March-Time and Master Code Alarm Systems and may be of either the hinged hammer or the hammer and chain type, and either surface, flush, or semi-flush. Breaking glass or opening door of station causes alarm to be sounded. Keys are provided for testing and for Fire Drill. Stations are designed to fit either a standard rectangular switch box or a standard square outlet box.

Pull Lever Coded Stations

Are used with Coded General Alarm and Coded Presignal Alarm Systems and may be of the plain open door, pull lever type or of the hinged hammer or hammer and chain, break glass, open door, pull lever type. These stations are all "local non-interfering", that is, after the lever has been pulled and released, further manipulation thereof will have no effect upon the sounding of the alarm. The pull lever is "L" shaped and arranged so that the pull is forward and downward, permitting use of four fingers in operating, and obviating the catching of fingers between lever and movement plate. The lever is vertical when door is closed, and moves forward to a position permitting an easy grasp when door is opened.

A special key is furnished which may be used either to test the electrical circuit without operating the mechanism or to operate the mechanism without sending in an alarm. This key also serves to open the screw lock of inner door. For presignal stations another key is furnished to control operation of general alarm signals. All coded stations may be provided with means to prevent mixing of signals when two stations are pulled at the same time, at no extra cost. Back boxes are arranged for ½ in. and ¾ in. conduit and may be "roughed in" so that all wiring work may be completed before mechanism is installed. Weatherproof housings are available for use on loading platforms and the like, where the exposure is more severe.



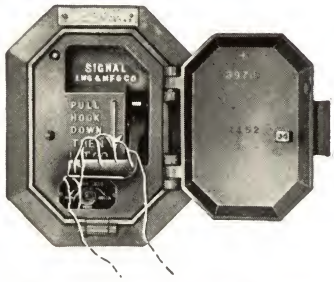
Non-Code, Break Glass, (Hammer and Chain)
Type NCF (Flush)
Type NCS (Surface)
Type NCSF (Semi-flush)



Standard Outlet Box



Coded, Open Door, Pull Lever
Type FP210 (Flush)
Type SP210 (Surface)
Type SFP210 (Semi-flush)



Showing Completion of Downward Pull



"W" Weatherproof Housing for All Types of Stations

Wheelock STANDARDS

FIRE ALARM EQUIPMENT



Universal Back Box



Bell Adapter Plate



Standard Outlet Box

Signals

We advocate single stroke bells as the only logical signals for interior Fire Alarm Systems. While the Wheelock Duplex horn is recognized as the ideal horn and while the Wheelock vibrating bell is the most satisfactory vibrating bell manufactured, we do not advocate their use for interior Fire Alarm Systems. (See pages 12 and 13.)

Trouble Bell

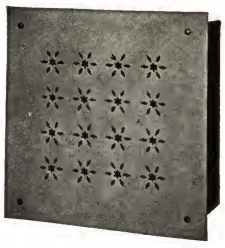
The preferred trouble bell is the rectangular cow gong type which employs the standard 4-in. vibrating mechanism with a rectangular bell metal gong shell. This bell may be attached directly to a surface type housing.



Trouble Bell

Grille

Fancy grilles and back boxes are available for recessed bells. The grilles can be supplied in steel, brass or bronze in various designs and finishes. The back box is of heavy gauge steel with knockouts, and drilled for bell mounting.



Grille

Panel

The Control Panel is made of Ebony Asbestos and is equipped with the necessary supervisory and control equipment, including relays, resistors, terminals, etc. When provision for future expansion is necessary, the ultimate number of circuits may be provided, those not needed being strapped out.

Housings

Housings are constructed of code gauge steel and fitted with Yale Lock. Conduit may enter on sides or bottom. Ample wire gutter space is provided. Either glass window or full glass door may be obtained. (Removable trim is special).



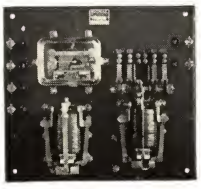
Typical Control Panel

Sentinel Panel

The Wheelock Sentinel Panel is a safeguard device through which an interior Fire Alarm System may be connected to a municipal box. Operating an interior box will send a signal via the sentinel panel through the municipal box to the Fire Department Headquarters. When the alarm has been completed the sentinel panel automatically returns to normal. An open or ground or derangement of the interior system will not send a signal through the municipal box or cause a stroke on the local signals.

Register and Time Stamp

When a permanent record of all alarms is desired, a register and take-up reel may be provided. An electrically operated time stamp may be added when a record of the exact time of each alarm is desired.



Sentinel Panel

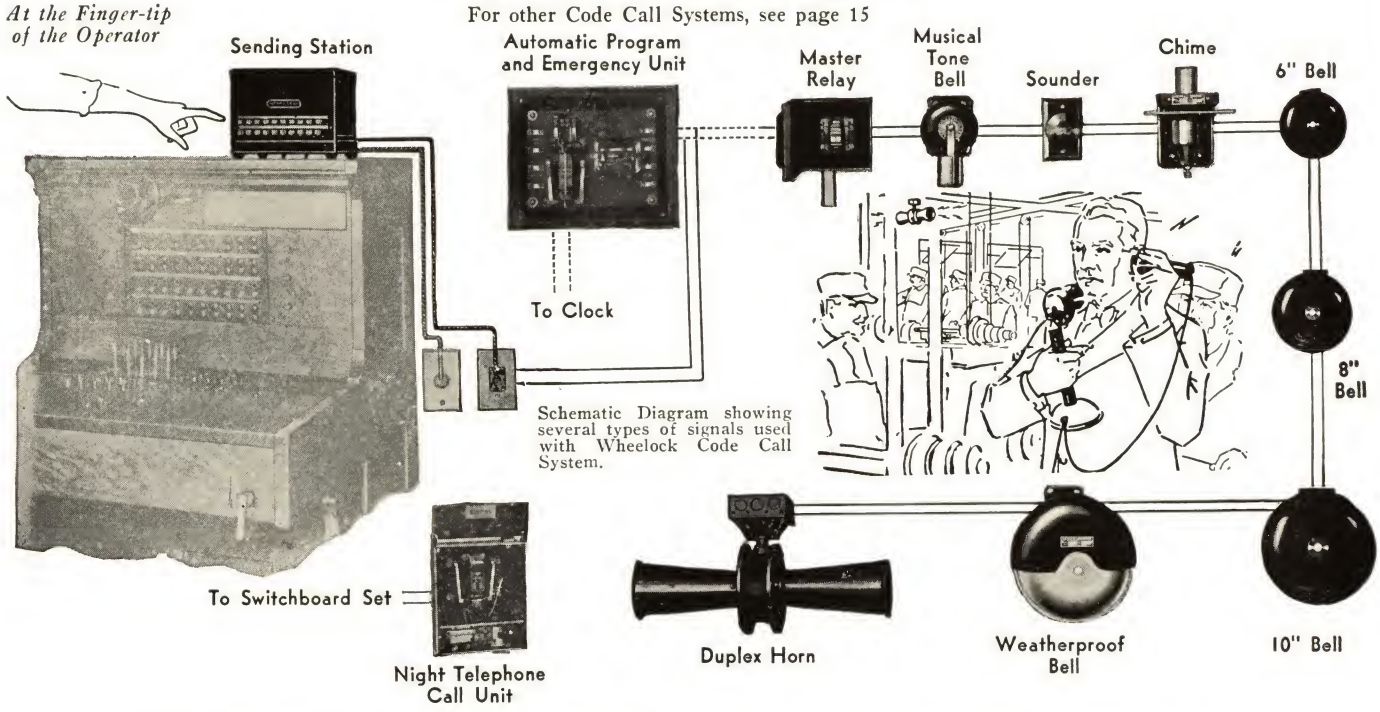
Pilot Lamp and Switch Furnished if Required

Wheelock STANDARDS

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*CODE CALL SYSTEM

For other Code Call Systems, see page 15



Schematic Diagram showing several types of signals used with Wheelock Code Call System.

The Wheelock Code Call System is primarily a means for promptly completing telephone calls by automatically reaching members of an organization and calling them to the nearest branch telephone and for broadcasting special messages or emergency signals. It affords an efficient and quick method of contact between telephone operator and any member of organization.

Code numbers are assigned to members of an organization. When one fails to answer his desk telephone, the operator presses code button which broadcasts his number three times on sounding devices so distributed as to be heard throughout the premises. The person called steps to nearest telephone and the call is *promptly completed.*

Installation

Sending Station is provided with six foot cords, each of which is designated where it leaves the case to show proper outside connections. Internal connections of cords are made at factory, thereby making it unnecessary to take Sending Station apart when installing.

The commercial power supply which furnishes voltage to Sending Station need not be fused above one ampere.

Wiring from receptacles, within eight feet from Sending Station to Master Relay, should consist of approved No. 14 two-conductor wire.

Master Relay should be mounted outside the office on a solid wall or beam where labor and material required for wiring may be reduced to a minimum. Cord marked "Master Relay" is connected to an exclusive line to Relay Coil.

Signals are connected in multiple, that is, across the line.

Operation

Each key on Sending Station is designated by a number which represents the code that will be sounded by the signals when that particular key is depressed.

To start a call, for instance No. 12, the key bearing this number is pressed. Call No. 12 will then be sounded in code on all signals as follows: Tap—Pause—Tap, Tap, and will be repeated twice with a small interval of time between the first and second and between the second and third call. If necessary to repeat call, the code key is depressed again.

The system also provides for sending special messages. For example, a member of an organization assigned with code numbers starting with No. 2 could receive such definite messages as:

2—wanted on the nearest branch telephone.
21—come to General Manager's Office
22—wanted in the President's Office

Advantages

Sending Station may be mounted directly on switchboard. Does not require separate mounting.

Includes not only key section but operating unit.

No key or plug is required which may be lost or easily inserted in wrong slot.

Does not interfere with telephone lines.

Buttons require only slight pressure.

Can be operated at any commercial voltage, usually 110 volts 60 cycles.

Furnished direct or provided on a rental basis by various Telephone Companies.

ELEMENTS OF STANDARD CODE CALL SYSTEM



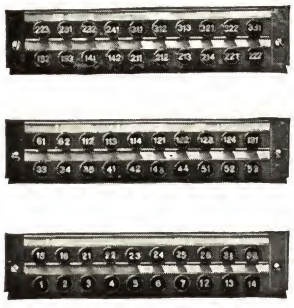
Central Sending Station

Type A1 (for A.C.)
Type D1 (for D.C.)

Operating Mechanism and Keyboard in One Unit



Central Sending Station
Showing Upper Casing, 10-call Section and Footed Base



Patented Sectional Units
Additional 20-call Sections



C7-M Master Relay



S7-G Master Relay

Central Sending Station

Driven by magnetic movement with jeweled bearings. Free from noise or magnetic influence. May be placed on a switchboard, obviating necessity for remote control. All current interrupting is done by two readily accessible contacts of a Wheelock Master Arcer. The case is of solid brass, attractively finished in telephone black. Special finishes on request.

Station is furnished complete for 10, 20, 40, or 60 calls. To increase from 10 to 20 calls, the first 20-call section is substituted for the 10-call section. To increase to 40 and 60 calls, 20-call sections are added. More than 60 calls, made on special order. All electrical connections are made automatically when sections are added.

Dimensions: 10 or 20-call station, 7¾ x 6½ x 6¼ inches. Additional sections, each 1½ inches high.

Power consumption, 30 watts, when in operation.

Master Relay

The C7-M relay is used to operate up to 10 signals. The S7-G relay is used to operate up to 25 signals. Additional relays connected in multiple or connected to signal lines can be used to operate signals beyond 25. The C7-M and S7-G relays are the Wheelock standard heavy-duty type.

Relay coils energized from the sending station; contacts close the signal circuits. One voltage may be used for the sending station and another for the signals.

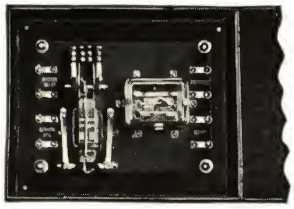
Dimensions: C7-M housing, 5¼ x 5¼ x 2⅝ inches, ½ in. knockouts; S7-G housing, 6¾ x 5¼ x 2¾ inches, ½ in. and ¾ in. knockouts.

Current consumption: C7-M—110/60, 0.100 amp.; S7-G—110/60, 0.250 amp.

Signals

See Pages 12 to 15.

AUXILIARY APPARATUS



Automatic Program and Emergency Unit
Type AD2 (for A.C.)
Type DD2 (for D.C.)



Weatherproof
Watchman's Push Button
3¼" w. x 2⅝" h. x 2⅛" d.
Type POW



Night Telephone Call Unit
Type 3HB



Indoor
Watchman's Push Button
2⅝" dia. x 1⅝" d.
Type POH

Auxiliary Automatic Program and Emergency Unit

The Wheelock Code Call System can be used to sound a distinctive signal for starting and stopping of work, or for broadcasting special or emergency signals by the addition of this auxiliary unit. Operated automatically from a program clock, or manually from a push button. The signal given has the right of way over the code call signal, and will interrupt a code call signal, which will automatically continue after the special signal has been completed. When this auxiliary unit is used, the taps of the signals (bell or other) may be set at any speed desired.

Dimensions: 12 x 10 x 5 inches.

Power consumption: 30 watts, when in operation.

Auxiliary Night Telephone Call Connection

The Wheelock Code Call System can be used for notifying the watchman of incoming calls when the switchboard is unattended. An incoming telephone call actuates a relay, and a predetermined code of the sending station is sounded on all signals. The code is sounded three times and stops automatically. Should it be desired to connect this unit to a leased telephone service, the Telephone Company will make installation of this apparatus. Should the Telephone Company prefer that the customer purchase the unit, we will supply direct.

Auxiliary Watchman's Call Connection

The Wheelock Code Call System can be used for calling the watchman to the main entrance of the premises when the establishment is closed. A special push button is located at the main entrance. All signals sound once for each operation of the button.

Wheelock STANDARDS

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BELLS SINGLE STROKE VIBRATING

All Wheelock Bells are of the Underdome type with Solenoid and Plunger principle, originated by Signal Engineering & Mfg. Co.

SINGLE STROKE BELLS

For Multiple or Series Circuits

Only moving part is sturdy, rust-proof plunger, which is drawn up quickly when coil is energized. After striking gong a quick single blow, plunger drops back instantly due to force of gravity, rebound, and action of solenoid, allowing gong to vibrate freely, resulting in a true extended sound wave.

Coils form-wound, moisture-proof, and capable of withstanding a 2500 volt 60 cycle breakdown test between coil terminals and frame.

Indoor Bells

Bells equipped with either hot pressed steel shells, parkerized black (special finish when specified), or polished cast bell metal shells.

Universal Back Box (for Indoor Bells only)

Wheelock indoor bells, from 4-inch to 12-inch sizes, furnished with universal back box, 3¼ x 4 x 2⅛ inches, equipped with terminal block and having ½-inch knockouts on all sides and back. These are included in price. Shipped with bells or separately, as desired.

Optional:

(A) 4 or 5-inch standard outlet box with terminal block and adapter plate—add to type designation: 4-inch, "-N4"; 5-inch, "-N5."

(B) With adapter plate only (terminals on bell), for 4-inch box, "-U4"; for 5-inch box, "-U5".

Outdoor Bells:

Weatherproof Bells

Shell of polished cast bell metal. Cast metal hood covers upper half of bell shell, providing protection against rain, snow, ice, etc. Bell casting sealed to back box with rubber gasket.

Weatherproof Guarded Bells

Same as weatherproof bell with rigidly secured, heavy wire mesh covering lower half of bell.

Back Box (for Outdoor Bells)

Made of cast-iron. Equipped with outlets at top and bottom, terminal block to eliminate wire splicing, removable cover plate for access to terminal block, and rubber gasket. Tapped top and bottom with ½-inch pipe thread (one plug furnished).

VIBRATING BELLS

Available in both indoor and outdoor types
For Operation in Multiple only

Identical with Single Stroke Bell with addition of vibrating mechanism.

The unique construction of vibrator and its adaptability to the Single Stroke Bell assures long plunger travel and slower strokes, allowing full efficiency of the bell shell which is not obtainable in any other design of bell.

Vibrator mechanism is so designed that strokes are timed to allow gong to vibrate freely and completely without interference. The result is a true ring: clear, full, and singularly penetrating.

Grilles for Recessed Bell

Attractively designed grilles, furnished in various designs and finishes. Back boxes are of heavy gauge steel, equipped with ½ and ¾-inch knockouts on all sides.

Special Twenty-Inch Bells

Exceptionally loud and penetrating, particularly suitable for use in such locations as power houses, substations, and the like. Vibrating 20-inch bell has adjustment for speed of strokes.

Contactless Vibrating Bell

U. S. Patent No. 1,970,333

A basically new principle of vibrating bell construction.

Gives a truer ring by "matched impedance."

Longer strokes + increased interval = fuller tone.

Advantages

No vibrator or contacts to stick or wear.

No magnet used, thus no buzzing.

Operates on from 80-130 volts 60 cycle current.

Arranged for 8, 10 or 12-in. gongs.

No sparking or arcing to cause explosions.

Fully Laboratory tested.

Simple, sturdy, dependable.



When ordering, specify operating voltage and frequency

Complete catalog on signals mailed upon request

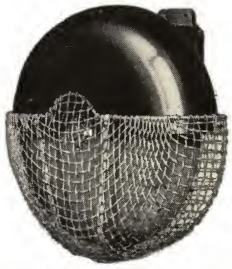
Wheelock STANDARDS

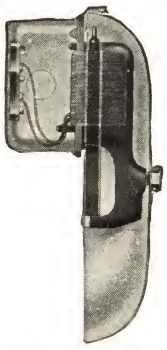
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150 WEST 14TH STREET, NEW YORK

BELLS SINGLE STROKE VIBRATING


Indoor


Weatherproof

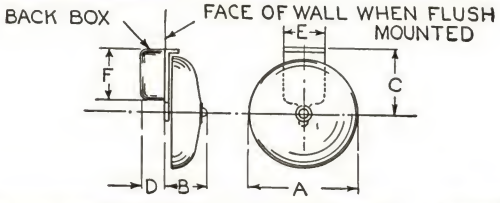

Weatherproof Guarded

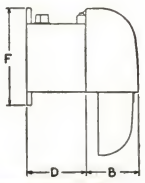

Single Stroke

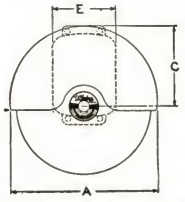

Vibrating

AVAILABLE IN FOLLOWING OPERATING VOLTAGES						
Bell Size	Single Stroke Bells			Vibrating Bells		
	D.C.	25 Cycles	60 Cycles	D.C.	25 Cycles	60 Cycles
	Volts	Volts	Volts	Volts	Volts	Volts
4"	3 to 250	4½ to 220	6 to 250	3½ to 250	6 to 220	12 to 440
6"- 8"	3 to 250	7½ to 250	11 to 440	4 to 250	6½ to 350	14 to 440
10"-12"	3½ to 340	9 to 250	11 to 440	4½ to 250	7 to 250	15 to 440
20"	110	110	11 to 260	110	110	110

APPROXIMATE WEIGHTS OF BELLS				
Size	Indoor Bells		Outdoor Bells	
	Lbs. Net	Lbs. Ship't	Lbs. Net	Lbs. Ship't
4"	3	6	8¼	17
6"	6	14	10½	20
8"	6½	15	13½	23
10"	8½	18	17½	27
12"	10½	20	20½	30



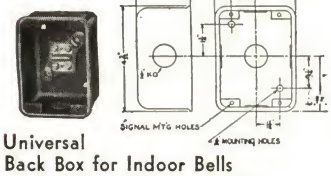




Size of Bell	Dimensions Indoor Bells (in inches)					
	A	B	C	D	E	F
4"	4	2	2⅜	2⅛	3¼	4
6"	6	2¾	3⅜	2⅛	3¼	4
8"	8	2⅞	4⅜	2⅛	3¼	4
10"	10	3½	5⅜	2⅛	3¼	4
12"	12	3¾	6⅜	2⅛	3¼	4
20"	20	7¼	10⅜	2½	5⅝	7

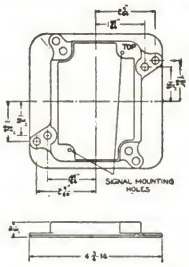
Size of Bell	Dimensions Weatherproof Bells (in inches)					
	A	B	C	D	E	F
4"	5	2	2½	4	4¼	6¼
6"	7	3	4	4	4¼	6¼
8"	8¾	3¼	5¼	4	4¼	6¼
10"	10¾	3½	5¾	4	4¼	6¼
12"	12¾	4	6¾	4	4¼	6¼

Size of Bell	Dimensions Weatherproof Guarded Bells (in inches)					
	A	B	C	D	E	F
8"	9½	4¼	5¼	3¾	4¼	6¼
10"	11½	5¼	5¾	3¼	4¼	6¼
12"	13½	5¼	6¾	3¼	4¼	6¼



Universal Back Box for Indoor Bells
Net Weight 1 lb.


Bell Adapter Plate for Indoor Bells





Back Box for Outdoor Bells Net Weight 5 lbs.

Ordering Information

When ordering Bells, follow guide below for type designations:

S = Single Stroke, Parkerized Finish (add size).
V = Vibrating, Parkerized Finish (add size).
SB = Single Stroke, Cast Bell Metal Shell (add size).
VB = Vibrating, Cast Bell Metal Shell (add size).
SBW = Single Stroke, Weatherproof, without guard (add size).
VBW = Vibrating, Weatherproof, without Guard (add size).
SBG = Single Stroke, Weatherproof, with Guard (add size).
VBG = Vibrating, Weatherproof, with Guard (add size).

Specify operating voltage and frequency—see table above.

Example: to order an 8-inch vibrating, weatherproof Guarded Bell for operation at 110 volts 60 cycles, the type designation is: VBG8, 110 volts 60 cycles.

Wheelock STANDARDS

MFD. BY
SIGNAL
ENGINEERING & MFG. CO.
150 WEST 14TH STREET, NEW YORK



Musical Tone Bell
Single Stroke
Type S4-3
Vibrating
Type V4-3



Soft Tone Bell
Single Stroke
Type S (add size)-2
Vibrating
Type V (add size)-2



Cow Gong
Single Stroke
Type S4-4
Vibrating
Type V4-4



Tapper, S. S. Type S1
Buzzer, Vibr. Type V1



Duplex Horn without
Projectors, for Wall
or Ceiling Mounting
Type A1-2 (for A.C.)
Type D1-2 (" D.C.)



Steam Whistle or
Air Whistle
Types WS (steam)
or WA (air)



Duplex Horn with one Projector,
for Wall or Column Mounting
Type A1-1 (for A.C.)
Type D1-1 (" D.C.)



Duplex Horn with Two Projectors,
for Wall or Ceiling Mounting

Non-weatherproof, Type	A1	(for A.C.)
" " "	D1	(" D.C.)
Weatherproof "	AW1	(" A.C.)
" "	DW1	(" D.C.)

SPECIAL SIGNALS

For ordering information, see table page 15

Musical Tone Bells

Same as 4-inch bell, with resonator chamber. Suitable where a mellow tone is desired.

Soft Tone Bells

Standard single stroke bell with special plunger tip. All sizes.

Chime Tone or Deaf Signals (tone adjustable)

Type S5 has same mechanism as standard 4-inch single stroke bell with chime bar instead of gong. Gives a sustained musical tone of great penetration. Ideal for banks, department stores, offices, hospitals.

Types S7, S9 and S19 have resonating chambers for sustaining the tone with remarkable penetration, each having a different frequency selected for various noise levels and for degrees of deafness.

S7: Back box same as for standard bells.

S9 and S19: Aluminum back box with terminal block. Drilled at top for conduit.

S7-1: Cast-iron back box; S9-1, S19-1: Aluminum back box. All three furnished with back board for mounting, 8 ft. cord and plug.

Cow Gongs

Same as standard 4-inch bell with rectangular bell metal shell. Especially adapted for use as trouble bell with fire alarm systems.

Tapper (Sounder)

Gives single tap on sounder for each impulse. Bakelite cone aids sound effect. Plate also bakelite. Fits rectangular switch box. Suitable for locations where loud sound is not required.

Buzzer identical with Tapper in appearance and overall dimensions except has a vibrating mechanism.

Duplex Horns

Scientifically designed to utilize the synchronized action of two diaphragms by means of a sturdy plunger moving in a bearing of long wearing quality which actuates both diaphragms in synchronism with frequency of alternating current. For direct current, a rugged and simplified vibrator is added. Diameter of diaphragms 5½ inches. Operating voltages: 6 to 260 volts 60 cycles; 24 to 250 volts D.C.

When ordering any of the above Signals, it is necessary only to give type, voltage and frequency.

For Ordering Information, see page 15.

Steam Whistle or Air Whistle (with Electric Valve)

For use where noise level is exceedingly high. Recommended sizes, 1 to 2-inch diameter whistle, ⅜ to ½-inch steam or air line.



Chime. Type S5
(Pitch 980 cycles per second)



Chime Tone or Deaf Signal
Type S7
(Pitch 980 cycles per second)



Chime Tone or Deaf Signal
Type S19
(Pitch 490 cycles per second)



Chime Tone or Deaf Signal
Type S9
(Pitch 245 cycles per second)

Wheelock STANDARDS

MFD. BY
SIGNAL
ENGINEERING & MFG. CO.
150 WEST 14TH STREET, NEW YORK

PORTABLE DUO POTENTIAL CODE CALL SYSTEM

(Patent Applied for)

For other Code Call Systems, see page 10



DUO POTENTIAL APPARATUS

Approved by Underwriters' Laboratories as Portable Devices

*Duo Potential System

For operation over wire similar to telephone pair. Commercial power outlets within 8 feet of signals required. Low voltage current for operating 25 signals provided at the sending station.

*Extension Sets

These sets provide low voltage current for additional multiples of 25 signals and are connected to the system in the same manner as the signals, thus making unlimited the number of signals that may be operated from the sending station.

Signals

Actuation of signals from commercial power, at nearby outlet, controlled by low voltage circuit (over telephone pair or similar wiring).

Each signal supplied with 8-ft. cord and plug for connecting to convenience outlet, and 2½-ft. spade-tipped cord for connecting to low voltage wiring.

Any standard bell or special signal can be supplied as a Duo Potential signal.

Have same operating characteristics as Special Signals (see table below).

*Telephone Extension Signals

These signals may be furnished for control by telephone ringing current.

Names of telephone companies which provide on a rental basis furnished upon request

SPECIAL SIGNALS—ORDERING INFORMATION

When ordering, give Type, and operating voltage and frequency desired.	Size	AVAILABLE IN FOLLOWING OPERATING VOLTAGES								OVER-ALL DIMENSIONS (in inches)		
		Single Stroke				Vibrating						
		Type	D.C. Volts	25 Cycles Volts	60 Cycles Volts	Type	D.C. Volts	25 Cycles Volts	60 Cycles Volts	W.	H.	D.
Musical Tone Bell.....	4"	S4-3	3 -250	4½-220	6-250	V4-3	3½-250	6 -220	12-440	4	6⅞	4⅛
Soft Tone Bell.....	4"	S4-2	3 -250	4½-220	6-250	V4-2	3½-250	6 -220	12-440	4	4⅜	4⅛
Soft Tone Bell.....	6"	S6-2	3 -250	7½-250	11-440	V6-2	4 -250	6½-350	14-440	6	6½	4⅞
Soft Tone Bell.....	8"	S8-2	3 -250	7½-250	11-440	V8-2	4 -250	6½-350	14-440	8	8½	5
Soft Tone Bell.....	10"	S10-2	3½-340	9 -250	11-440	V10-2	4½-250	7 -250	15-440	10	10½	5⅝
Soft Tone Bell.....	12"	S12-2	3½-340	9 -250	11-440	V12-2	4½-250	7 -250	15-440	12	12½	5⅞
Chime Tone or Deaf Signal		S5	3 -250	4½-220	6-250					6	8	4 5/16
Chime Tone or Deaf Signal		S7	3 -250	4½-220	6-250					4¾	6 1/16	4
Chime Tone or Deaf Signal		S9	3½-340	9 -250	11-440					15¾	20⅛	5 3/16
Chime Tone or Deaf Signal		S19	3 -250	7½-250	11-440					11½	13½	4¼
Cow Gong.....		S4-4	3 -250	4½-220	6-250	V4-4	3½-250	6-220	12-440	3⅛	4¼	5⅛
Tapper (Sounder).....		S1	3 -250	4½-220	6-250	V1	3½-250	6-220	12-440	2¾	4½	2⅞
Horns (see page 14).....												

RELAYS
of Distinction

Wheelock STANDARDS

MF'D BY

SIGNAL
ENGINEERING & MFG. CO.
150 WEST 14TH STREET, NEW YORK

Recognized as superior in design and performance

●

Types "C9" and "S9" Relays are designed to allow setting in manufacturing assembly for various contact gaps to suit different requirements. Accomplished by adjustable back contact bridge and adjustable stationary contacts. Adjustment of bridge is in the same arc as the movement of contact arms. Movable contacts are of special floating design. THIS FEATURE ALLOWS STANDARDIZING ON ONE RELAY FOR ALL PURPOSES. Relay may be returned to us for change of adjustment.

RELAY catalog R58 fully describing and illustrating all standard Wheelock Relays, with operating characteristic data, mailed upon request.



*Type "A9" Relay

A medium-duty, small size relay, having all the standard single or double pole, single or double throw switch arrangements. Controls from one to four independent circuits or supplies two different sources of power to eight independent circuits. Medium contact capacity rating.

*Type "C9" Relay

Special multi-duty relay. Will control up to 15 amperes (non-inductive load) at 110 volts 60 cycles with standard contact gap setting. Equipped with both front and back contacts.

*Type "S9" Relay

Special all-duty relay. Will control up to 30 amperes (non-inductive load) at 110 volts 60 cycles with standard contact gap setting. Equipped with front and back contacts.

* Patents Applied For

Catalog SA39—PRINTED IN U.S.A.

SETH THOMAS CLOCKS

DIVISION OF GENERAL TIME INSTRUMENTS CORP'N
OFFICES AND FACTORY
THOMASTON, CONN.
NEW YORK SALES AND SERVICE: 107 Lafayette Street

TOWER, MONUMENT, SIGN AND BRACKET CLOCKS

Clock Makers for More Than a Century

For over seventy-five years architects have used Seth Thomas exterior clocks to add distinctiveness, service, and prestige to their projects. Booklet No. 8S giving full technical information and illustrations of Seth Thomas Clocks designed to harmonize with individual projects and a list of installations will gladly be forwarded upon request.

A separate factory is devoted exclusively to the manufacture of tower and exterior clocks, with engineers and draftsmen available to co-operate with architects on preliminary plans. Blue-prints covering complete clock details and suggestions for specific installation is also part of our service.

Seth Thomas weight-driven, electrically wound tower movements are guaranteed for ten years against original defects thus establishing a standard of quality and insuring permanency and reliability.

Other products are Monument Clocks, Street Sign and Bracket Clocks; also long-life Synchronous Motor Clocks especially arranged for exterior use. Electrically Amplified Chimes with or without tower clocks are newly developed features.

Architects are invited to use the facilities of our Development and Engineering Departments.

Tower Clocks

Both time and strike. Strike hours and half-hours; also Westminster chimes, angelus and ship's bells; quarter-hours on any number of bells up to eleven. Do not require special care by trained service men.

Description—Movements substantially constructed. Wheels are of cast bronze, machine cut, pinions of steel. Mechanism is mounted on heavy cast iron bed frame. On the clock is a small dial to indicate the position of the hands on the outside dial; also a seconds dial for close regulation; a safety catch to prevent the fall and breakage of the pendulum rod should the suspension spring break. Escapement either Graham's dead beat, mahogany pendulum rod, or Dennison's double 3-legged gravity escapement, the pendulum of stoic metal requiring no compensation.

Silencing Devices—On all striking movements we can fit an automatic attachment to silence the striking train for whatever hours desired; or a hand switch to silence the clock for special occasions.

Automatic Light Switch—We can attach a switch mechanism for automatically turning on and off the lights illuminating the dials.

Self-winding Movements—Movements can be equipped with motors to operate on any current with automatic mercury switches in approved iron boxes, automatically operated by the rise and fall of weight for automatic winding.

Size of Dials—In planning dials, we suggest that a good proportion is 1 ft. diam. for every 10 ft. in elevation.

Glass Dials—For illumination, dials may be safely used in whole plate not exceeding 4 ft. 6 in. diam.

For large sizes we advocate sectional glass and iron dials. The frame of the dial is cast in 6 sections with numerals and minute dots a part of the casting. The frame has rabbeted back to secure the glass which is installed in sections and fastened with brass clamps. Vitrolite Carrara or ground glass furnished optionally.

Wood Dials—Two layers of ⅞-in. seasoned wood, tongued and grooved with grain crossed to prevent shrinkage or warping, the two layers bolted together, the surface painted and smalted; metal numerals and minute dots painted black or gold leaf.

Iron Dials—Heavy galvanized iron with a wood backing 1¾ in. thick. Numerals and finish same as for wood.

Skeleton Metal—Cast Roman numerals and minute dots are part of the casting. All standard or special design dials cast in our own foundries. Finish to be in contrast to color or wall.

Guarantee—Our tower clock movements are guaranteed against original mechanical defects for 10 years, and, when fitted with Graham's escapement, to run within a variation of 1 minute per month, or with Dennison's double 3-legged gravity, 15 seconds per month with ordinary attention.

Estimate—Due to the various arrangements and individual requirements, each clock is made to specifications. For estimate it is necessary for us to know whether a time or strike movement is desired and the number, diameter and style of dials. We will gladly send a question sheet which, when properly filled in, will enable us to quote intelligently.

Information Required for Estimates—When requesting estimates the following details assist us in preparing quotations:

Size and number of dials.
Wood, glass, metal or stone type?
Is clock to strike hours?
Is clock to strike quarter-hours?
Approximate weight of bells.
For sound equipment, survey necessary.



Westminster Chime Clock, Consolidated Edison Building, New York, N. Y.
Four dials, 22-in. diameter
WARREN & WETMORE, Architects

Mammoth Clock Installations

Paramount Building, New York, N. Y.—2 dials, 25-ft. diam. and 2 dials, 22-ft. diam.

Colgate & Co., Jersey City, N. J.—1 dial, 50-ft. diam.

Emerson Drug Co., Baltimore, Md.—4 dials, 17-ft. diam.

Union Terminal, Cincinnati, Ohio—1 dial, 13-ft. diam.

C. Schmidt Sons, Philadelphia, Pa.—4 dials, 23-ft. diam.

Synchronous Motor Clocks

Especially constructed for outside use and operated by very slow speed motors which have given many years of service.

Amplified Chimes

These electrically operated chimes amplify the Westminster ¼-hour and full-hour striking from a standard Seth Thomas Chime Clock. They are furnished with or without a dial, and are particularly recommended for both new and old buildings—churches, schools, colleges, memorials, private estates.

Unusually compact in design, these Amplified Chimes occupy small space and do not require special structural strength. They are remarkably moderate in price.

Special Designs

We specialize in sheet bronze and cast bronze outside clock cases to suit the architects' conception of what is proper for each individual building.

THE STANDARD ELECTRIC TIME COMPANY

ESTABLISHED 1884 — SPRINGFIELD, MASS. — INCORPORATED 1888

BRANCH OFFICES

ATLANTA, GA., 903 Williams Mill Rd., N. E.
BALTIMORE, MD., Central Savings Bank Bldg.
BIRMINGHAM, ALA., 211 So. 18th St.
BOSTON, MASS., 10 High St.
BUFFALO, N. Y., Jackson Bldg.
CHICAGO, ILL., Monadnock Bldg.
COLUMBUS, OHIO, 83 So. High St.
DALLAS, TEX., 5606 Anita St.
DENVER, COLO., 562 Penn St.
DETROIT, MICH., 339 W. Grand Blvd.
HOUSTON, TEX., 3718 Main St.
KANSAS CITY, MO., Mutual Bldg.
MINNEAPOLIS, MINN., 703 Pence Bldg.
NEW ORLEANS, LA., 203 Natchez Bldg.
NEW YORK, N. Y., 50 Church St.
PHILADELPHIA, PA., Architects' Bldg.
PITTSBURGH, PA., Bessemer Bldg.
ST. LOUIS, MO., 206 Olivia Bldg.
SALT LAKE CITY, UTAH, 25 E. First South St.
SCRANTON, PA., 148 Adams Ave.
SEATTLE, WASH., 323 The Frye
TAMPA, FLA., 5505 Central Ave.

THE STANDARD ELECTRIC TIME COMPANY OF CALIFORNIA

SAN FRANCISCO, CAL., 268 Market St. — LOS ANGELES, CAL., 106 W. 3rd St.

THE STANDARD ELECTRIC TIME COMPANY OF CANADA, LTD.

MONTREAL, QUE., 726 St. Felix St.

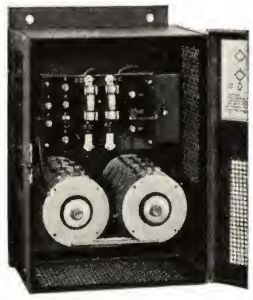
PRODUCTS

Electric Time Systems including Outside and Tower Clocks.
Electric Stop Clocks.
Fire Alarm Systems.
Science Laboratory Equipment.
Hospital Signaling Systems.
Telephone Equipment.

"STANDARD" ELECTRIC TIME SYSTEM

This is a central control system with secondary clocks synchronized from a master clock on minute or half-minute impulses.

The entire equipment is operated from 110 A-C through dry plate, stable voltage rectifiers and is arranged so that all clocks are automatically corrected hourly by the master clock in case of current interruption or other irregularity. This correction covers a total span of 25 minutes either fast or slow in one hour.



Dry Plate Stable Voltage Rectifier for Operation of Clocks, Bells and Fire Alarm Systems

Similar rectifier furnished with filters for telephone equipment

"Standard" Master Clock

These clocks are regularly made in 60-beat size, designed for wall mounting. They are kept fully wound automatically each minute and will run for from one to several hours with operating current interrupted.

Contacts are self-cleaning type of iridium platinum.

Pendulums—metal ball type, regulate within 30 seconds per month; mercurial or Invar steel, 10 seconds per month.

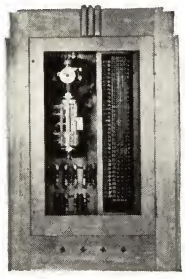
Weight-driven master clocks, operating several hours without current can be furnished, also special case designs such as flush type, Grandfather cases, etc., as required.



Flush Style Master Clock Modernistic Case Design

"Standard" Program Clock

These units are furnished in either the tape or metal disc form, in sizes to take care of all necessary school or industrial program schedules. They can be installed either in the same master clock case or a separate case, as desired, and are equipped with automatic calendar silencing control, necessary relays, switches, and buttons for manual operation.



Combination Metal Program Clock and Bell Board



Underdome Type Bell

Program Signals

For school classrooms and similar locations, buzzers or 3-in. bells can be furnished, mounted in secondary clocks. For corridors or gymnasiums and noisy shops, 6-in. gongs are most effective. Outside gongs in 8, 10 or 12-in. sizes with housing and screen can be supplied of weatherproof construction, Standard all-metal bells are of improved, underdome construction, of sturdy, simple design, insuring reliable, long service—operating from A-C without contacts. D-C bells can also be furnished in all essential sizes. These bells have "improved type," long wearing contacts of iridium platinum.



Buzzer Signal Unit for Flush Wall Mounting

Secondary Clocks

Standard school and general utility types are shown below. In addition to the square wood and round metal cases, round wood case clocks in surface or flush pattern can be furnished, also special clocks to meet architects' specifications.



Square Wood Case

List No.	Dial, in.	Dimen. sq. in.	Depth, in.
S-8	8	12	3 3/4
S-10	10	14	3 1/2
S-12	12	15 1/2	3 3/4
S-14	14	19 3/4	3 7/8
S-18	18	23	4 3/4
S-24	24	29	4 3/4



Round Metal Case

Made in surface and semi-flush types (Special outlet box required for latter)

List No.	Dial, in.	Outside diam., in.	Depth, in.
RM-8	8	10 3/8	3 1/8
RM-12	12	14 3/4	3 1/4

CEILING OR SIDE WALL MOUNTING DOUBLE DIAL METAL BRACKET CLOCK

Size of Secondary	Height, in.	Width, in.	Overall diam., in.	Base length, in.	Base width, in.	Ceiling center, in.
12	19 3/8	9	15 9/16	11	5	11 5/8
14	21 3/16	9	17 3/8	11	5	12 1/2
18	26 3/4	9 1/4	21 1/2	15	5 1/2	16
24	34 3/8	9 1/4	27 3/8	19	6 1/2	20 3/4



Tape Style Program Clock



Cast Bronze Clock with Fancy Rim

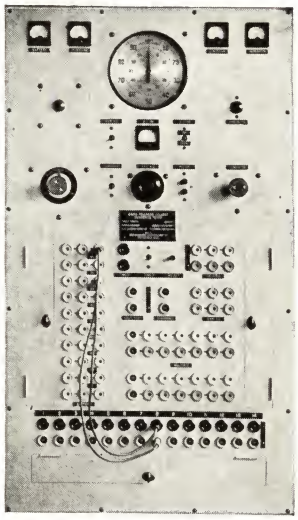


Ceiling Mounted Clock

"STANDARD" EXPERIMENTAL LABORATORY PANELS FOR SCHOOLS AND COLLEGES

(Listed by Underwriters' Laboratories)

The Equipment and Its Uses



Typical High School Laboratory Panel

"Standard" Laboratory Experimental equipment is furnished for Physics, Chemistry, General Science and Electrical Laboratories, Electrical Shops, and any other places where variable voltages, A-C and D-C are required.

"Standard" panels are designed for rugged service and to fit individual laboratory conditions as required.

The following voltages (or services) are generally used in high school work:

2 to 24 volt D-C, 110 volt D-C, 4 to 24 volt A-C, 110 volt A-C and Timing service.

For this purpose the following items would be furnished:

(A) A Central Control and Distribution Panel.

(B) 12 cells of Storage Battery.

(C) One Motor Generator Set.

(D) Service Panels for tables (and walls if required).

General Description

Control and Distribution Panel—This unit is usually mounted in a flush steel cabinet with glass doors in front and arranged to be accessible in the rear for making wire connections.

The panel is ⅛ in. thick steel finished in aluminum (or black) lacquer. It contains complete battery charging equipment, including bulb rectifier, ammeter, voltmeter, switches, etc. The motor generator control consists of a start and stop remote control switch, ammeter, voltmeter and field rheostat.

Groups of fused jacks are furnished for current supply from battery (two 24-volt), generator (110-volt D-C), transformer (four 24-volt A-C) and also fused jacks for all branch circuits to tables. Suitable plugging cords are furnished to make the necessary connections.

The 110-volt receptacles or table service panels can be controlled by circuit breakers on the laboratory panel, or else fed from the lighting cabinet.

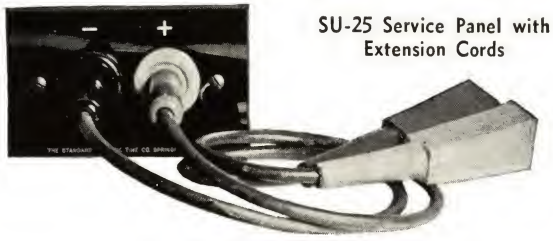
The panel contains a large Laboratory Timer arranged to measure time intervals at minutes and hundredths of a minute and furnished with start, stop and reset control equipment. The timer may be controlled right at the panel or at any table.

Storage Battery—This consists of 12 cells, sealed glass jar type, mounted on a wood rack. The capacity for a high school would be about 40 to 60-ampere hours.

Motor Generator Set—A motor generator set of from ½ to 2 kw. capacity for the 110-volt D-C supply is recommended for high school work; this to be provided with a combination line and magnetic starter switch with overload protection.

Service Panels—For each two students a service unit in the table is recommended, wired on a separate circuit for the variable voltages, so that no interference between two or more groups will be encountered.

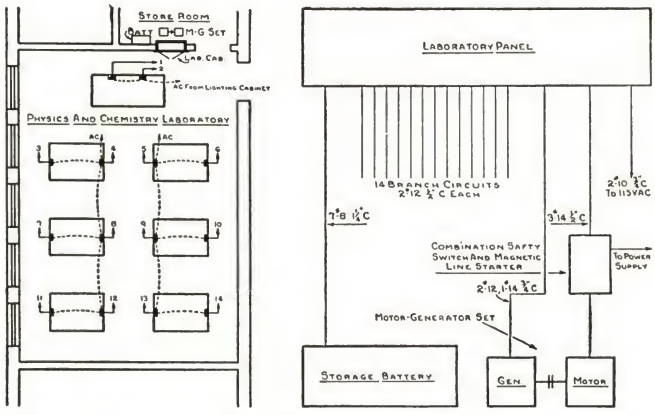
We recommend service panels with jacks or binding posts for the variable and regular 10 or 20-ampere bi-polar receptacles for the 110-volt A-C as shown *below right.*



SU-25 Service Panel with Extension Cords

Right:
SU-2BA20 Service Panel with Binding Posts and A-C. Receptacles





Typical Voltage Distribution System for Average High School

Special Layouts

Special layouts and equipment are required on many large high schools and colleges and the Company is pleased to cooperate with architects, engineers and owners in this work.

"STANDARD" TELEPHONE SYSTEM

Description

The "Standard" Telephone System is of the common talking, selective ringing type, consisting of a combination of Bell Control Board and Central Station, designed primarily for use in schools or other buildings where such equipment answers the requirements.

It provides a thoroughly practical and reliable system of the simplest type, free from complicated switchboard or automatic control to get out of order.



Combination Bell Control Board and Master Telephone Station

Operation of System

The "Standard" Telephone System operates in conjunction with the Program Bell System, using the same transformer or rectifier for the bells with a filtered rectifier of improved design for the talking circuit, thus eliminating all batteries.

When the receiver of any room telephone is removed from its hook, a buzzer warning calls attention to the Clerk or Principal at the master station. With this system, teacher-to-teacher conversation can be supervised.

Also, several teachers can be called and given instruction simultaneously.

TYPE MC CLOSED CIRCUIT FIRE ALARM SYSTEM

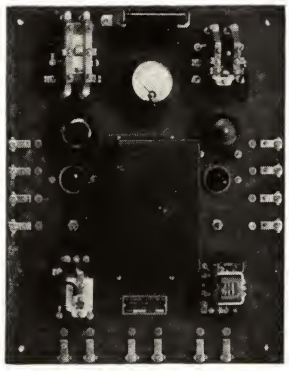
General Description

A supervised, closed circuit system, comprising Master Code Control Panel, Non-code "Break-Glass" Boxes, and single-stroke gongs or horns.

Made for either battery, 110-volt D-C, or A-C operation.

When box is operated (by breaking glass in case of fire, or opening door with key in case of drill), a common code of 2-3 is sounded for four rounds on all signals through code transmitter on control panel.

At completion of alarm, emergency bell on control panel continues to ring until glass has been restored in station originating the alarm.



Type MC Control Panel

Switches and Pilot Lights

When so ordered, panels are furnished with switches for silencing the trouble bells, and at the same time causing red bullseye lamp to show until all trouble on system is rectified.

Signals

Either horns or single-stroke, electrically operated gongs in 6, 8, 10 and 12-in. diameters are used. Special outlet boxes furnished for gongs, permitting close setting to wall.

Current Supply

System may be operated from either 110-volt A-C or D-C or from 24-volt storage battery, 12-amp. hour or larger. When 110/220-volt service is available, power may be taken from one leg of the 220-volt service and neutral, with supervision taken from the other leg and neutral. When service is straight 110-volt, supervision may be had from 6-volt primary battery, or from any other reliable source of current, such as a storage battery.

Control Panel

Made of ebony asbestos and contains supervisory milliammeter, relays, transmitter, pilot lamps, silencing switches, trouble bell, ets.

Cabinets—Made of steel, for surface or flush mounting. Furnished with knockouts in bottom and sides. Doors are provided with either full ¼-in. plate glass panel or a small glass window over meter. Cabinets are 18 ins. wide, 22 ins. high, 7½ ins. deep, with trim extending 2¾ ins. all around for flush type.



No. 451-H Break Glass Type Fire Box with Hinged Hammer



Single-Stroke Gong

Double Supervision

When specified, system may be furnished with double supervision; that is, in addition to supervising the operating current, the trouble bell current is also supervised.

Wiring

All stations wired in multiple on two continuous circuits. All signals wired in series, with up to 10 on a circuit for 110 volts, and up to 5 on a circuit for 24 volts. No wire smaller than No. 14 should be used.

TYPE BC CLOSED CIRCUIT FIRE ALARM SYSTEM

General Description

A supervised, closed circuit system consisting of Central Control Panel, Coded Boxes, and single-stroke gongs or horns. Made for battery, or 110-volt A-C operation.

Control Panel

Made of ebony asbestos, and contains supervisory milliammeter, relays, pilot lamps, silencing switches, trouble bells, time limit cut-outs, etc.

Cabinets—20 ins. wide, 24 ins. high, 5 ins. deep.

Double Supervision

Same as used with Type MC System.

Switches and Pilot Lights

Same as used with Type MC System.

Fire Boxes

Boxes used with this system are coded, furnished in two types: the open-door, pull-lever type, and the "Break-Glass," pull-lever type. Either may be furnished for surface mounting (open conduit work) or for semi-flush mounting. Mechanism is furnished with code wheels cut for desired code for each box. When lever is pulled, four rounds of code signal are given.

All stations are provided with arrangements for running test signals by the use of a test key, indicating the perfect condition of the full operating circuit by giving one stroke on all the signals. The mechanism of the station may also be tested by holding the break springs closed with the test key turned in reverse position, and pulling the lever, without sounding the signals.

Special cast iron outlet boxes furnished with proper provision made for terminating conduit.

Signals

Same as used with Type MC System.

Current Supply

Same as used with Type MC System above.

Wiring

Same as used with Type MC System, except that all stations are wired in series on one 2-wire circuit.

TYPE 450 OPEN CIRCUIT FIRE ALARM SYSTEM

General Description

The "Standard" Type 450 Fire Alarm System is a very simple, yet completely reliable warning that has been successfully used in buildings for many years. It is of the open circuit, non-supervised type, comprising a Master Code Panel, Non-code "Break-Glass" Boxes, and either single-stroke gongs, vibrating bells or horns. It is made for A-C or D-C operation.

TYPE BCR PRE-SIGNAL CLOSED CIRCUIT FIRE ALARM SYSTEM

A supervised, closed circuit system arranged so that the normal operation of any box sounds signals (usually small tapper gongs) at certain designated places, such as superintendent's or engineer's office, permitting a preliminary investigation.

NON-CODED GENERAL FIRE ALARM PANELS

Use non-coded stations with non-contact A-C vibrating bells or horns.

Can be supplied with single or double supervision from rectifier or batteries.

"STANDARD" HOSPITAL EQUIPMENT

Nurses' Calling System—Lock Button Type

(For 12-volt Operation)

This system is operated by a slight pressure on the button of the patient's cord. This lights the lamps at the corridor, duty room stations and nurses' annunciator, also at the bedside station if in a ward. A further pressure of the button sounds buzzers at duty stations and nurses' annunciator.

Calling stations can be furnished with extra gangs punched to accommodate standard duplex receptacles, radio or telephone jacks, etc.



HR-300B
Ward Station

All plates are regularly furnished in .060-in. thick struck up brass, finished in No. 201 hospital buff lacquer. Other materials and special finishes can also be supplied to meet specification requirements.

Calling Stations—The cord receptacle has a valuable automatic feature which causes a call to go in if the cord is accidentally pulled out. It also has a push button switch in the center of wall receptacle for making the station inoperative at any time desired.

The ward stations are furnished with a protruding pilot light as illustrated, so that it may be seen from any position in the room.

Emergency Service—Can be provided by an additional emergency switch mounted on the plate, which will cause red lamps to light at the various stations in addition to the usual white lights, and also sound emergency bells located where desired.

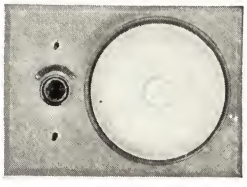


Bedside Cord and Button

Patients' Cords—These are furnished in single and double types, as required. The button is housed in either a chrome plated heavy brass shell or in a high impact, shock resisting, moulded bakelite, as desired. The cord is Tirex, strongly anchored at each end by clamps and has all soldered connections, thus practically eliminating upkeep repair costs. The plugs are made of moulded ivory colored urea gum.

Corridor Dome Lights—These are furnished with 1, 2, 3 or 4 lamps and barriers, as required. The dome is moulded urea gum and snaps firmly into place with ball and socket connections, avoiding troublesome hinges and screws. Makes the replacement of lamps a quick and simple matter.

Duty Stations—The duty stations are furnished as illustrated, with buzzer and cutout and regular dome lights as already described.



HN-311 Duty Station



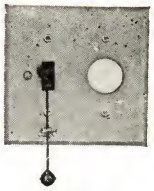
HN-314 Nurses'
Lamp Annunciator

Nurses' Lamp Annunciators—These are made with a heavy metal plate panel with the numbers stenciled therein, and covered with a translucent white material which will not reflect corridor lights and can be easily cleaned with soap and water. The numbers are sharp, clear, and visible only when the lamps are lighted.

Nurses' Calling System—Pull Cord Type

(For 12 or 110-volt Operation)

Used where low cost is a paramount issue, although many advantages of lock button type are sacrificed.



HT-300-SU
Ward Station

Calling Stations—These are furnished with switch and pull cord as shown, with or without pilot lights.

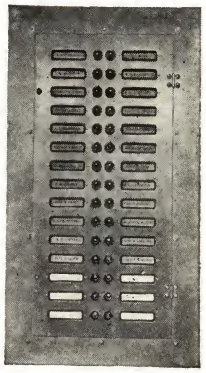
Corridor Dome Lights and Duty Stations—Same as shown for lock button systems.

Annunciators—These may be the bullseye type for 110-volt operation, but the HN-314 (shown) is used for 12-volt systems.

Doctors and Staff Registers

These in-and-out registers have all the latest improved features. They provide for illuminated name cards, set between glass panels which can be readily disassembled for changing names. They can be equipped with three and four-way switches so that in-and-out operation may be controlled from more than one entrance, by the same person.

A flasher recall unit can be provided, controlled by the telephone operator, causing any desired name lamps to flash intermittently until the call is answered.



In-and-Out Register

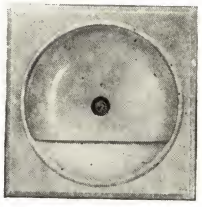
Night Lights

"Standard" night lights are furnished for corridor and room use. The corridor type has a removable front with three louvres as illustrated and is furnished with a special flush outlet box and lamp receptacle.

The revolving shield type is used chiefly in rooms and has a urea gum dome, covered with a metal revolving shield to reflect the light in any direction. See illustration.



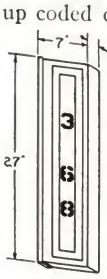
Corridor Night Light



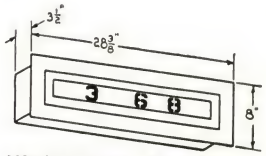
Room Night Light

Doctors' Paging System

Permits telephone operator to set up coded calls for as many as three doctors at a time which show on lamp annunciators located in corridors of building. All numbers are of three digits to avoid confusion in case of accidental failure of one lamp.



HD-304
Double Face
Annunciator,
Side Wall
Mounted



HD-300 Single Face Annunciator, Flush Mounted

Annunciators are made in various styles to meet requirements with metal cases and numerals stenciled on metal plate, with clear white surface—a clean unbreakable construction.



HD-310
Selector Keyboard

STANLEY & PATTERSON

DIVISION OF

SCHWARZE ELECTRIC COMPANY

ADRIAN, MICHIGAN

DISTRICT SALES OFFICES

ATLANTA	CHICAGO	DETROIT	LOUISVILLE	PITTSBURGH	SALT LAKE CITY
BALTIMORE	CINCINNATI	INDIANAPOLIS	MINNEAPOLIS	PORTLAND, ORE.	SAN FRANCISCO
BIRMINGHAM	CLEVELAND	KANSAS CITY	OMAHA	ROCHESTER	SEATTLE
BOSTON	DENVER	LOS ANGELES	PHILADELPHIA	SAN ANTONIO	ST. LOUIS

PRODUCTS

SIGNAL GONGS; CHIME CALLS; ANNUNCIATORS; TELEPHONES; FIRE ALARM and HOSPITAL SIGNALING APPARATUS; COMMERCIAL CLOCKS; PAGING, BANK SIGNAL, and BURGLAR ALARM APPARATUS; HYDRO ELECTRIC EMERGENCY-CURRENT SUPPLY OUTFITS; TELEPHONE-POWER SUPPLY CABINETS; TRANSFORMERS; INDUSTRIAL HORNS, SIRENS, and SPECIAL SIGNALLING APPARATUS of every description.

FARADAY

DE VEAU

PR

SCHWARZE

TRADE-MARKS

ELECTRICAL SIGNALLING SYSTEMS

Fire Alarm, Hospital Signal, Doctors' "In-and-Out" Staff Register, Doctors' Paging, Emergency Lighting, Apartment House Telephone, Intercommunication Telephone, School Signal, Program Clock Systems, Burglar Alarm, Hotel Signal, Department Store Signal, Tank Alarm, Sprinkler Alarm, Standpipe Pressure Signal, High and Low Water, etc.

CATALOGUES AND BULLETINS

No. 36—Schwarze Industrial Catalog.
No. 45—Telephone Systems and Apparatus.
No. 46—Industrial Fire Alarm Systems and Apparatus.
No. 49—Electrical Signal Apparatus.
No. 50—Hospital Signalling Systems and Apparatus.
No. 5070—Clocks, Paging and Signalling Systems (Bulletin).

FARADAY ELECTRIC TIME SYSTEMS

Synchronous Motor Operated Time Systems are so far superior to the pendulum master clock and minute impulse secondary clocks (outlying dials), that most architects, electrical engineers and school boards specify them as standard equipment. Year in and year out, these time systems maintain correct time within 2/10 of a second—an accuracy impossible with pendulum clock and minute impulse dial systems.

Faraday single and dual-motored time systems are operated by a self-starting 450 RPM synchronous motor and are especially designed for use in schools, colleges, hospitals, institutions, banks, offices, public buildings, railroad stations, industrial plants, department stores and mercantile establishments. They are furnished in two general types: (1) time service with program instrument providing audible signals on predetermined schedules, and (2) time service only, with any desired number of clock dials from 8 to 24 inch standard—larger sizes to order.

FARADAY ELECTRIC CLOCKS

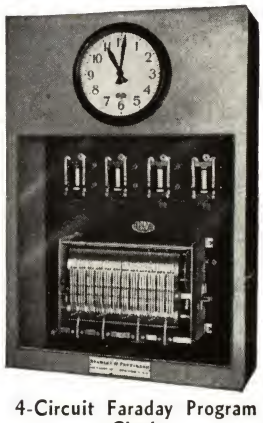


Surface Type Faraday Clock
Catalog No. 1650-1652

Faraday electric clocks with self-starting 450 RPM synchronous motor mechanisms are regularly furnished for 24 volts or 110 volts, 60 cycle AC. Red sweep-second hands are regularly furnished on 8 to 15 inch single motored clocks, but not on dual motored clocks. Clocks require approximately 2 watts (at 50% power factor) for normal operation.

PROGRAM INSTRUMENTS

Faraday program clocks are operated by 450 RPM synchronous motors and are furnished regularly in 1, 2, 4, 6 and 8-circuit capacity, all of the 18-hour type, except 1-circuit clock which is of the 24-hour type. They are designed for use in schools, colleges, factories, etc., to automatically sound bells, buzzers, chimes or horns on a predetermined schedule or schedules in the classrooms, yard or throughout an industrial plant.



4-Circuit Faraday Program Clock
Catalog No. 1634

AUTOMATIC RESETTING DEVICE

On Dual-Motored Electric Time Systems, an Automatic Re-set Unit is used in case of Central Station failure, *this unit will automatically and immediately time the duration of the interruption.* When the Central Station supply of current is restored, the Re-set Unit automatically operates the resetting devices for the *exact length of time required to compensate* for the period of interruption. After that time, the equipment is restored automatically to normal operation.

FARADAY FIRE ALARM SYSTEMS

Faraday Industrial Fire Alarm Systems are designed with full consideration of the necessity that a fire alarm system must be absolutely dependable in operation and, at the same, simple and economical both as to initial cost and maintenance.

They range from the simple, open-circuit system, employing small "break-glass" non-coded fire alarm boxes, to the most comprehensive, electrically double supervised systems, with positive non-interfering code ringing fire alarm boxes, giving automatically a maximum of protection. Covered by Catalogue No. 46.



Code Ring Pull Lever Surface Box
Catalog No. F-2033

DE VEAU TELEPHONE SYSTEMS



Standard Size Hand-Set
Catalog No. 2624

DeVeau Telephone Systems vary, in accordance with the character and size of building, from a simple telephone-connection between two points to the most elaborate intercommunicating system operated with switchboard and outlying stations in and throughout a building or a number of separate buildings.

Intercommunicating Telephone Apparatus for apartment houses, offices, commercial buildings, hospitals, factories, schools, etc., covered by Catalog No. 45.

AC FARADAY VIBRATING SIGNAL GONGS

Listed as Standard by Underwriters' Laboratories
No-Contact-Solenoid-Plunger-Type
(Pat. Appl'd For)

The New and Revolutionary No. 2000 Vibrating Signal Gong—For operation on a Transformer or 110-125 volt AC light and power circuits of 25 to 125 cycles. This gong with only one moving part, a Tobin-Bronze-capped-solenoid-plunger without contacts of any sort, strikes a longer and more powerful blow. Gongs do not have to be removed to contact circuit wires. Supplied with either a full cast grid or complete housing and screen for outside installation. All types of bells, gongs, signals, chimes, etc. are shown in catalog No. 49.



Underdome Type Bell
Catalog No. 2000

FARADAY HOSPITAL SIGNAL SYSTEMS

Faraday Hospital Signal Systems embrace four (4) distinct types of Nurses' Calling Stations, viz.: Locking Button Type, Magnetic Switch Type, Pull Cord Type, Bedside Servicephone Type, as well as the Emergency Calling Feature, Doctor Paging Systems, Doctors' "In-and-Out" Staff Registers, Door and Ambulance Signals, Nurses' Home Signals, Fire Alarm Signals, Emergency Lighting Systems, etc. Covered by Catalog No. 50.



Locking Button Type Ward Calling Station
Catalog No. 1907

HOSPITAL SECOND BEAT CLOCKS

Because these clocks are equipped with a sounder controlled from a stop-start switch and red sweep seconds hand the necessity of having two clocks in operation is eliminated. This type clock is *silent* in operation when the sounder is not in use. The design is similar to the No. 1650 illustrated on previous page.

HOSPITAL NIGHT LIGHTS

Faraday Roof Night Lights are made in several different types to fit various requirements. The dome type with an adjustable shield (illustrated) directs the light in any desired direction by turning the center knob. The hinged door with snap-spring catch opens easily for lamp servicing. This light is extremely popular due to its adaptability and flexibility of application and operation. Chrome finish gives added decorative beauty as well as utility.



Revolving Shield Night Light
Catalog No. 2150

DOCTORS' "IN-AND-OUT" REGISTER

Faraday Doctor's In-and-Out Register is constructed in panel units of 40 names each. Each name stands out clearly and separately against translucent background. An individual toggle-switch controls lighting for each name. Face plates on panels are hinged for accessibility in inserting doctors' names and servicing of lights. Construction of entire unit is such that the one-panel unit may be expanded to any desired number of sections easily and quickly with minimum installation time and expense. Send for bulletin No. 5070.

DOCTORS' PAGING SYSTEMS

Calls for doctors received by operator are quickly signaled throughout the hospital with the Faraday Doctors' Paging Systems. A key on the operator's station master switch box, installed at telephone switchboard, within easy reach of the operator, controls the corresponding number on every Doctors' Station light in the building. Any combination of three numbers can be called simultaneously. Canceling of one number upon answer does not affect the other two, or two numbers may be canceled without affecting the third. Operator can clear the entire board at any time with master control button.

An auxiliary mellow-tone-chime to call all doctors' attention to the fact that a number is being paged, may be obtained for operation in conjunction with the light system. Chime is single stroke—and may be repeated at discretion of operator.

The annunciators used with the Doctors' Paging System can be either flush or surface mounted and are unique in design because of several reasons. They have no screws, bolts, nuts or hinges showing anywhere on the case. The number panel is dead white with absolutely no light reflection or light leakage. The numbers are large size and show up clear cut. The same principal also applies to our regular standard Nurses' Calling Annunciators. Send for Bulletin 5070.

WARREN TELECHRON COMPANY

Manufacturers of Telechron* Timekeeping Equipment

ASHLAND, MASS., U. S. A.

DISTRIBUTORS AND REPRESENTATIVES IN PRINCIPAL CITIES. In Canada, Canadian General Electric Co., Ltd., Toronto, Ont.

Telechron equipment is designed to meet the requirements of The National Board of Fire Underwriters

Telechron—What It Is

The modern, silent, simplified, accurate timekeeper for Schools, Hospitals, Industrial Plants, Office Buildings, Federal, State, County, City and Town Buildings, Airports, Hotels, and every type of structure requiring economical time service at low initial, operating and maintenance costs.

Telechron

**Telechron is the trade-mark (registered in U. S. Patent Office) of the* WARREN TELECHRON CO.

LOCAL REPRESENTATIVE

NAME

ADDRESS

Principle of Operation

Each clock and timekeeping device is operated directly by a self-starting, synchronous motor whose moving parts are sealed in oil for quietness and long life. The speed of this motor is governed by the frequency of the alternating current. Correct frequency regulation is maintained at the generating station of the power company with the aid of a Telechron Master Clock. Therefore, all clocks on a Telechron system indicate correct uniform time because they all respond to the same accurately regulated impulses. A Telechron installation does not require an individual master clock.

Products

Master Clocks—For installation in the central station of a public utility company or in a private power plant—to aid in maintaining constant average frequency regulation.

Central Control Equipment—Devices for controlling, manually or automatically, one or more clocks or timekeeping devices on a common wiring circuit from a convenient central point. Available for both single motor, two-wire, double frequency—and dual motor, three-wire, Telechron clock systems, the exact type to be installed depending on the sizes, quantities and styles of timekeeping equipment to be applied to the system.

Indoor Clocks—Surface, semi-flush, flush, double face, and multiple face clocks; skeleton and marble dial clocks; all in standardized or entirely special designs and finishes.

Outdoor Clocks—Protected dial, surface, semi-flush, double face and multiple face clocks with or without illumination features; exposed dials, skeleton with or without sectional glass and illuminated constructions for mounting on building walls or towers; direct illumination by lamp or gas tubing; all in standardized and special designs.

Special Elapsed Time Indicators—For hospital operating rooms, special classrooms, laboratories, and for timing boxing, hockey, football, basketball, track, etc.

Program Instruments—Single and multiple circuit—metal and plastic foolproof construction—for controlling classroom schedules in schools and colleges. Also for factories, offices and other installations where time schedules must be maintained.

Strike and Chime Program Instruments—For controlling tower bell equipment; hour-strike, half-hour strike, Westminster chimes, Angelus, and ship's bell programs.

Signal Control Boards—To allow wide flexibility in classroom program signal control; with or without manual push buttons for each signal circuit; plugs to connect any signal to any program schedule; open dead front construction of metal and plastic; for 115-volt or low voltage use.

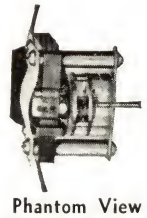
Signals—Classroom buzzers, and bells for surface or flush wall mounting, or within clock cases; corridor bells; and yard gongs. Also tap bells for hospitals or special classroom use, operating on 1, 15, 30 or 60-second intervals.

Features

Simple, fool-proof construction throughout. Powerful, sealed in oil, self-starting, synchronous motor in each device. All equipment designed to operate at 115-volt, in accordance with requirements of National Board of Fire Underwriters, or 24-volt, assuring substantial long-life construction. The Telechron Master Clock in the central station of the power company assures accurate timekeeping through maintenance of correct average frequency.

Low Cost, High Quality

Carefully engineered; built of high grade materials; rigidly inspected during manufacture of parts and after final assembly, resulting in exceptionally high quality throughout. Large production of standardized parts for Telechron clocks makes possible low initial purchase price. Years of proven, trouble-free, accurate, quiet service in schools, hospitals, government buildings, institutions, and all other types of structures, assures low operating and maintenance costs.



Phantom View Telechron Motor

Guarantee

Equipment manufactured by the WARREN TELECHRON COMPANY is guaranteed against original defects of material and workmanship for a period of one year from date of installation while in normal use and service.

The Famous Telechron Master Clock

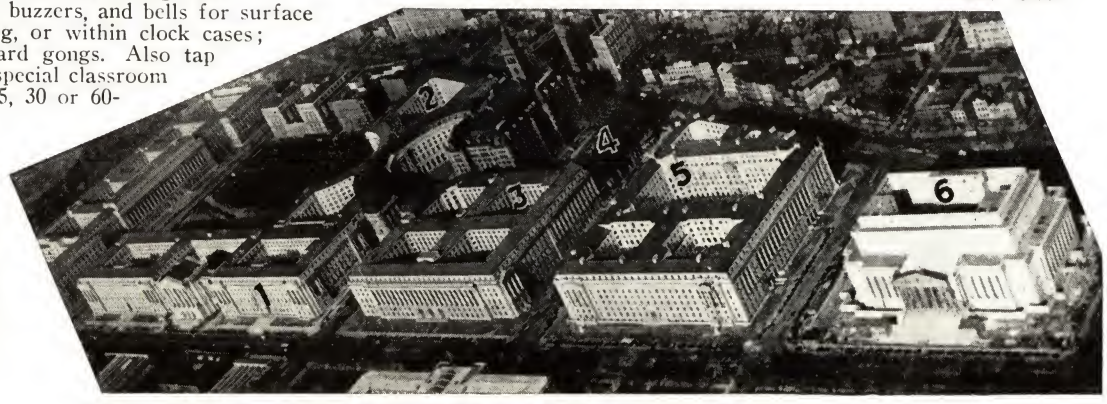
The Telechron Master Clock has been universally accepted by power companies throughout the world as the most satisfactory means of maintaining a correct average frequency.

It is built in two styles: Type "A" for floor mounting and Type "B" for wall mounting. Both Master Clocks contain a suitable Telechron Motor and a very accurate timekeeping movement governed by a pendulum. The motor and the pendulum movement are combined in such a manner as to show on a suitable dial the relation between average frequency and correct time. Thus, with the Master Clock, a station operator is able to maintain an accurate average frequency at all times.

At present, hundreds of Telechron Master Clocks are in use.



Type A Master Clock



United States Government Triangle Group, Washington, D. C.

Apex, Archives (6), Justice (5), Internal Revenue (3 and 4), I.C.C. and Labor (1), and Post Office Department (2), are equipped with five Telechron Systems involving over 4000 clocks. Original installation made in 1930

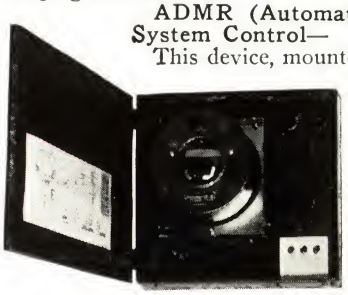
LOW INITIAL, OPERATING AND MAINTENANCE COSTS

CLOCK SYSTEM CONTROL

Although Telechron clocks can be installed individually or in groups, direct to any regulated A.C. power supply, group installations in schools, hospitals, factories, office buildings, airports, banks, etc., should be connected on a common wiring system, and to facilitate corrections for daylight saving or possible power interruptions and controlled from a central point by automatic or manual resetting devices. Resetting devices are available for 2-wire systems with single motored timekeeping devices and for 3-wire systems with dual motored timekeeping devices.

ADMR (Automatic Dual Motor Resetting) System Control—

This device, mounted in a furniture steel cabinet, normally has no effect on the timekeeping of the clocks on the system. When a power interruption occurs, it measures the interruption period. When the power is resumed, it causes all timekeeping units on the 3-wire circuit to operate at an accelerated rate until the system returns to correct time. Then it cuts out, resuming its normal position ready for the next resetting cycle.



No. 92 Automatic Resetting Device—ADMR System

It is of fireproof construction throughout and is provided with manual control for daylight saving corrections. Dimensions 15⅜ in. wide x 14 in. high x 5¼ in. deep (semiflush trim 20 in. wide x 18 in. high with 4½ in. deep wall box). All timekeeping units require Telechron dual motor movements.

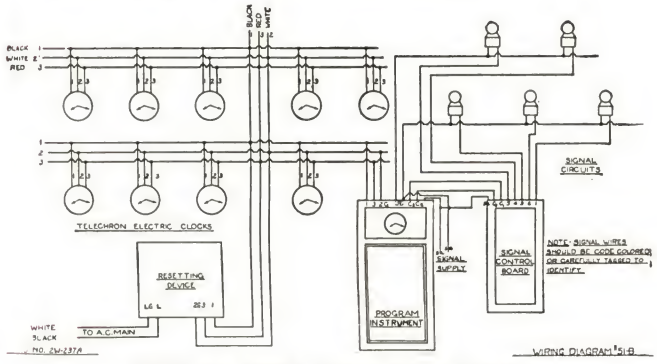


No. 97 Switch

MDMR (Manual Dual Motor Resetting) System Control—

A simple 2-gang flush mounting device with key type switches for starting, stopping, and resetting the entire system, on a 3-wire circuit. An interruption indicator is provided. Dimensions 4 9/16 in. wide x 4½ in. high (with 2½ in. deep wall box).

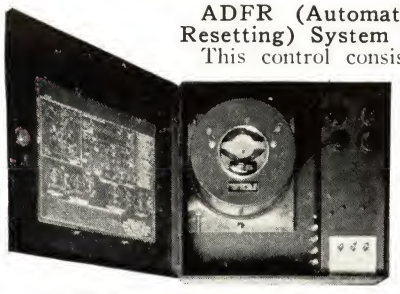
All timekeeping units require Telechron dual motor movements.



ADMR and MDMR System Wiring Diagram

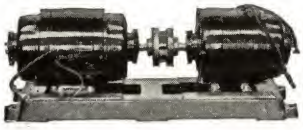
ADFR (Automatic Double Frequency Resetting) System Control—

This control consists of an automatic resetting device similar to the ADMR system control, a motor generator set for supplying double frequency power to the system during resetting periods, and an automatic starter for the motor generator.



No. 93 Automatic Resetting Device ADFR System

The resetting device measures the interruption period and when the power is resumed causes the motor generator to operate, and supply power to the 2-wire clock system at double normal frequency. This causes all timekeeping equipment on the system to operate at double normal time rate until the system is back to correct time. Then the resetting device cuts out the motor generator, returns the clock system to normal power supply and resumes its normal stand-by position ready for the next resetting cycle. The motor generator only operates during resetting periods. The resetting device includes manual control for daylight saving corrections. Dimensions etc. of the resetting device are the same as the ADMR system device. Motor generator size varies with the quantities, size, and design of the clocks on the system. All timekeeping units require Telechron single motor movements.



Motor Generator Set MDFR and ADFR Systems



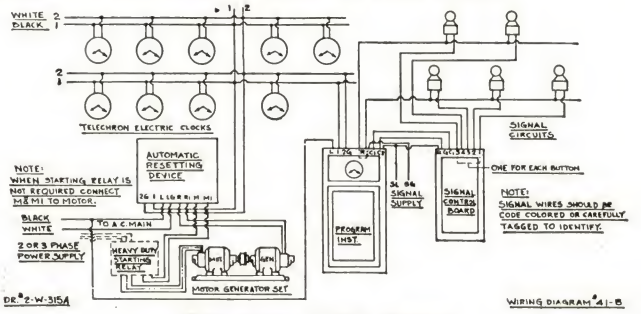
Motor Generator Starter MDFR and ADFR Systems

MOTOR GENERATOR SETS, DIMENSIONS (Inches)
Subject to change without notice

Style	Length, in.	Height, in.	Depth, in.	Weight, lbs.	Motor phases
* 34	32	11¾	10	240	1
16M	20¾	8	7⅛	155	3
33M	22½	9¾	9⅜	215	3
50M	24½	9¾	9⅜	275	3
84M	30¼	14⅝	11¼	457	3
125M	30	11¾	11½	450	3
208M	34	14⅜	11¼	568	3
260M	31¼	16⅛	15¾	635	3
330M	31¼	16⅛	15¾	635	3
410M	39	16⅛	15¾	680	3

* 4-bearing machines—all others 2-bearing.

Machine capacity in clocks varies with size, style, and quantity of clocks. Supply the Warren Telechron Company with a list of proposed equipment to permit recommendations for proper machine.



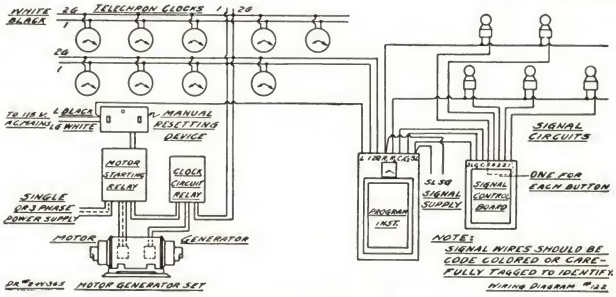
ADFR System Wiring Diagram

MDFR (Manual Double Frequency Resetting) System Control—

Consists of flush mounting control switch same as MDMR system, double frequency motor generator and starter same as ADFR system, and clock circuit relay for switching the system from normal power supply to the motor generator set. All timekeeping units require Telechron single motor movements.



Clock Circuit Relay MDFR System



MDFR System Wiring Diagram

TELECHRON CLOCKS FOR INDOOR USE

The extremely simple principle of operation; sturdy, trouble free construction; and ample reserve power of the Telechron motor; plus the variety of Telechron movements; make it possible to manufacture almost any type of indoor clock regardless of size or detailed features of design.

Each clock is provided with a complete self-contained movement for direct operation from the A. C. power supply. The exact features of the movement vary with the size and construction of the clock dial and the dimensions, weight, material and construction of the hands.

When relief numeral dials are supplied, the crystal is usually eliminated, except on flush clocks.

To meet the usual clock requirements for the majority of projects, a complete line of standardized clock designs are available at attractive prices. Modifications in case finish, dial design and finish, hand design and finish, and final assembly provide many attractive variations from the basic standardized designs. Clocks in these modified designs are available on short notice and at nominal prices because of the use of large quantities of stock materials and parts.

In addition, a trained staff of engineers and designers is maintained to work out the most exacting specifications of architects and engineers to suit the special clock requirements of any specific project.

All clock designs shown in this bulletin are available for use in any Telechron central control clock system.

5100 Type Semiflush Clocks

Designed for school classrooms, hospitals, offices, etc. where attractive "built-in" appearance at low initial cost is desired. This clock is constructed much the same as the surface clock, but includes a suitable wall box to accommodate the movement and a special type of hanger that connects the clock directly to the wall box in a convenient, substantial manner, with allowances for the usual wall box mounting variations.



5100 Type Semiflush Clock

Designs with variations similar to those available in the surface clock designs are also available at nominal additional cost in the semi-flush clock.

5000 Type Surface Clocks



5000 Type Surface Clock

Designed for use in school classrooms, hospitals, offices, etc. where low initial cost is paramount, the round surface clock presents an attractive appearance. It consists of a metal case of modern, simple lines, convex crystal glass*, metal hands, metal dial, movement with long leads for connection to wiring circuit and hanger with special wall fitting to insure substantial mounting to a flat surface.

The standardized design has the case finished in statuary bronze lacquer with hands of attractive design finished in black. The dial has clear, legible, black, Arabic characters on a white background.

Variations from the basic design at nominal extra cost include cases of materials to meet any special finish requirements such as natural metal or electroplate finishes to match samples; special colored lacquer finishes; lithographed aluminum Arabic dials; etched, satin-silver Arabic dials; or dials with relief Arabic numerals; and special design hands of cast or cut metal construction in special finishes. Glass dials, for use with or without illumination features, and dials of various building finish materials can also be supplied.

**24-in. size furnished with flat crystal only.*

400 Type Flush Clocks

This attractive clock is designed for private offices, assembly rooms and similar locations, and consists of round metal crystal frame hinged to metal dial plate, with convex crystal glass, dial, hands, etc., similar to the surface clock. The dial back fastens directly to the wall box, and hands are conveniently accessible for setting. Standard finish is oxidized statuary bronze. Variations from standardized construction, similar to the surface and semi-flush models, are available at nominal extra cost in the flush line of clocks.



400 Type Flush Clock

2500 Type Boiler Room Clocks

This clock is designed for use in boiler rooms, laundries, foundries, and similar locations where moisture and dust proof case construction is desired. The case is of cast metal with hinged door; having rubber-set, convex, crystal glass and with dial, movement and hands attached to it. Finish is in dull black lacquer. Designs of dials and hands are the same as the 5000 type clock.

TELECHRON CLOCKS FOR INDOOR USE, DIMENSIONS (Inches)
Subject to change without notice

Style No.	Dial diameter	Overall diameter	Projection
Round Metal Surface Clock			
5008	8	10 3/4	3 9/16
5010	10	12 3/8	3 9/16
5012	12	14 3/8	3 9/16
5015	15	17 3/8	3 9/16
5018	18	20 3/8	3 11/16
* 5024	24	26 3/8	3 9/16
Round Metal Semi-Flush Clock			
5108	8	9 5/16	1 7/8
5110	10	11 5/16	1 7/8
5112	12	13 5/16	1 7/8
5115	15	16 3/8	2
5118	18	19 3/8	2
* 5124	24	25 1/2	1 7/8

Style No.	Dial diameter	Overall diameter	Projection
Round Metal Flush Clock			
444	6	6 5/8	1 5/32
445	8	8 5/8	1 5/32
446	12	13 1/8	1 1/2
447	15	15 5/8	1 1/2
448	18	18 5/8	1 3/8
Round Cast Metal Case Clock			
2508	8	12	3 7/8
2510	10	14	3 7/8
2512	12	16 1/8	3 15/16
2515	15	19 3/8	4 1/8
2518	18	23	4 1/4
* 2524	24	29 1/4	5 3/4



2500 Type Boiler Room Clock

700 Type Skeleton Clocks



700 Type Skeleton Clock

The standardized skeleton clock shown here consists of cut metal Roman characters superimposed on metal rings; with or without minute dots mounted on metal ring; cut metal hands and plain center plate to which the movement is attached. The center plate attaches to a wall box set into the wall. The box is completely covered by the wall surface except for an opening large enough to clear the clock movement. Dial, hands and center plate are finished oxidized statuary bronze.

Variations from this standardized design at nominal cost include use of Arabic or special shaped characters; mounting of characters direct to wall or background surface by spurs or screws; special cast or cut metal hands; and special finishes to match samples—all in round, square, octagonal or rectangular outlines.

These open face clocks are designed for use in special locations such as lobbies, foyers, auditoriums, and important public spaces in all types of buildings.

SKELETON CLOCKS, DIMENSIONS (Inches)

Subject to change without notice	3 ring design (Minute dots on outer ring)		2 ring design (Without minute dots)	
Dial, in.	Style No.	Diam., in.	Style No.	Diam., in.
12	756	12½	776	11
15	757	15	777	13¼
18	758	18	778	16¼
24	760	24	780	21⅝
30	761	30	781	27½
36	762	37	782	33½
42	763	43	783	39½
48	764	49	784	45½

1300 Type Marble Clocks



1300 Type Marble Clock

Marble clocks are suitable for wall mounting in lobbies, foyers, auditoriums, banking rooms, and other public spaces. They consist of marble dial blank with honed or dull finish; relief characters and minute dots pinned to dial blank; special cut metal hands; movement; and wall box.

Dial blanks of all kinds of foreign and domestic marble are available. Various designs of hands and characters are likewise available in various finishes to match samples, at nominal extra cost. Also square, octagonal or rectangular outlines.

MARBLE CLOCKS, DIMENSIONS (Inches)
Subject to change without notice

	Metal trim ring		Square edge	
Dial, in.	Style No.	Diam., in.	Style No.	Diam., in.
12	1361	13 5/16	1391	12½
15	1362	15 3/8	1392	15
18	1363	18 3/8	1393	18
24	1364	25½	1394	24
30	1365	31	1395	30
36	1366	37	1396	36

5300 Type Suspension Clocks



5300 Type Suspension Clock

The double face saddle suspension clock consists of two No. 5000 type clocks of standard design, mounted by the usual hanger fittings to a cast center ring and saddle suspension unit. The suspension unit is designed for wall or ceiling mounting, attaching directly to the special terminal box supplied with it. This clock is designed for use in office building, school and hospital corridors where ceilings are low. Wall mounting is recommended when projecting ceiling light fixtures interfere with the clock visibility. Equipped with illuminated glass dials, this clock makes a very practical unit for hospital corridors, providing clearly visible time, and subdued corridor lighting. Standard finish and details are similar to the No. 5000 type clocks. These models are also available with variations similar to the No. 5000 type clocks at nominal extra cost.

5400 Type Suspension Clocks



5400 Type Suspension Clock

The double face chain suspension clock consists of two No. 5000 type clocks of standard design, mounted by the usual hanger fittings to a cast center ring, with chains and cast saddle for attaching to ceiling terminal box. Chain length may be varied to suit individual requirements. Standard finish and details are similar to the No. 5000 type clocks. These clocks are also available with variations similar to the No. 5000 type clocks at nominal extra cost. They can also be equipped with illuminated glass dials.

SUSPENSION CLOCKS, DIMENSIONS (Inches)

Dial, in.	Shell diam., in.	Overall depth, in.	Style No.	Overall height, in.	Style No.	Overall height, in.	Subject to change without notice
10	12 5/8	8	5310	15 5/16	5410	27	
12	14 5/8	8	5312	17 5/16	5412	31 5/8	
15	17 11/16	8	5315	21¼	5415	36 5/8	
18	20 11/16	8¼	5318	24¼	5418	42¾	
24	26 7/8	8	5324*	30¼	5424*	54¾	

5500 Type Suspension Clock

Supplied for ceiling mounting, in the center of large offices, department stores, cross corridors, and similar locations—metal case construction with rigid tube suspension. Equipped with illuminated glass dials, this clock makes a practical 3 or 4-way hospital corridor unit—providing clear dial illumination and subdued corridor lighting. Variations from basic designs similar to 5000 type clock variations are available at nominal extra costs. 5600 type clocks with chain suspension features in place of rigid tube mounting are also available.

DIMENSIONS (Inches)

Style No.	Dial size	Case (cube)	Std. overall height
5510	10	13½	17
5512	12	15½	19
5515	15	18½	23⅛
5518	18	20½	25⅛
5524*	24	26½	32⅝

*24-in. size furnished with flat crystal only.



5500 Type Suspension Clock

PROGRAM INSTRUMENTS

Telechron program instruments are available to meet the simplest routine requirements of the grade, grammar, or country day school; or the varied and complex schedules of the modern junior and senior high schools, junior colleges, colleges, and universities. They are equally suitable for controlling working schedules in factories, office buildings, and all plants where a time schedule must be maintained.

Each device is a complete, self-contained unit, consisting of a Telechron motor-driven timing element mounted in a heavy gauge, furniture steel cabinet, with pilot clock, cutout and momentary contact switches, relays and terminal connection block. It is of all metal construction, with various operating parts interconnected by heavy gauge rubber covered wire; all designed for 115-volt operation, and in accordance with requirements of the National Board of Fire Underwriters. Cabinets are finished in statuary bronze lacquer and equipped with cylinder locks to protect against tampering.

A combination of unique design features, high grade materials and expert workmanship assure foolproof, quiet and efficient program timing service with a minimum of attention. Designed for 115-volt operation; also available for 24-volt operation.

Single Circuit Type

Consists of a five-minute interval, 24-hour cycle, 7-day calendar, adjustable signal duration program element; with 5-in. clock; with external cutout and momentary contact switches; marked terminal block and metal cabinet finished in statuary bronze lacquer.



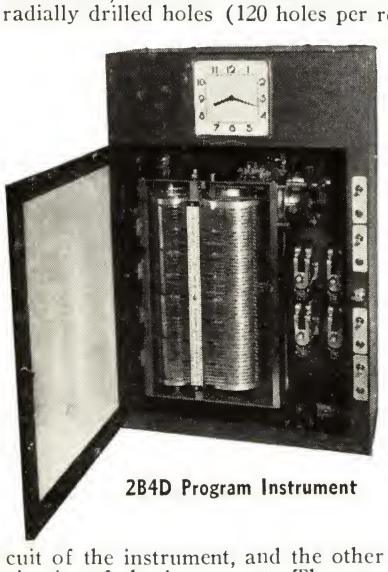
Single Circuit Program Instrument

The program schedule is cut in a 24-hour metal disc, graduated to five minute intervals. The disc is easily exchanged or replaced while the device is operating. The signal load is carried through a mercury switch of 6-ampere capacity, thereby completely eliminating contact and relay problems. By insertion of pins in the seven-day calendar wheel, any 24-hour period can be cut out. The calendar shifts at 2:15 A.M. The signal duration period is easily adjustable from one to six seconds. Designed for surface or semi-flush mounting, the installed device presents a neat, businesslike appearance and is a decided asset to any school, or factory. Dimensions, 13 in. high x 8 in. wide x 5 5/16 in. deep. Flush trim 17 in. high x 12 in. wide x 4 in. deep wall box.

Multiple Circuit Type

Consists of a one-minute interval, 12 or 24-hour cycle, 7-day calendar, multiple circuit, adjustable signal duration, program element; element drive unit; a heavy duty relay for each signal circuit; external cutout and momentary contact switches for manual control; 5-in. clock; and marked terminal connection block; all in a glass paneled metal cabinet. The clock and connection block are in a separate upper compartment.

The timing element includes two cylinders, mounted in vertical position. The timing cylinder makes one revolution in every two hours, and has circumferential rows of equally spaced, radially drilled holes (120 holes per row) grouped into 12-hour sections of 6 rows or 24-hour sections of 12 rows, number of sections varying according to the number of circuits). The calendar cyclinder shifts periodically by 2-hour steps, one revolution in 7 days, and is divided into 12 or 24-hour sections according to the style. By insertion of pins in the proper holes, as indicated by minute graduations on the cylinders and the vertical scale mounted between these cylinders, signal circuits can be operated any minute of a day during a 7-day period.



2B4D Program Instrument

Two signal duration contacts are provided; one controlling one circuit of the instrument, and the other controlling the remaining circuits of the instrument. They are adjustable for from two to six seconds' duration, for indoor and outdoor signals.

The element drive unit is a complete unit in itself, easily repaired or replaced when necessary, in a matter of a few minutes.

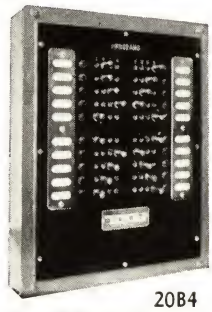
An attractive square pilot clock operates from a separate movement and is located above the main cabinet door, providing an attractive finished appearance.

Circuit cutout and momentary contact switches with identity plates, mounted on the right side of the cabinet face, permit surface or semi-flush installation without modifications.

A combined white nickel, aluminum and steel finish on all exposed metal parts provide an attractive appearance that will last indefinitely. The cabinet is finished in statuary bronze lacquer.

The 2, 4 and 6-circuit, 12-hour cycle, and 2 and 4-circuit, 24-hour cycle instrument cabinets are 27 3/8 in. high x 18 in. wide x 6 7/8 in. deep. The 6-circuit, 24-hour cycle instrument cabinet is 33 7/8 in. high x 18 in. wide x 6 7/8 in. deep. Flush trim 10 5/8 in. longer, 3 in. wider, with 7-in. deep box.

SIGNAL CONTROL BOARD



20B4 Signal Control Board

The extremely varied program schedules of modern junior and senior high schools frequently necessitates switching individual class and study rooms from one program schedule to another, quickly and easily. The Telechron combination signal control board provides this convenience. This dead front unit, designed for use in conjunction with a Telechron multiple circuit program instrument is of modern design and of high grade construction throughout.

Built entirely of metal and plastic material and completely insulated, it can be used on a 115-volt or a 24-volt system. Push-fit circuit plugs permit connecting any outlying signal or signal circuit to any program circuit. A push button is provided for each outlying signal or signal circuit, permitting use of the outlying signal as a special call bell or telephone signal. The board is designed for either surface or flush mounting.

The combination of glossy black plastic panel, plastic knobbed plugs, and push buttons, plus metal trim finished in statuary bronze lacquer, results in an attractive modern panel. Nickel plated identity plates add further to its practicability and attractiveness. All wire connections are made on the back of the panel to substantial terminals. Master circuit buttons and grand master buttons are also available when desired. Sizes range from 10-point, 2-circuit board measuring 12 in. high x 9 in. wide x 3 in. deep, to 100-point, 6-circuit board measuring 24 in. high x 18 in. wide x 4 in. deep.

TELECHRON SIGNALS

In conjunction with program instrument installations in schools, offices, factories, etc., audible signal devices play an important part. Signal units embracing equivalent design and engineering features, materials, manufacture and workmanship equal to Telechron clocks and devices, are of paramount importance if the usual Telechron satisfactory results are to be secured. Telechron signals have been developed to meet these requirements.

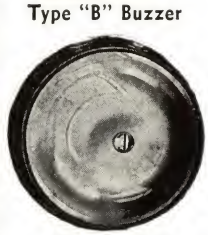
Telechron Type "B" Buzzer—Designed for school classroom use, or any other application where a dependable, high grade signal is desirable. Provided with long leads for power connections, when applied to back of clock dial or installed in single gang (4 1/16 sq.) flush box. Also available with screw terminals for surface mounting.



Type "B" Buzzer

Supplied for any commercial voltage and frequency. No contacts or adjustments to get out of order. Designed for continuous operation, and requiring very little power, the buzzer matches Telechron clock quality in every respect. Overall dimensions: 3 29/32 in. long, 1 13/16 in. wide, 1 7/16 in. high. Power rating: 2 watts at 115 volts, 60 cycles.

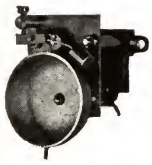
Corridor Bells—Under dome, tuned frequency, vibrating plunger type construction for direct mounting to wall box; 3, 4, 6, 8 and 10-in. size. For 115-volt or 24-volt.



Corridor Bell

Yard Gongs—Similar to corridor bell but weatherproofed, and with slow vibrating plunger, without contacts, with cast bell metal gong and with cast aluminum grid or screen protecting housing. 8, 10 and 12-in. sizes.

Tap Bells—Designed for use in hospital operating rooms, school laboratories, and special study classrooms where an audible, fixed cycle, time signal is desirable. Consists of a Telechron motor fitted with a cam for lifting a striking hammer, a cast bell-metal gong and provision for mounting. Installed inside of a clock case or inside a wall box.



Tap Bell

Available in 1, 15, 30, or 60-second intervals, for 115-volt or 24-volt operation. Controlled through a single gang switch of any type. Dimensions, 4 in. high x 3 1/4 in. wide x 2 3/4 in. deep.



Yard Gong

OUTDOOR CLOCKS

Telechron clocks for outdoor application are available in a variety of standardized sizes and designs to meet most architectural requirements. Entirely special designs or modified standardized designs can be produced, however, when necessary, to meet most exacting requirements and specifications.

Outdoor clocks are generally divided into two distinct groups; protected dial type and exposed dial type. Each of these types are available for use with or without illumination.

PROTECTED DIAL OUTDOOR CLOCKS

These clocks are available in standardized designs and sizes with semi-flush and flush cases either with or without provision for illumination. Surface, double face and multiple face adaptors are also available to permit converting these semi-flush or flush clocks into surface, double face or multiple face clocks.



6100 Type Semi-flush Clock



Clock Only



Surface Adaptor and Clock



Double Face Adaptor and Clocks

DIMENSIONS (Inches)
Subject to change without notice

Dial size	Clock Style No.	Outside diam.	Overall depth*	Wall opening diam..	Depth with surface adaptor	Depth with double-face adaptor
18	6118	27	5 15/16	24 1/4	5 7/8	11 5/8
24	6124	33	5 15/16	30 1/4	5 7/8	11 5/8
30	6130	38 1/4	5 15/16	35 1/2	5 7/8	11 3/4
36	6136	44 1/4	6 3/4	41 1/2	6 3/4	13 3/8

* Includes 4½-in. deep movement and transformer covers, which are below the mounting surface.

Semi-flush Clocks—Consist of metal dial, hands, movement, crystal glass, crystal mounting bezel and weatherproof housing. Dials are furnished with white background and black Arabic numerals and minute dots. Illumination is provided by a hidden ring of gas tubing, mounted between the dial and crystal. The tube electrodes extend through the dial for connection, by porcelain receptacles, to the transformer attached to the dial back (electrodes, receptacles, and transformers protected by a weatherproof housing). Gas tubes are available in red, blue, green and white colors. Elimination of the gas tube and transformer provides a non-illuminated clock.

The clock mounting flange is sufficiently wide to permit mounting an external tube for decorative purposes. Crystal glass bezel and mounting flange are finished in statuary bronze lacquer.

Flush Clocks—Consist of an angle iron case ring, crystal glass, crystal ring, and white glass dial with etched Arabic characters and minute dots filled with black enamel; movement and hands — all complete, ready to install. To properly protect this type of clock from the elements and assure satisfactory operation, it is necessary to attach it in a weatherproof manner to a weatherproof structure. When illumination is required, lamps, or gas tubes must be installed as part of the mounting to which the clock is attached, or provided as part of the clock. Crystal glass ring and frame are finished in statuary bronze lacquer.



2400 Type Flush Clock

DIMENSIONS (Inches)
Subject to change without notice

Style	Dial size	O. D.	Opening
2430	30	33 3/4	31 3/4
2436	36	39 3/8	37 3/4
2442	42	45 3/8	43 3/4
2448	48	51 3/8	49 3/4
2454	54	57 3/8	55 3/4
2460	60	63 3/8	61 3/4

Surface Adaptor—Designed to permit surface mounting of a semi-flush or flush clock. Of all metal construction with ears for mounting and provisions for wire connections. When used with flush clocks, it is equipped with lamps, receptacles and wiring for illumination and hand holes for convenient lamp replacements. All exposed surfaces are finished statuary bronze lacquer.

Double Face Adaptor—Designed to permit the mounting of semi-flush or flush clocks to a suspension bracket or post. Construction and finish features are similar to the surface adaptor.

Multiple Face Adaptor—Designed to permit the mounting of semi-flush or flush clocks to a suspension bracket or post. The construction usually consists of an angle iron frame covered with sheet copper, bronze or steel, with hand hole provisions for access to the inside when necessary.

Exact construction features usually vary with the installation requirements. All exposed surfaces are finished in statuary bronze lacquer.

Mounting Posts—Posts for mounting double or multiple face clock constructions consist of fluted steel shaft and base section, with saddle for attaching clock-assembly.

The complete post is anchored into place by steel rods set into a concrete foundation.

All exposed surfaces are finished in statuary bronze lacquer.

Suspension Brackets—Brackets for mounting double and multiple face clocks can be supplied. The construction is of steel or bronze according to exact specifications. As suspension brackets vary considerably with the size of clock, location, building codes, etc., it is usually necessary to design them entirely special to meet the requirements of each installation. Standard finish is statuary bronze lacquer.



Typical 36-in. Post Clock with Sign

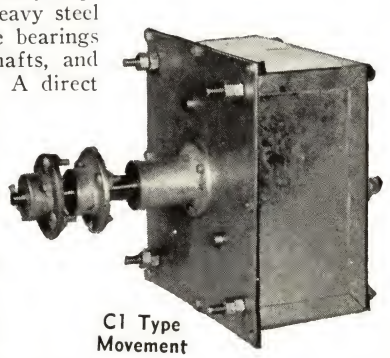
Movements—Protected dial clocks are available with single motored movements for individual or MDFR or ADFR system application; with dual motored movements for MDMR or ADMR system application.

EXPOSED DIAL OUTDOOR CLOCKS

Clocks of this construction are usually confined to the larger sizes (36 in. and over), and vary considerably in detail features.

Basically, they consist of movement, movement supports, hands and dial structure.

Movements—Telechron exposed dial clock movements are of heavy duty construction, mounted directly behind the center of each dial, and directly support the clock hands. Heavy steel plates with oilless bronze bearings support stainless steel shafts, and cut iron and steel gears. A direct reading pilot dial is provided to permit convenient manual resetting. The weatherproof housing is an integral part of the movement. Studs are provided for attaching the movement to steel supports. These movements are produced in five sizes to suit dials



C1 Type Movement

ranging from 3-ft. diameter up to and including 40-ft. diameter. Larger sizes can be produced when necessary.

All are of the *single motor type only,* for individual installation, or as part of a Telechron centrally controlled system of the manual or automatic double frequency resetting (MDFR or ADFR) type. When required, these movements are equipped with brushes and collector rings for direct illumination of the hands by gas tubing or lamps.

Hands—Standardized hands are of wood or metal and are of simple taper-shaped design. Variations in outline design and in materials can be made to suit architects' requirements, provided such requirements come within the weight, length, and wind resistance requirements of the standardized designs.

Dials—Standardized designs in skeleton, glass insert skeleton, monopiece glass, and built-in construction are available. Special designs to meet architects' requirements can also be supplied.

Skeleton Type—Skeleton dials in sizes of from 3 to 16-ft. diameter consist of cast iron, bronze or aluminum sections bolted together, with mounting screws, anchors, etc., to suit installation conditions. Each dial section consists of Roman numerals and minute dots integrally cast with the ring section.



Skeleton Dial

DIMENSIONS (Inches)
Subject to change without notice

Style	O. D.	Wall opening
804	48	46 3/4
805	61 1/2	60
806	72	70 3/4
807	84	82 3/4
808	96	94 3/4
809	108	106 3/4
810	120	117 1/2
811	132	129 1/2
812	144	141 1/2
813	156	153 1/2
814	168	165 1/2
815	180	177 1/2
816	192	189 1/2

The cast iron dial sections are cadmium plated and finished in statuary bronze lacquer to withstand the elements. Bronze sections are left unfinished and aluminum sections are statuary bronze lacquer finished. These dials are suitable for mounting to the face of a wall or tower structure, with or without flood illumination. Movement mounts to wall, behind dial center.

When desired for mounting into a wall or tower opening, the skeleton dial can be fitted with white glass segments and center glass, permitting lamp or gas tube illumination from the back of the dial. With this construction the movement supports and movement are attached to the dial sections.



Monopiece Glass Dial

Monopiece Glass Type — Available in sizes of from 3 to 5-ft. diameter, this dial consists of milk white glass with etched numerals and dots filled with black enamel, "Tee" iron ring, finished in statuary bronze lacquer with gasket, bolts and anchors for mounting into wall or tower opening. Movement supports attach to the wall surrounding the opening. Illumination may be by lamps or gas tubing.

DIMENSIONS (Inches)
Subject to change without notice

Style	Dial size	O. D.	Wall opening
MT36	36	38 5/8	37 3/4
MT42	42	44 5/8	43 3/4
MT48	48	50 5/8	49 3/4
MT54	54	56 5/8	55 3/4
MT60	60	62 5/8	61 3/4



Typical Built-in Dial Construction

Built-In Type — Modern structures can be designed with "built-in" dials constructed of the same materials as the facing of the building. Numeral openings are of metal, casement-type sash construction fitted with glass for inside lamp illumination, and with metal for direct illumination by gas tubing. Tube transformers can be mounted directly to the metal panel. The center section of the dial is also of casement-type sash construction to permit mounting of the hands direct to the movement from the inside of the building. These unique features permit lower installation costs and simplify illumination service problems.

Depending upon the size and construction, exposed dial clocks can be illuminated by flood lighting; by lamps located in back of the dial; by gas tubing mounted in back of the dial; or by gas tubing mounted directly on the face of the hands and dial; or by a combination of any or all of these methods.

Illumination—The means for illumination should be supplied from a separate source of power, independent of the clock movement, thus assuring constant time service and permitting the use of automatic time switch control of the clock lighting system.

Installation—All Telechron outdoor clocks in sizes up to and including 16-ft. diameter can be installed by local riggers, with the aid of blueprints and instructions supplied with the clock equipment. Larger installations may require the services of a factory engineer to supervise the erection.

Tower Bell Program Instruments

Clock installations in towers frequently require means for controlling the operation of tower bells. Telechron strike and chime program instruments are available for this purpose. These instruments are similar in basic design, to the Telechron multiple circuit program instrument, except that they operate on a predetermined fixed program schedule. They are available in a number of style combinations, including hour strike; hour and half hour strike; hour and quarter hour strike; Angelus; and Westminster or Canterbury chimes; operating from 1 to 5 bells, according to requirements. These instruments consist of motor driven timing element, timing relay, bell circuit relays, and manual control switch, — all mounted in a metal cabinet, finished in statuary bronze lacquer and fitted with a cylinder lock.

This device is designed to control the operation of bell relays, solenoids, hammers and bell equipment, as recommended and supplied by tower bell manufacturers. The cabinet dimensions are 27⅜ in. high x 18 in. wide x 6⅞ in. deep.



TSIC4 Strike and Chime Program Instrument, Series C

ELAPSED TIME INDICATORS



10-Minute Basketball Timer with Sweep-second and 10-Minute Hands



12-Minute Hospital Timer with Sweep-second and 12-Minute Hands, Accelerated Reverse Reset and Zero Stop Latch



15-Minute Football Timer (Boston College, Newton, Mass., Installed 1934)

Telechron special elapsed time indicators of the conventional clock dial type are available in standardized sizes, designs, and constructions suitable for hospital operating room use; special school classroom use; school and industrial laboratory use; special process timing; and for timing various sports including boxing, basketball, hockey, wrestling, football, swimming and track.

Depending on the exact requirements of the operation that is to be timed, devices can be supplied for time cycles varying from one minute to 30 days elapsed time.

Dial sizes range from 3-in. diameter for the small semi-portable types to a 10-ft. diameter for football spectator units.

Movement constructions vary according to dial size and application. These constructions range from the simplest gear train, designed for continuous operation use to more elaborate constructions having provisions for instantaneous starting, stopping, high speed resetting, "zero" synchronizing, and contacts for operating fixed cycle start, stop, and warning signal circuits, such as bells, buzzers, horns and lights.

Although the recommended sizes and types of equipment vary with the exact application, generally an installation consists of: a wall mounting timer, having dial size to suit the anticipated range of vision; a control unit having necessary switches, and possibly with a small pilot dial timing unit; signal units (horns, bells, lights, etc.); and necessary wiring from source of power to the control, and from the control to the timing and signal units.

The wide variety of standardized equipment available makes it possible to take care of innumerable timing problems at nominal cost. Detailed information, recommendations, and estimates on equipment concerning any particular timing problem will be supplied on request.

A typical Telechron football timer installation consisting of 10-ft. spectator unit; semi-portable sideline control with pilot dial having Sweep-second and 15-Minute hands; control switches; green and red semaphore lights to show play and time-out, respectively; and necessary wiring.

TELECHRON SYSTEM SPECIFICATIONS

For MDMR (Manual Dual Motor Resetting) System—Use Nos. 1 to 4, incl., 9 to 11, incl., 16 to 22, incl.

For ADMR (Automatic Dual Motor Resetting) System—Use Nos. 1 to 3, incl., 5, 9 to 11, incl., 16 to 22, incl.

For MDFR (Manual Double Frequency Resetting) System—Use Nos. 1 to 4, incl., 6 to 22, incl.

For ADFR (Automatic Double Frequency Resetting) System—Use Nos. 1 to 3, incl., 5 to 7, incl., 9 to 22, incl.

For Individual Installation Without Control—Use Nos. 1, 3, 9 to 22, incl.

Fill in italicized spaces to suit the particular system being specified.

All single motored equipment can be individually installed.

1. In accordance with plans and specifications, install a Telechron clock system, to operate direct from a (115 v. or 24 v.) a-c. circuit.

2. Provide an a-c. multiple connected *(manual or automatic)* centrally controlled *(dual motor or double frequency)* resetting clock system. Mount control with top edge 44 in. above floor in the *(location)* on (N., E., S., or W.) wall—a clean, dry location.

3. Provide each clock face and timing device with a movement driven by a self-starting sealed in oil, synchronous motor.

4. Provide a flush mounted, manual control switch, with interruption indicator and key switches, for stopping and resetting the system.

5. Provide a *(surface or semi-flush)* automatic control; consisting of sealed timing element, fused cutout switch, manual control switches and terminal connection block, all mounted in a metal cabinet with flush cylinder lock; to automatically reset the clock system to correct time when power returns, following an interruption of 12 hrs. or less.

6. Provide a ball bearing motor-generator protected against dirt and water; with 115 or 230 volt (60) cycle (1, 2, or 3) phase induction motor limited to 50° C. temperature rise; and with 220 volt (120) cycle (1 or 2) phase generator limited to 55° C. temperature rise; all set on a cork base, on the floor or on a pedestal, directly below the resetting device, or other equally satisfactory clean, dry location.

7. Provide when necessary an enclosed motor starter with manually reset thermal cutout.

8. Provide an enclosed generator operated clock system relay with silver contacts for carrying the normal and resetting power.

9. Provide indoor surface, semi-flush and flush clocks with round steel, aluminum, or copper cases, convex crystals, white dials of metal with Arabic numerals and minute dots, black hands and movement. Special wall boxes with provisions for attaching semi-flush or flush clocks shall be furnished with these clocks. Surface and semi-flush clocks shall be finished in statuary bronze lacquer and have concealed setting knob. Flush clocks shall be front setting with hinged crystal frame, and shall be finished in oxidized bronze. Skeleton clocks shall have *(Arabic, Roman, or special shaped)* characters mounted to wall surface *(on rings or by spurs)*, cut metal balanced hands, center plate with movement attached and special wall box. Marble clocks shall have *(Arabic, Roman, or special shaped)* characters mounted by spurs to *(square edge, or metal ring trimmed)* dial blank of *(kind)* marble, cut metal balanced hands, movement and special wall box. Double face clocks shall consist of saddle and *(direct or chain)* connected center shell fitted with two surface clocks, and terminal box.

10. Outdoor Clock—*Protected Dial*—Provide in *(location)* round, metal, semi-flush, statuary bronze lacquer finished, weatherproof clock, with front mounted crystal, white dial with black Arabic characters, black hands, concealed *(color)* gas tube illumination between dial and crystal, compression type electrode connectors, transformer, and necessary weatherproof covers.

11. Provide in the *(location)* a weatherproof mounted round angle iron ring flush statuary bronze lacquer finished clock, with front mounted crystal, white glass dial having etched Arabic characters, black hands and shadowproof mounted movement. Locate *(quantity)* lamps in opening 4 in. back from dial and cover opening with hinged light baffle.

12. Outdoor Clock—*Exposed Movement and Hands*—Provide in the *(location)* and *(size)* exposed dial clock with weatherproof housed single motor movement; having oilless bronze bearings, stainless steel shafts, pilot dial, setting knob, and clutch; mounting directly behind each dial; with simple tapered balanced hands, of *(channel section aluminum or seasoned white pine)* dull black lacquer finished, mounted to movement.

13. Skeleton Dial—Provide a self-supporting bolted-together sectional cast *(bronze, aluminum, or iron)* dial consisting of rings with Roman numerals and minute dots, with anchor bolts and spacers for mounting *(in or to) (material)* wall.

14. Glass Inserts for Skeleton Dial—Drill Tee section dial rings to hold white glass inserts in place by rustproof clips and screws. Weatherproof joint between mounting surface and outer dial ring.

15. Built-in Dial—Clock dial shall be the finished building wall, with in-swinging hinged metal paneled sashes at numeral locations, fitted with *(color)* gas tubing and transformers; with center of dial similarly constructed to permit swinging metal hands into building, for access to *(color)* gas tubing and waterproof transformers on hands. Clock movement shall be attached to swinging dial center and shall include commutation features for hand illumination.

16. Program Instrument—*Single Circuit*—Locate in *(location)* on N., E., S., or W.) wall with lower side of cabinet 48 in. above floor; in a *(surface or semi-flush)* metal cabinet with flush cylinder lock; an all-metal and plastic single circuit 5-min. interval, 24-hr. cycle, 7-day calendar program instrument with mercury relay, and 1-6 second signal duration adjustment, and identified external cutout, and push button switches; with pilot clock. Finish cabinet in statuary bronze lacquer.

17. Program Instrument—*Multiple Circuit*—Provide in *(location)* on (N., E., S., or W.) wall, with bottom side of cabinet 48 in. above floor; in a *(surface or flush)* glass paneled metal cabinet with flush cylinder lock; an all-metal and plastic (2, 4, or 6) circuit (12 or 24-hr.) cycle, 7-day calendar, minute interval program instrument; with adjustable long and short duration contacts with relays equipped with silver contacts with identified external cutout and push button switches for each circuit and separately accessible connection block and pilot clock.

18. Signals—*Buzzer*—Provide metal and Bakelite *(flush or clock case)* mounted contactless, vibrating reed buzzers with long leads.

19. Bells—Provide all-metal *(gong size)* vibrating, contactless mechanism concealed under bell-type gongs for corridors.

20. Yard Gong—Provide all-metal cast bell metal *(size)* gong slow vibrating, contactless, weatherproof bell mounted with *(protecting grid or screen housing.)*

21. Guarantee—All Timekeeping equipment shall be guaranteed against mechanical and electrical imperfections for a period of 1 year from date of written acceptance by architect.

22. Wiring—Wiring shall be code colored, black, white, and red, for No. 1, No. 2, and No. 3 wires, of respective clock systems; tagged for signal systems; and installed in accordance with local building codes to clock manufacturer's diagram (No. 41B-ADFR) (No. 51B MDMR and ADMR) (No. 122 MDFR). The No. 2 wire shall be grounded.

CATALOGS

Additional detailed information on equipment listed in this bulletin will be supplied on request to WARREN TELECHRON COMPANY, Special Clock Sales Department, Ashland, Mass.

AMERICAN AUTOMATIC ELECTRIC SALES COMPANY

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AUTOMATIC ELECTRIC COMPANY

Designers and Manufacturers of Telephone and Signal Systems
1033 West Van Buren Street, CHICAGO, ILLINOIS

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PRODUCTS OF INTEREST TO ARCHITECTS AND CONTRACTORS

AUTOMATIC ELECTRIC P-A-X (PRIVATE AUTOMATIC EXCHANGE) SYSTEMS

PRIVATE MANUAL TELEPHONE SYSTEMS.
INTERCOMMUNICATING SYSTEMS.

INTERIOR COMMUNICATION—AN IMPORTANT PART OF BUILDING DESIGN

Interior communication, as provided by Automatic Electric P-A-X (Private Automatic Exchange) systems, saves time and labor, and increases comfort, convenience and efficiency.

Automatic Electric P-A-X systems provide interior communication at its best. They are completely automatic—require no telephone operator or other attendant. Thus, they make private telephone service entirely practical in small organizations. They employ the same dependable equipment as is used for public telephone service in many of the largest cities in the world, and can therefore be relied upon also to handle the telephone traffic of organizations of the largest size.

Automatic Electric P-A-X systems can be supplied to serve any number of telephones from five or six to several hundred. In organizations of all sizes, these systems will quickly pay their way, and thereafter, for many years, return a very satisfactory profit on the investment.

AUTOMATIC ELECTRIC P-A-X SYSTEMS

A complete Automatic Electric P-A-X system consists merely of the required number of automatic (dial-equipped) telephones, a compact, self-contained automatic switchboard, and two or three wires connecting each telephone to the switchboard. The system requires no operator. It is always on duty—twenty-four hours a day, every day of the year. It never makes mistakes, but renders service with the efficiency, speed and accuracy of the automatic machine.

The automatic switchboard itself is similar in principle to that of the public automatic telephone system. Calls are completed by automatic mechanisms which are controlled by a dial on each telephone, the dial being operated in the same manner as in making calls from a public automatic telephone.

The various types of Automatic Electric P-A-X switchboards, their capacities and uses, and the special services available with each, are shown in Table A. Specifications of each type are given herein, and will be of value in selecting a system for any particular purpose.

In selecting the type of system required in any installation, it is advisable always to anticipate future requirements, as far as possible. It is ordinarily not safe to choose a switchboard which will be filled to capacity immediately upon installation. Consideration should also be given to the present, and probable future, requirements for Special Services (see below), as all Services are not offered with all types of systems.

SPECIAL SERVICES—The Special Services listed below are secured as "by-products" of automatic operation. They employ the P-A-X switchboard, the telephone wiring and cabling, and the telephones themselves, and the operating current required is usually secured from the power supply of the private automatic system. Supplementing its regular telephone service, these Special Services further expand the usefulness of P-A-X, and increase its value as a time-and-step-saver to the organization in which it is employed. Special Service facilities, when provided, are built into the switchboard itself, or in small supplementary units associated with it.

Code Call Service—When an individual cannot be reached at his own telephone, code call service makes it possible quickly to establish communication with him. The calling party merely dials a code call number, which indicates the person desired.

The code signals are then automatically repeated on audible or visible signals—bells, horns, lamps, etc.—distributed about the premises. The desired person, recognizing his code, steps to the most convenient telephone and dials a code call answering number, which connects him to the code call unit, and thus to the calling telephone.

Conference Service—Provides for bringing a number of persons in on one connection, so that they may hold a conference without leaving their desks.

TABLE A—CONDENSED SPECIFICATIONS OF AUTOMATIC ELECTRIC P-A-X'S

Type No.	Capacity		Type of Service	Special Services Available
	Number Telephones	Max. Number Calls at one time		
34A16	Up to 10	1	Selective Ring; Secret Service	Executive Right-of-Way
32A1	Up to 10	2	Full Automatic; Selective Ring; Secret Service	None
32A21	Up to 22	3	Full Automatic; Selective Ring; Secret Service	None
32A38	Up to 100	1 (or 2, under certain conditions)	Selective Ring; Common Talk	Conference, Master Station, Code Call, Direct Line
32A31	Up to 100	7	Full Automatic; Selective Ring; Secret Service	Conference, Code Call, Direct Line, Executive Right-of-Way
25 50	25 to 100 50 or more	7 7 or more	Full Automatic; Selective Ring; Secret Service	Conference, Code Call, Direct Line, Executive Loud-Speaking, Executive Right-of-Way, Fire Reporting and Recording, Watchman's Supervisory, Secretary Answering, Pick-Up, Monitor

Direct-Line Service—This service provides a direct, and permanent, two-wire circuit between two telephones, entirely separate from the regular switching circuits, and arranged so that when the hand set is lifted at either station the bell at the other station is automatically rung. Used for a pair of telephones that call one another very frequently.

Fire Reporting and Recording Service—More than an "alarm" service, because it provides facilities for telephone communication between the person reporting and the fire chief. Fire reports may be made from any of the telephones, and alarms may be sounded on signals distributed about the premises, and may be recorded on a punch-tape register.

Watchmen's Supervisory Service—Available in two forms. Type 1 is simply a recording service, the watchman's dialed number being automatically recorded on an Automatic Electric Multiple Time Recorder. Type 2 Watchmen's service provides, in addition, a telephone, and an alarm bell, for signaling any error, or failure to report.

Note: Other special services are described in the specifications of the various systems.

The Type 34A16 P-A-X

Capacity—10 telephones, 1 conversation at a time.

Type of Service—Selective ring, secret service (or some of the telephones may have "Right-of-Way" service, described below).

Switchboard and Cabinet—Switching equipment and power equipment in two standard surface cabinets, assembled together, for wall or table mounting. Dimensions, complete: height, 1 ft. 11½ in.; width, 10½ in.; greatest depth, 9¼ in. Neatly finished in aluminum paint.

Power Equipment—Switching equipment and telephone transmission require D-C; D-C or A-C may be used for telephone signals. Where 110-125 volt, 50-60 cycle A-C is available, power unit contains battery eliminator and separate transformer to provide A-C ringing current of approximately 50 volts. Cord and plug are provided for connection to commercial current.

If commercial A-C is not available, cabinet is provided with ten standard dry cells, and telephones are equipped with D-C signals.

Telephone Lines—Three wires from each telephone to switchboard.

Telephone Numbers—Two digits each—"10", "20", "30", etc., to "00". Signal at called station gives one long ring when the second digit ("0") is dialed. Ring can be repeated by redialing "0".

"Right-of-Way" Stations—Can overhear conversations on system, and interrupt, if desired, to make a call.

Installed Weight—Switchboard, complete, 45 lbs.

Further detailed specifications on request.

The Type 32A21 P-A-X

Capacity—22 lines, 3 conversations at a time.

Type of Service—Full automatic, selective ring, secret service.

Switchboard—Mounts, together with power equipment, in cabinet described below. Or, can be hinged on wall or placed on a table. Dimensions: height, 1 ft. 11¼ in.; width, 1 ft. 2 in.; depth, 9½ in. Neatly finished in aluminum paint.

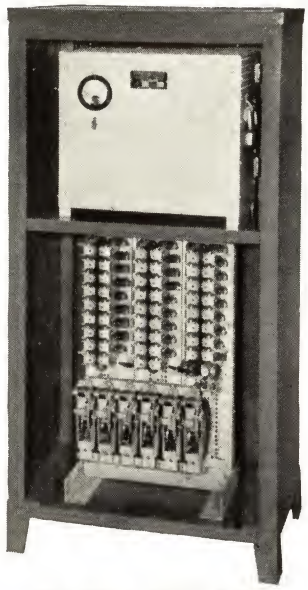
Cabinet—Floor type sheet steel cabinet, for switchboard and power equipment. Finished in olive green enamel (or other finish on special order). Dimensions, for switchboard and battery eliminator: height, 4 ft. 1½ in.; width, 2 ft.; depth, 1 ft. 2 in.

Telephone Lines—Two wires from each telephone to the switchboard.

Telephone Numbers—"1" to "9", "01" to "09", and "001" to "004." Ringing is automatic and intermittent.

Installed Weight—Maximum, 200 lbs.

Further detailed specifications on request.



The Type 32A21 P-A-X Switchboard Installed in Cabinet with Battery Eliminator

The Type 32A1 P-A-X

Capacity—10 lines, 2 conversations at a time.

Type of Service—Full automatic, selective ring, secret service.

Switchboard—Identical with Type 32A21, except height is 1 ft. 3¾ in.

Cabinet, and Telephone Lines—As described for Type 32A21.

Telephone Numbers—Single-digit ("1" to "9", and "0"). Ringing is automatic and intermittent.

Installed Weight—Maximum, 200 lbs.

Further detailed specifications on request.

The Type 32A38 P-A-X

Capacity—100 telephones, 1 conversation at a time (or 2, under conditions outlined below under "Secret Group" service).

Type of Service—Selective ring, common talk.

Switchboard—Similar in appearance to Types 32A1 and 32A21, and mounts, together with power equipment, in the same cabinet as described for those boards. Or can be hinged on wall, or placed on a table. Dimensions: height, 2 ft. 1¾ in.; width, 1 ft. 3 in.; depth, 1 ft. Neatly finished in aluminum paint.

Cabinet—As described for Type 32A21.

Telephone Lines—Three wires from each telephone to the switchboard.

Telephone Numbers—Two digits each—from "00" to "99". Signal at called station rings once when number is dialed. Ring can be repeated by redialing number.

Special Services—***"Secret Group" Service***—The telephones of officials and others who may desire secrecy of service may be placed in a "Secret" group of not more than thirty telephones. A call between any telephones in this group cannot be overheard from stations outside the group. And, while any such call is in progress, another call can be made between any two stations outside the "Secret" group. Thus, it is possible, in the order outlined, to set up and carry on two conversations at the same time.

Master Station Service—This method of operation is often used in schools and other institutions where it is desired to provide service only to and from one central point. Under this plan, one telephone is designated the "master" station. Regular stations can call the master station, or can be called by the master station (or, if desired, from certain other selected stations as well) but cannot call each other.

Group Ringing Conference Service—For this service, the principal, or other official, is furnished with a small key cabinet, placed on his desk. By flipping a key, he can then signal a selected group of telephones at one time. There can be as many as ten of these groups, and ten stations in each group.

Other Services—Code Call, Direct Line. (Direct-Line service cannot be provided if master station operation is employed.)

Installed Weight—Maximum, 350 lbs.

Further detailed specifications on request.

The Type 32A31 P-A-X

Capacity—50 lines, 100 telephones (two stations on each line), 7 conversations at a time.

Type of Service—Full automatic, selective ring, secret service.

Switchboard and Cabinet—Two-section floor-mounting framework, switching equipment in upper section, power equipment in lower. Enclosed in sheet steel cabinet, with hinged double doors on both sides. Neatly finished in aluminum paint. Dimensions: height, 4 ft. 9¼ in.; width, 4 ft. ¼ in.; depth, 2 ft. Cabinet is provided with conduit openings, with removable porcelain bushings.

Telephone Lines—Two wires from each telephone to the switchboard (or three, if two-station lines are used).

Telephone Numbers—Two digits each—"10" to "59" for the first 50 telephones, from "60" up for the second stations on any lines. Ringing is automatic and intermittent.

Special Services—Conference, Code Call, Direct Line, Executive Right-of-Way. Code Call requires a separate wall- or shelf-mounted unit, which is wired directly to the switchboard. Dimensions: height, 1 ft. 3¾ in.; width, 9¼ in.; depth, 9¼ in.

Installed Weight—Approximately 800 lbs.

Further detailed specifications on request.

The Type 25 P-A-X

Capacity—Recommended for use where 25 to 50 telephones are required initially, and maximum requirements will not exceed 100 telephones. Can be arranged for any necessary number of calls at one time. The usual requirements are shown in Table B. Where possible, the requirements of any organization are determined by our Engineers, from a study of the organization under working conditions.



Type 25 P-A-X Switchboard

TABLE B—STANDARD TYPE 25 P-A-X SWITCHBOARDS
Equipments and Installed Weights

Number Lines*	Number Calls at one time	Weight, lbs.
20	4	1200
25	4	1200
30	5	1350
35	6	1400
40	6	1400
45	7	1450
50	7	1450

*There may be one or two telephones per line.

Type of Service—Full automatic, selective ring, secret service.

Switchboard and Cabinet—Of sectional design, to simplify expansion as required. For initial installation of up to 25 lines, dimensions are: height, 4 ft. 9 in.; length, 4 ft. 6½ in.; depth, 2 ft. Can be expanded to 50 lines by adding a section on top (over-all height, 6 ft. 10⅛ in.); for further growth, sections are added at one end of original installation (over-all length, 9 ft. 1 in.). Cabinet has hinged doors front and rear, and is neatly finished in aluminum paint.

Telephone Lines—Two wires from each telephone to the switchboard.

Telephone Numbers—Two digits each—"01" to "99". Or, if two telephones are put on each line, three-digit numbers are used, to provide for selecting the desired station. Ringing is automatic and intermittent.

Special Services—***Executive Loud-Speaking***—Enables the executive to call a desired party by merely flipping one of a number of keys in a small cabinet on his desk, and to carry on conversation by speaking in an ordinary tone of voice, in the direction of the cabinet, exactly as in face-to-face conversation. This service eliminates the dial and telephone handset.

Pick-Up—This service may be provided for any P-A-X party whose duties take him frequently away from his desk, but within hearing distance of his telephone bell. It enables him to answer calls to his telephone by dialing from any other telephone in the system a specially assigned number.

Monitor—Permits the executive to supervise conversations.

Other Special Services—Conference, Code Call, Fire Reporting and Recording, Direct Line, Executive Right-of-Way, Watchmen's Supervisory Service. However, all of these services cannot be provided on one installation.

Installed Weights—See Table B. If storage battery is used, add 400 lbs. to figures given.

Further detailed specifications on request.

The Type 50 P-A-X

Capacity—This system is generally specified when the initial installation is to be about 50 lines, or more. It can be expanded to any desired size by the addition of sectional units. The Type 50 P-A-X can be arranged for any necessary number of calls at one time, the usual requirements being shown in Table C. Where possible, the requirements of any organization are determined by our Engineers, from a study of the organization under working conditions.

Type of Service—Full automatic, selective ring, secret service.

Switchboard and Cabinet—For initial installation of 50 to 100 lines, two-section cabinet is usually provided. Dimensions: height, 4 ft. 9 in.; length, 6 ft. 3½ in.; depth, 2 ft. Additional sections, 2 ft. high, can be added on top or end, as required.

Telephone Lines, and Special Services—As described for Type 25.

Telephone Numbers—Two digits each—"01" to "99"—for up to 100 lines. Three digits each for 100 to 1000 lines, or for two telephones on a line.

Installed Weights—See Table C. If storage battery is used, add 400 lbs. to figures given.

Further detailed specifications on request.

TABLE C—STANDARD TYPE 50 P-A-X SWITCHBOARDS
Equipments and Installed Weights

Number Lines*	Number Calls at one time	Weight, lbs.
50	7	1800
55	7	1900
60	8	1900
65	8	2000
70	8	2000
75	9	2100
80	9	2100
85	10	2200
90	10	2200
95	10	2300
100	10	2300
125	14	3000
150	17	3300
175	19	3600
200	20	4000

*There may be one or two telephones per line.

P-A-X Telephone Instruments

The telephone instruments offered for use with Automatic Electric P-A-X systems are equal to the finest dial telephones regularly used for public telephone service. They can be depended upon to render a long lifetime of useful service, and their fine finish and distinctive design make them objects of pride wherever they are installed.



Type 34A3—Self-contained Desk Monophone



Type 1A—Desk Monophone



Type 35A5—Wall-Mounting Monophone

P-A-X Monophones

The newest and finest of these instruments are the Type 34A3 Self-Contained Desk Monophone and the Type 35A5 Wall-Mounting Monophone, illustrated. These instruments are of the modern handset design, and are strikingly handsome in appearance. The Type 1A Desk Monophone, also illustrated, is of somewhat more conservative design, and requires a separate bell box. These types are available in a range of jewel-like colors, with gold- or chromium-plated trim, to harmonize with any decorative scheme.

Telephones of more conventional designs can also be supplied, of the same high quality of construction. And for special purposes, there are special telephones—flush wall instruments for corridors, elevators, etc.; outdoor telephones for use in locations exposed to dampness or dust; switching-key telephones; extension telephones, etc. A complete catalog of P-A-X Telephones will be gladly sent, on request.

Installation

As the operation of the Automatic Electric P-A-X switchboard is entirely mechanical, and rarely requires personal attention, it is not necessary to place it in valuable open space. Because of its small size it can be located in a small room, under stairs, etc.—in any place which is dry and reasonably free from dust. However, for ease and economy of wiring, the location should be fairly well centralized with respect to the telephones.

The room in which the switchboard is placed should be provided with a connection to commercial power, for operation of the system. If A.C. is available, the system may be operated from an Automatic Electric battery eliminator, or from a storage battery charged by means of an Automatic Electric rectifier from the commercial current. If the commercial power is D.C., a storage battery is used, and is charged through an Automatic Electric D.C. charging unit. Ordinarily, no special power wiring nor outlets are required.

Automatic Electric P-A-X systems may be installed by the electrical contractor or by the Automatic Electric installation engineers, as desired.

Telephone Wiring

The telephone line wiring may be carried in paired or triplex wire (depending upon the type of P-A-X installed), or in telephone cable. Cable is recommended, particularly on larger systems, since it is most easily installed, and provides protection for the line conductors. Lead-covered cable is recommended for use in locations where it may be exposed to moisture. Such cable may be run from the switchboard to various points about the building, and there terminated in building terminal boxes. From these boxes, the lines are then distributed in telephone wire.

When possible, conduit and ducts should be provided, to afford protection for cable and wiring. Flush wall terminal boxes may then be employed, to improve the appearance of the installation.

Ordinarily all the telephones connected to a P-A-X are located within the same building. In some cases, however, a number of telephone lines may be run out-of-doors, and thereby exposed to lightning or to contact with electrical power lines. Suitable protection should be provided for each exposed telephone line. Protective equipment for this purpose may be connected to the lines where they enter the building. Such protective equipment, when required, is mounted on suitable wall- or floor-type racks.

Maintenance

The maintenance of an Automatic Electric P-A-X system can be handled by any reasonably competent mechanic—for example, the building engineer or electrician. And, in all territory served by our offices, we are prepared to provide services of routine inspection and adjustment, to supplement the work of the regular maintenance man.

Engineering Consultation

Provisions for interior communication and signaling should preferably be planned at an early stage in the development of a project. Special commercial power supply, where required on larger installations, can then be provided at the proper places, and ducts for wiring may be concealed, so that the completed building will not be disfigured with exposed wires.

The information given in these pages will serve as a guide in the tentative selection of an Automatic Electric P-A-X system for any particular installation. Before specifying any system, however, you are invited to call upon us. AUTOMATIC ELECTRIC COMPANY maintains a staff of thoroughly experienced telephone engineers, who are well qualified to advise in the selection and application of its products to any particular requirements. The services of these engineers are available without obligation. Simply telephone, write, or telegraph our nearest office.

MONOTYPE MANUAL TELEPHONE SWITCHBOARDS

Occasionally situations arise when manually operated telephone systems are preferred. To meet such requirements we are prepared to furnish manual telephones and switchboards of any capacity. Monotype manual telephone switchboards are of modern design—compact and sturdy, and equipped for easy operation and long life.

The telephones for manual telephone systems are similar to those offered for Automatic Electric P-A-X, differing only in the omission of the dial.



Monotype Floor Type Manual Telephone Switchboard



Type 32A14 Manual Wall Telephone



Type 32A14 Manual Desk Telephone



Monotype Cordless Manual Telephone Switchboard

AUTOMATIC ELECTRIC INTERCOMMUNICATING SYSTEMS

These small intercommunicating (generally known as "Intercom") telephone systems provide an inexpensive and practical solution to the interior communication problems of the smaller residence, club, or industrial organization. They require no operator and have no central switching equipment—the person making a call merely depresses a pushbutton on his telephone to signal the station desired. Signaling is selective—that is, only the desired station is rung.

The telephones provided in these systems are of the modern handset type, and are designed and made to render a long lifetime of useful service. They are equipped with either one, six, or ten pushbuttons, depending upon the capacity of the system in which they are used.

A complete catalog of Automatic Electric intercommunicating systems is available, and will be sent on request.

THE BELL TELEPHONE SYSTEM

AMERICAN TELEPHONE AND TELEGRAPH COMPANY AND ASSOCIATED COMPANIES

PLANNING FOR TELEPHONES IN RESIDENCES AND OTHER BUILDINGS

Telephone service in homes, apartments, hotels, hospitals, business and public buildings requires the installation of wires, cables, terminals, and in many cases switchboards and associated equipment.

The provision of facilities for telephones, conduits, cable shafts, etc., during construction makes possible the concealment of the telephone cables and wires in the walls and floors. These facilities, together with the provision, where required, of space for switchboards and terminals, make for the general betterment of the buildings and the telephone service, and the satisfaction of the owner and tenants. They avoid the necessity of drilling holes through finished walls and floors, the exposure of wires and cables in rooms, halls, and offices, and the defacement of walls and trim by the wire and cable attaching devices. They provide flexibility which makes possible rearrangements and changes in the location or number of telephones which are often necessary to meet changing requirements for service both in commercial and residential buildings; and the mechanical protection afforded serves to prevent interruptions to the telephone service. These facilities are provided by the owners since, in common with water and gas pipes, and electric light and power conduits, such facilities must necessarily become a permanent part of the building. Therefore, it is essential that specifications for new and modernized residences and other buildings cover the provision of conduits, cable shafts, cabinets, and space requirements for switchboard equipment.

Because of the wide variation in telephone service requirements, it is not practicable to furnish herein specific information on which the architect, engineer, or builder can, in all cases, plan the telephone facilities in detail. However, to assist in preliminary studies of building projects, there is outlined below for various types of buildings the general scope of the facilities recommended.

The telephone companies of the Bell System furnish a telephone planning service without charge. This service may be obtained by calling the nearest Bell Telephone business office and asking for "Architects' and Builders' Service."

RESIDENCES

It is a very simple matter to provide for concealed telephone wiring in residences. One or two lengths of pipe or conduit extending through the walls from basement to the upper floors are usually adequate for the average home. Modern building methods make such pipe or conduit necessary if wires are to be concealed, since wall insulation, fire-stops and many modern building materials make it impossible to "fish" wires through completed walls and floors. It is important, therefore, that conduit be provided not only to locations where telephones are required initially but also to locations where telephones may be needed in the future due to the growing or changing needs of the owner. In view of the increasing popularity of an additional telephone upstairs and in the kitchen, these locations should receive special consideration. Outlets located at strategic locations can also be arranged for portable telephones.

The illustration to the left, Figure 1, shows how a short pipe (1) from the basement provides concealed wiring for the first-floor telephone. A pipe (2) from the basement can carry telephone wires to a centrally located outlet on the second floor. A second pipe can be placed in larger homes to ensure concealed telephone wires when more than one second-floor telephone is desired. Extending the pipe (3) along the basement ceiling conceals wiring if basement space is to be finished for a game room.

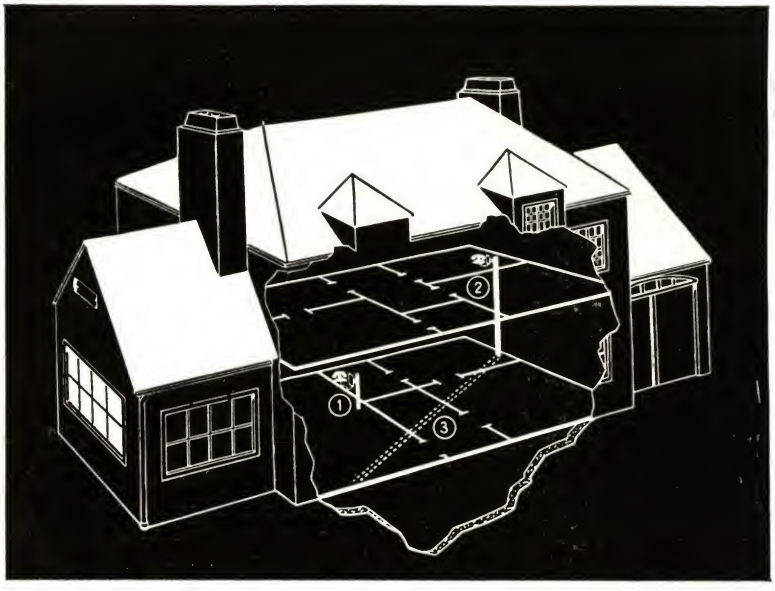


Fig. 1. In small and medium-sized homes conduit or pipe from basement to first and second floors, terminating in outlet boxes, is usually all that is needed.

In the larger and finer homes more complete telephone service arrangements will usually be required. A conduit system in walls and floors, centering on closet space for an apparatus cabinet is illustrated in Figure 3, page 2. The Telephone Company should always be consulted where comprehensive residence systems of this kind are likely to be installed.

To avoid exposed wires on the outside of the house, it is sometimes desirable to provide a conduit entrance, Figure 2, page 2, similar to that generally used for lighting wire entrances. Underground wires from the pole to the house may also be desired, and the Telephone Company should be consulted on such installations.

BUILDINGS

Service Entrances

The service connection from the building to the telephone plant is usually underground and the Telephone Company should always be consulted regarding these entrances.

Office, Loft and Public Buildings

The telephone arrangements in office buildings are complicated and subject to frequent changes owing to the wide range of telephone service demands and the varying requirements of the tenants. It is possible, however, to meet these changing requirements properly by means of a permanent cable system extending up through the building with branch cables terminating in distributing terminal cabinets at suitable points on each floor. In these buildings the wires are usually run from the distributing terminal cabinets in underfloor ducts, floor conduit or other types of raceways to the telephones.

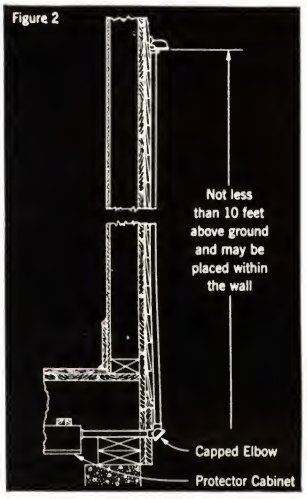
In loft buildings the floors as a rule are undivided and the location of the telephones is not known until the space is occupied. Advance provision for wire distribution therefore requires some general system of ducts or raceways in the various floors.

In public buildings, such as Federal, State and municipal buildings, banks, railway stations, docks, terminals, auditoriums, convention and exhibit buildings, etc., the problems involved in the design of facilities for telephones are in general the same as for office buildings, except that special provision is desirable in some cases, such as auditoriums and convention halls, for additional temporary services required for special occasions.

Facilities for Cables and Wires

Figure 4 shows diagrammatically the entrance for the central office cable, the cable terminal or frame

Figure 2



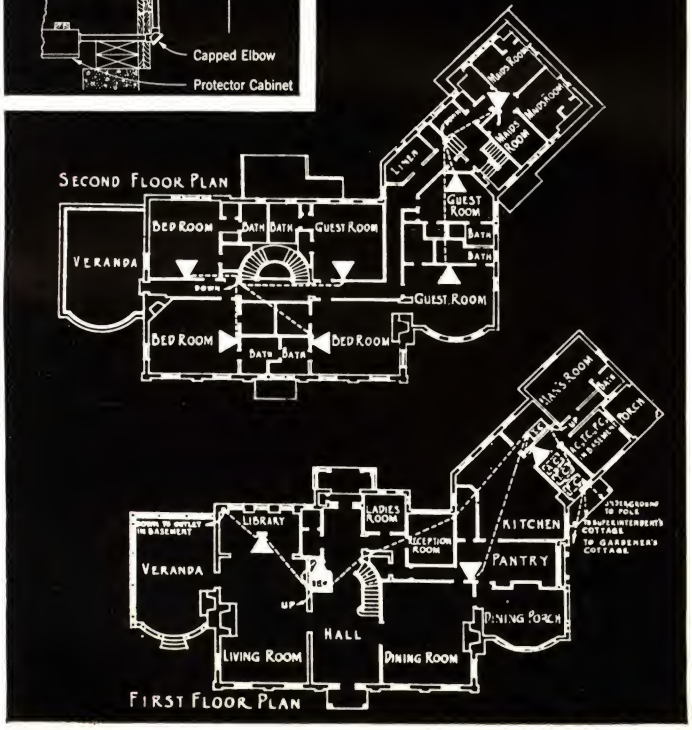
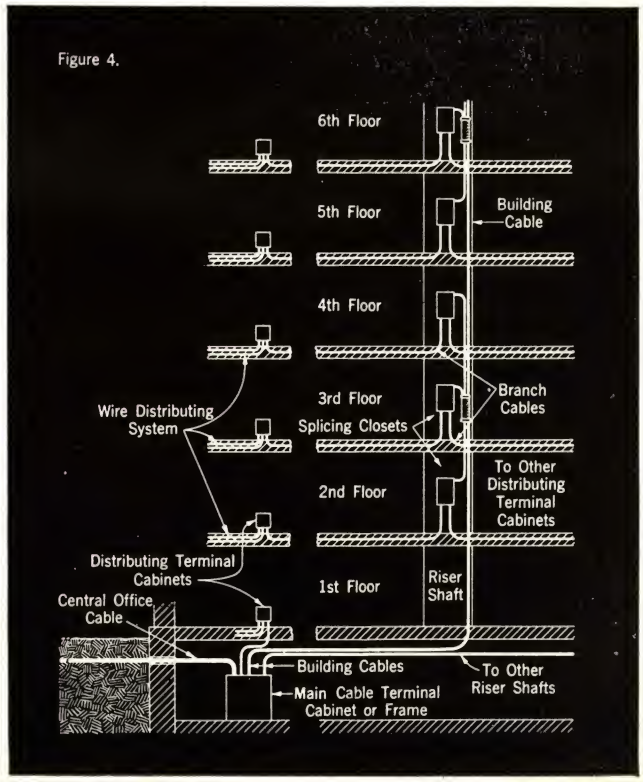


Figure 3. Large residence equipped for complete telephone convenience with two central office lines, an intercommunicating system, and twelve telephone outlets.

Figure 4.



on which the cable terminates and from which the building cables extend up through the building in the riser shaft or shafts to the splicing closets. From the splicing closets, branch cables run to distributing terminal cabinets located on the various floors and from these cabinets wires extend through facilities, such as underfloor duct systems or conduits, depending on the character and occupancy of the buildings, to the telephone locations.

Hotels, Hospitals and Apartment Houses

The ultimate requirements for telephone service in hotels can be fairly accurately forecast since the number of telephones required is closely determined by the number of rooms and as a general rule the location of the telephones in the various rooms are permanent. From the main cable terminal cabinet or frame (Fig. 4) where cable from the central office is terminated, building cable is run to the hotel switchboard and the riser shaft or riser conduit up which it extends to the floors above.

Hospital installations are largely similar to hotels in that the location of the telephone outlets are relatively fixed.

In apartment houses, where private branch exchange systems are not generally provided, the wires from each apartment connect to the building cables which in turn are connected to central office cables. The telephone outlets provided in the apartments should be sufficient in number and their location so arranged as to bring about the greatest comfort and convenience in the use of the service for both making and answering calls. It is desirable, therefore, that the conduits and related facilities installed be sufficient not only for the immediate but also for the ultimate telephone service which may be desired.

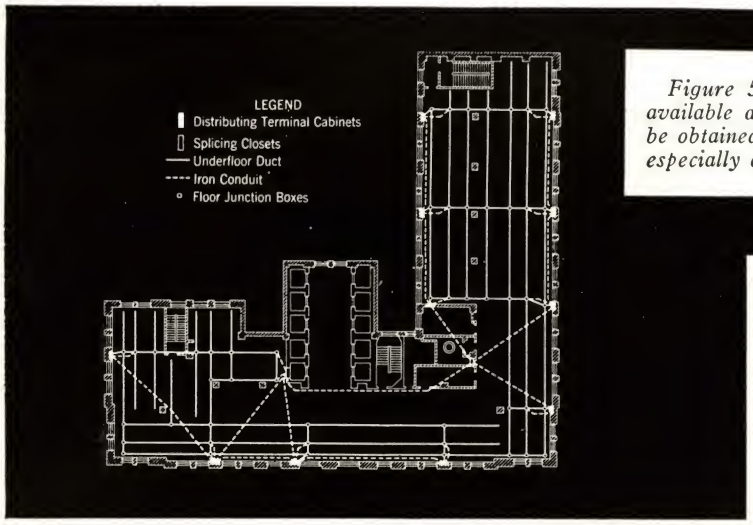


Figure 5. Commercial under-floor duct systems are available and full details regarding these systems may be obtained from the manufacturers. These systems are especially advantageous for large buildings.

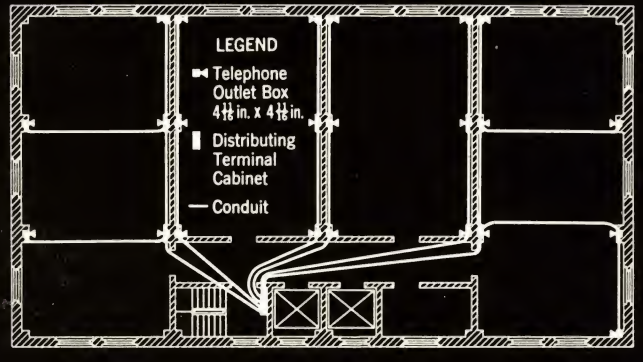


Figure 6. Conduit systems consisting of a network of conduits, while not affording as complete wire distribution as the underfloor duct systems, are suitable for many buildings.

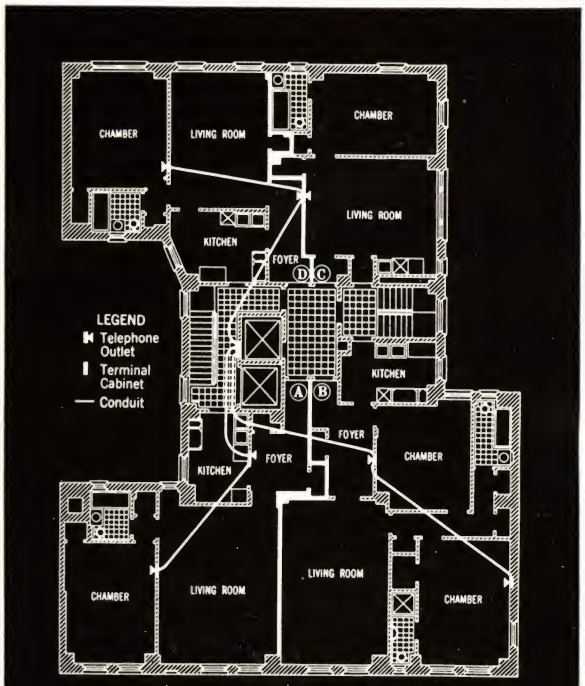


Figure 7. Typical Plan of Conduit and Related Facilities for Apartment Houses.

Private Branch Exchange Switchboards and Associated Equipment

In many buildings, especially large office buildings, department stores and hotels, private branch switchboards are required for handling the intercommunicating telephone service in the building as well as the exchange telephone service. For the operation of the larger installations of these private branch exchanges, power machines, storage batteries and terminal frames are required and sufficient space should be provided for this equipment. In connection with the operation of the switchboards, floor space should also be provided for the telephone operators' quarters and it is important that adequate light and ventilation be provided in the space set aside for these purposes.

The requirements for this service vary widely and the Telephone Company should be consulted in all cases with a view to determining in the planning of the building the desirable amount and arrangement of the floor space required for the switchboard equipment and operators' quarters.

Facilities for Public Telephones

Office buildings, hotels, theaters, clubs, hospitals, stores, etc., require public telephone facilities for the convenience of their occupants and patrons. These facilities include booths in which the telephones are placed and tables or shelves for the telephone directories.

The general appearance and usefulness of these facilities are enhanced by their inclusion in the design of the buildings so that they harmonize with their surroundings. It is, therefore, recommended that the builders provide the booths as a permanent part of the buildings together with any space that may be required for directories. Alcoves or rooms having easy access have been found generally satisfactory for these facilities.



Figure 8. Built-in Public Telephones

Public convenience has indicated the desirability of adequate ventilation for the telephone booths by the use of doors which are open when the booths are not in use and in some instances for ventilating systems. Helpful information on the planning of built-in telephone booths may be obtained from the Telephone Company by calling the nearest business office and asking for "Architects' and Builders' Service."

BELL SYSTEM SERVICES MEET EVERY COMMUNICATION REQUIREMENT

The Bell System offers a selection of services to meet any type of communication requirement. These services provide the following important features and advantages:

(1) Bell System services are charged for on a low monthly rental basis—no large initial investment required.

(2) Bell System maintenance is provided without charge—just call "Repair Service."

(3) Bell service means *one system* to handle both inside and outside telephone requirements. Separate systems mean duplication of telephones on desks, less flexibility and greater space requirements for switchboards.

(4) Bell System equipment is dependable—over 50 years' experience in the communication field.

(5) Changes in equipment can be readily made to meet current requirements—just call the Business Office.

For information regarding telephone company services and facilities please call the Business Office. A representative will gladly call without obligation to you.

THE CAPEHART. INCORPORATED

Manufacturers of Musical Instruments for the Finer American Homes

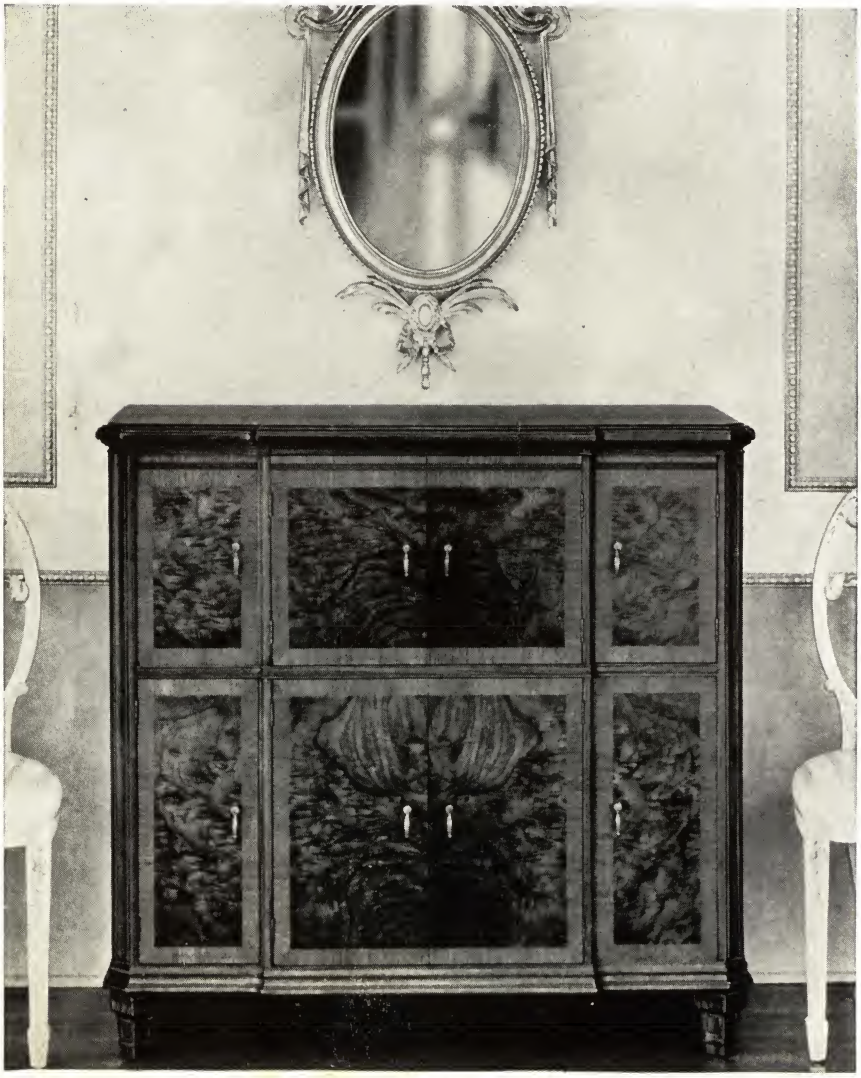
FORT WAYNE, IND.

Equipment providing for the distribution and complete control of music and entertainment from both automatic phonograph and radio throughout the home.

PROVIDING FOR SUPERB COMMAND OF THE WORLD'S FINEST MUSIC

The Capehart, the musical instrument of the finer homes, gives superb command of the treasures of music, from the classics of the immortals to the masterpieces of modern artists; music for every occasion and desire, the formal or the informal dinner, the dance, the cocktail hour, the afternoon bridge . . . background music for social events, for reading or work in the library . . . specially selected concerts for the entertainment of guests . . . music of the masters . . . vocal, instrumental; solos, choruses, bands, orchestras, operas . . . music of the great artists, modern romantic or classic, for the students in the home to study, enjoy, appreciate . . . music for the mood . . . to entertain, to soothe, to relax, to exalt, to inspire.

The instrument that will fully meet all requirements for music in the modern home is the Capehart, the only phonograph-radio combination with the exclusive Capehart record changer. The Capehart is the only instrument which automatically plays complete operas, symphonies and album sets of music in their correct sequence. The Capehart has not only the highest fidelity, but this fidelity covers the full scale, including the bass and middle frequencies as well as the treble, bringing out all of the beauty of the original production. It is the one musical instrument which fully meets all the requirements for music in the modern home. It is truly the modern masterpiece and is considered indispensable in the finest homes.



The Adam

THE CAPEHART RADIO

The many exclusive features of the Capehart Radio, plus precise, individual construction, account for its reputation as the finest radio obtainable.

Triple-Unit design is one of these unique features. The Capehart Series 400 Radio is built in three separate units—Tuner, Bass Amplifier and Treble Amplifier. This *triple-unit* construction permits the segregation of parts and wiring, eliminating inter-set noise development and interference, and promoting increased efficiency.

Twenty-three tubes, including the newest type all metal tubes, are used as follows:

Tuner	Bass Amplifier	Treble Amplifier
8 tubes	11 tubes	4 tubes

Automatic Frequency Control provides automatic center tuning and eliminates fine tuning.

Variable Selectivity Control provides high fidelity reception, giving reception over the entire broadcasting channel of any radio broadcasting station.

All-wave Reception covers the Standard Broadcast Band, all Short Wave Bands (including domestic and foreign Short Wave, Police and Amateur phone and code).

Band	Frequency, kilocycles	Wave Length, meters
Broadcast	540 to 1,700	555 to 176
Entire Short Wave	1,700 to 18,000	176 to 16

Designed and built, not to a price, but to a standard of quality, we believe, far above that of any other, the superiority of Capehart Triple-Unit Radio is unchallenged.

Tone Color

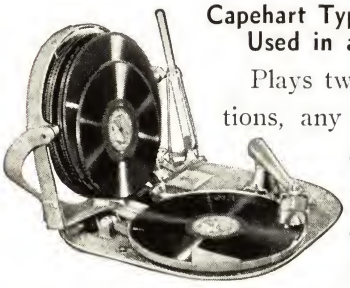
Tone color, that almost indescribable something which makes tones rich, melodious, and pleasing to the ear, is present in abundance in Capehart reproductions.

Capehart tone color, tone purity and faithful reproduction are so perfect that it is difficult, if not impossible, to distinguish the rendition from the original of the artist's voice or instrument.



Speaker Cabinet Style "A"
Width 24 in.; height 27½ in.; depth 15 in.

It is this outstanding achievement in faithful reproduction which gives Capehart its unique place in the field of music — a place beyond the reach of any other instrument.



Capehart Type "16-E" Record Changer Used in all models of all Series

Plays twenty records, forty selections, any standard makes, 10-inch or 12-inch, or both intermixed. Plays both sides of each record in succession, one side only, or repeats any record as desired. Reproduces the operas, symphonies and album sets in their proper sequence. Entirely automatic and continuous in operation. Equipped with Capehart True Tangent Feather Touch Pick-up, which increases record life three to five times.

Only the Capehart has all of these desirable features.

Remote Control

Capehart Remote Control provides for the operation of speakers and control stations at any and as many desired locations throughout the home and grounds as required.

Capehart Cabinets

The instrument is available in Adam, Empire, Modern, Chippendale (illustrated) and Louis XVI stylings, or in a plain cabinet where it is desirable to conceal it in a closet or similar location.

Speaker Mounting and Location

Speakers are supplied mounted on baffles for mounting in the walls or in cabinets as illustrated. They may be located at any desired places throughout the home.



The Capehart Control Station

All Series 500, Series 400 and Series 1600 models can be supplied, at additional cost, with the Exclusive Capehart Remote Control. This provides for any given number of Remote Control stations, and additional speakers which may be installed throughout the house and grounds, regardless of distance

Control Stations

Control Stations may be located at any desired places. Small and attractive, they may be placed on a small table at the chair side, davenport end, dining table or in any other convenient location.

All Control Stations provide for:

1. Tuning to any radio station. A Kilocycle Dial on each Remote Control Station shows to what wave length radio is tuned.
2. Turning all current off and on all speakers, the instrument, and all Control Stations.
3. Turning off and on each individual speaker—voice coil and a-c. leads.
4. Increasing or decreasing volume for all speakers.
5. Switching from phonograph to radio, or vice versa.
6. Rejecting any record.

Remote Control Wiring

Wiring for Remote Control is very simple and can be installed by any electrician. Wires from the instrument to Remote Stations are bound into cables making wiring and installation easy. Special flat cable is supplied for laying under rugs and carpets.

Information for Architect and Owner

When designing a residence in which remote control of radio and phonograph music is desired, architects should avail themselves of the service of Capehart Engineers by writing to the Architects' Consulting Division, THE CAPEHART INCORPORATED, Fort Wayne, Ind.

To specify and be responsible for the installation of a Capehart is to realize that there will be no feeling of inadequacy in future entertainment for the owners and their guests, for Capehart gives superb command of the great treasures of music of all ages—music for every occasion and desire.

Place your requirements in the hands of Capehart Engineers and be responsible for the selection of a musical instrument to match the other fine and dependable equipment that the world's finest engineering and manufacturing talent has provided elsewhere in the building for which you are responsible.

WESTERN ELECTRIC COMPANY

Western Electric Systems for Public Address, Music Reproducing, Announcing and Program Distribution

Distributor in the United States
GRAYBAR ELECTRIC COMPANY
Graybar Building, New York, N. Y.

Distributor for Canada and Newfoundland
NORTHERN ELECTRIC COMPANY, LIMITED
1261 Shearer Street, Montreal, P. Q.

Distributor in Other Countries
INTERNATIONAL STANDARD ELECTRIC CORPORATION
67 Broad Street, New York, N. Y.

WESTERN ELECTRIC PUBLIC ADDRESS AND SOUND DISTRIBUTION SYSTEMS

PURPOSE

Western Electric

Western Electric sound distributing equipment makes buildings *modern*—whether they are new or old, large or small. It performs many valuable services in hotels, schools, hospitals, department stores, auditoriums and other buildings—at an operating cost of a few cents an hour.

This Western Electric apparatus picks up, amplifies and distributes speech or music to all parts of an auditorium—to any or all rooms in a building—or to a number of points out of doors. Program sources may be (1) Microphones, (2) Record Reproducer, (3) Radio Receiver.

These systems are included in the original plans for many new buildings, and play an important part in many modernization projects.

WHAT GOES INTO A SOUND SYSTEM?

There is much more to a good sound system than just electrical equipment.

Six factors—illustrated below—must be balanced with expert care.

For example, take sound origin. Is the system to reproduce speech only—music—or both? The frequency range required will vary greatly—and so must the equipment, if results are to be right.

Microphones, amplifiers and loud speakers must be more than good units *individually*—they must all be engineered according to a co-ordinated design so they will be good *collectively* under specific conditions.

And these conditions include the room or rooms: size, shape, acoustics, etc. And the type of audience expected: whether a small or large number of people; whether sitting quietly or on the move.

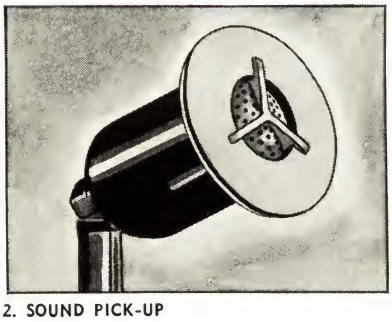
DESIGN, WORKMANSHIP AND SERVICE

Western Electric manufactures sound distributing equipment to meet every need. Each installation is skillfully engineered to meet specific requirements.

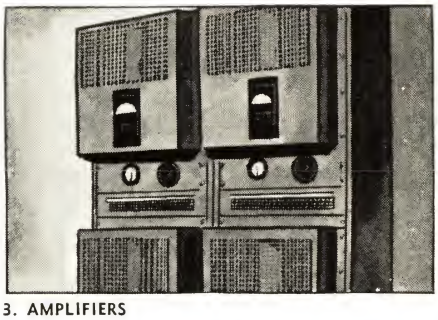
This equipment is developed by Bell Telephone Laboratories—the research laboratories of the American Telephone and Telegraph Company and the Western Electric Company.



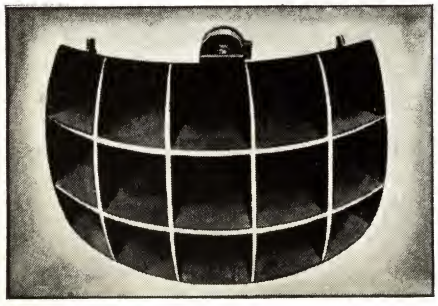
1. SOUND ORIGIN



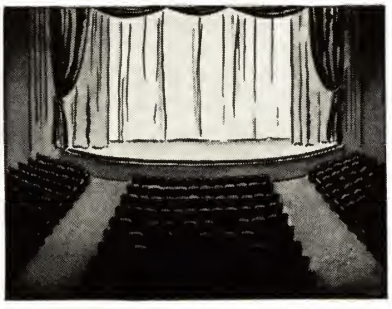
2. SOUND PICK-UP



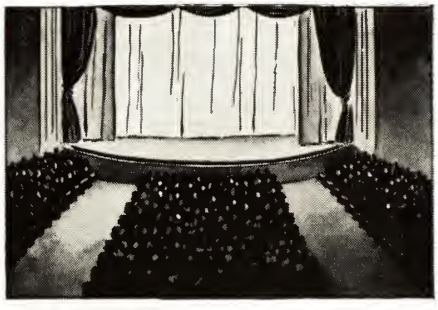
3. AMPLIFIERS



4. LOUD SPEAKERS



5. THE ROOM



6. THE AUDIENCE



When the show goes on at the International Casino, one of New York's finest night clubs, Western Electric equipment plays an important part. Microphones, amplifiers and loud speakers enable all to hear clearly.

Quality workmanship and performance are assured by the name Western Electric—manufacturer of sound-transmission apparatus for the Bell System since 1882.

Spare parts, engineering advice and expert service are always available through distributors located at strategic points.

COST

Because each installation of Western Electric sound distributing equipment is planned to meet individual needs, prices are quoted only after a careful survey of the project has been made.

Operating costs are surprisingly low—only a few cents an hour.

USES OF SYSTEMS

Sound amplifying and distributing systems—which can supply entertainment or other services 24 hours a day—have proved especially valuable in buildings of the following types:

Hospitals—This equipment handles "doctors' paging" service quickly and quietly throughout the largest hospitals—saves minutes that may save lives. To assure adequate coverage without undue loudness, each speaker has an individual volume control which may be set and locked.

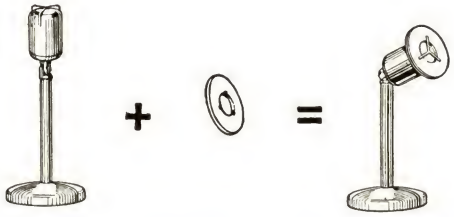
This system may be used, too, for supplying entertainment (under strict control by doctors) to patients in private rooms or wards. Sources of programs may be radio programs or records. In private rooms, loud speakers may be used—in wards, individual headsets allow convalescents to listen without disturbing others.



Hotels—Sound distributing equipment has proved a real business builder in hotels from coast to coast. It is essential for sound amplification at conventions and banquets; it pages guests quickly, clearly in public rooms; it distributes music to guest rooms or public rooms; makes important announcements so all can hear.

Schools—Many leading schools have found that a sound distributing system is an effective aid to administration and education. It enables the principal to address all classes from his desk; delivers fire drill instructions and emergency announcements instantly; supplies voice amplification or music in auditorium or gymnasium; is a proven aid to teachers of languages, current events, music appreciation, home economics and other courses. It may be used to distribute radio programs to any or all rooms.

Other Uses—In railroad stations, department stores, courtrooms, factories, penal institutions; at airports, stadiums and amusement parks; on movie sets and in theatres; in newspaper offices, on steamships, in vehicular tunnels and many other places—Western Electric sound distributing equipment is proving valuable.



Western Electric "Salt-Shaker" Microphone is non-directional (i.e. it picks up sound equally well from all directions). Add the acoustic baffle and it becomes directional. This type of microphone is especially recommended for use with sound distributing systems—it gives "broadcast quality" pick-up at low cost.



Planning a sound amplifying and distributing installation involves many technical problems that must be solved correctly while your building is still in the blueprint stage. There is no reason why you should add these problems to your list of worries, which is already long enough!

When you face a sound system problem, call on the distributors of Western Electric equipment for "Sound" advice. They have had years of experience in working with leading architects on hundreds of installations.

For further details, a survey of your specific project, estimates and engineering service, address any of the distributors listed on the preceding page.

MEMORANDA